Appendix B

2015 Vegetation Monitoring Program Observation Monitoring Sites and Livestock Grazing Summary for the Kern Water Bank

Great Blue Heron (Ardea herodias)
2015 Vegetation Monitoring Program Observation Monitoring Sites and Livestock Grazing Summary for the Kern Water Bank

SUBMITTED TO:

Kern Water Bank Authority

PREPARED BY:

svb

June 24, 2016
2015 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

June 24, 2016
INTRODUCTION

The Kern Water Bank (KWB) vegetation monitoring program consists of eight permanently established vegetation Observation 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 in an attempt to help improve and maintain habitat quality, control invasive plants, 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 2015 rain year (October 1, 2014 – September 30, 2015) for the KWB was approximately 5.33 inches. That was significantly higher than the 2.42 inches that fell during the prior 2014 rain year. Although 5.33 inches is still below the long-term average of 6.12 inches for the Bakersfield area, it was approximately 87% of the normal, and well over twice as much as the 2014 rain year. Officially, 2015 was the fourth successive season of below average rainfall and the effects of the drought have dramatically impacted all of central and southern California. Still, the 2014 – 2015 rain year brought abundant welcomed growth of vegetation on all parts of the KWB.

It was reported in 2014 that there was almost no observable primary production at almost all of the OMS. Photographs 1 – 4 help to illustrate the contrasting conditions observed in 2015 from what was seen in 2014. The 2015 rain year got started with modest rainfall in October and very little in November, but December was relatively wet with a little over 2 inches of precipitation falling in the Bakersfield area. These early rains resulted in
relatively rapid growth of herbaceous vegetation. Although by late January it appeared that the potential for a substantial growth of vegetation was possible, it was unknown whether the rain would continue. SVB began reconnaissance site inspections on the KWB in mid-January to monitor vegetation growth and make recommendations as to whether cattle should be turned out into one or more areas. The decision was made to hold off turning out cattle and continue to monitor growth and rainfall into February.

By late February, herbaceous growth had progressed substantially and the decision was made to turn cattle out into the areas where growth appeared to be most rapidly progressing. Cattle were introduced back into the Strand, West, and River areas in late February in an effort to keep the abundant vegetation growth in check. A total of 115 Animal Units (AU, defined as one adult cow and her calf), were put into the Strand Area, 120 AU were turned out into the West Area, and 55 AU were put into the River Area. In general, cattle numbers were systematically increased and maintained into June and early July in most areas (Figure 2). By early August, it was determined that cattle numbers should begin to be drawn down, as most of the KWB looked to be in excellent range condition. The often problematic late season Russian thistle (Salsola tragus) blooms that the KWB has experienced in many prior years did not really come to pass in 2015. There were some areas such as the Strand Area that did have some noticeable Russian thistle growth, but it was substantially less than many prior seasons. The Strand Area is consistently the most densely vegetated area on the KWB. There was still a large amount of standing dry vegetation over much of the Strand despite late into the season. As a result, cattle numbers were increased and maintained in the Strand Area for the entire year (Figure 2, Photograph 5). This was also the case, albeit to a lesser extent within the Main Area as well. The North Area also experienced some Russian thistle growth late in the season and cattle were turned out there in June and were increased significantly in number from August through December to not only combat the Russian thistle, but also to lessen the standing dry vegetation that still remained from earlier in the season.

The River Area did not require the same level of intensity of grazing that most of the other areas on the KWB. Cattle were turned out in modest number in late February and the numbers remained steady into early May to help keep the abundant herbaceous growth from becoming too dense (Photograph 6). Cattle were decreased in May, but additional cattle were returned to the River Area in early September to combat some late-season Russian thistle growth. The James Area did not require significant grazing in 2015. Cattle were turned out in relatively low number (55 AU) into the James Area in early May and remained until early September. These cattle were then moved to the River Area, as described above.

In conclusion, the 2014 – 2015 rain year brought abundant, but not excessive growth of vegetation to most areas of the KWB, and most of the upland habitats appeared to be in a healthy and desirable condition for most native wildlife species.
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 in 2015.
Photograph 1.
Vegetation conditions at OMS 1 on March 7, 2014. Note the very scant growth of vegetation.

Photograph 2.
Same area as above as it appeared on March 9, 2015. Note the abundant herbaceous growth compared to the prior year.
Photograph 3.
Vegetation conditions at OMS 4 on March 7, 2014. Note that essentially no growth of vegetation is evident.

Photograph 4.
Vegetation conditions at OMS 4 on March 9, 2015. An abundance of lush green growth can be seen.
Photograph 5.

Vegetation conditions at OMS 3 in the Strand Area on August 7, 2015. An excessive cover of dense, dry herbaceous cover was still standing. Cattle were allowed to remain to remove some of the excess cover.

Photograph 6.

Densely growing vegetation conditions at OMS 5 in the River Area on February 11, 2015. Cattle were turned out in the River Area two weeks later to help manage the abundant growth.
ATTACHMENT 1

Kern Water Bank 2015 Observation Monitoring Site Observation Program Observations
KERN WATER BANK 2015 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

<table>
<thead>
<tr>
<th>Quarter</th>
<th>Survey Date</th>
<th>Time</th>
<th>Monitor(s)</th>
<th>Rainfall to Date</th>
<th>Wind Direction</th>
<th>Wind Velocity</th>
<th>Temperature</th>
<th>Humidity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st</td>
<td>03/09/2015</td>
<td>10:00 AM</td>
<td>J. Jones</td>
<td>4.26 IN</td>
<td></td>
<td>0 MPH</td>
<td>63 F</td>
<td>58%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| Notes:  | WILDLIFE PRESENT: COTTONTAIL, MEADOWLARK, MOURNING DOVE, RAVEN, SCRUB JAY, WHITE-CROWNED SPARROW.
|         | PLANTS PRESENT: AMSINCKIA MENZIESII, BROMUS DIANDRUS, BROMUS RUBENS, CALANDRINIA CIJAT A, ELEOCHARIS MACROSTACHYA, ERODIUM CICUTARIUM, HORDEUM MURINUM Ssp. LEPORINUM, MALVA PARVIFLORA, SALIX GOODDINGII, SENECIO VULGARIS, VULPIA MYURUS. |

| 2nd     | 06/09/2015  | 01:35 PM   | J. Jones   | 5.29 IN          | N              | 4 MPH         | 85 F        | 40%      |
|         |             |            |            |                  |                |               |             |          |
| Notes:  | WILDLIFE PRESENT: CALIFORNIA GROUND SQUIRREL, NORTHERN MOCKINGBIRD, MOURNING DOVE.
|         | PLANTS PRESENT: AMSINCKIA MENZIESII, ATRIPLEX SERENANA, BASSIA HYSSOPIFOLIA, BROMUS RUBENS, ELEOCHARIS MACROSTACHYA, ERODIUM CICUTARIUM, HIRSCHFELDIA INCANA, SALIX GOODDINGII, SISymbrium Irio. |

| 3rd     | 08/07/2015  | 12:09 PM   | J. Jones, Z. Brisco | 5.33 IN       | N              | 5 MPH         | 93 F        | 31%      |
|         |             |            |            |                  |                |               |             |          |
| Notes:  | CATTLE HAVE GRAZED THIS BASIN WELL.
| WILDLIFE PRESENT: CALIFORNIA GROUND SQUIRREL, COYOTE, MOURNING DOVE.
| PLANTS PRESENT: AMSINCKIA MENZIESII, BROMUS RUBENS, HIRSCHFELDIA INCANA, SALIX GOODDINGII. |

| 4th     | 11/05/2015  | 11:45 AM   | J. Jones, A. Vasquez | 5.33 IN       | NW             | 2 MPH         | 64 F        | 40%      |
|         |             |            |            |                  |                |               |             |          |
| Notes:  | BASIN IS MOSTLY BARE GROUND FROM GRAZING.
| WILDLIFE PRESENT: MOURNING DOVE, RED-TAILED HAWK, SIDE-BLOTCH LIZARD, WHITE-CROWNED SPARROW.
| PLANTS PRESENT: AMSINCKIA MENZIESII, BROMUS DIANDRUS, BROMUS RUBENS, SISymbrium Irio. |

Kern Water Bank Authority

KWB 2015 VEGETATION MONITORING PROGRAM SITE OBSERVATION OMS-1
# KERN WATER BANK 2015 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

<table>
<thead>
<tr>
<th>SURVEY DATE: 03/09/2015</th>
<th>TIME: 10:35 AM</th>
<th>MONITOR(S): J. JONES</th>
<th>RAINFOALL TO DATE: 4.26 IN</th>
<th>WIND DIRECTION: --</th>
<th>WIND VELOCITY: 0 MPH</th>
<th>TEMPERATURE: 69 F</th>
<th>HUMIDITY: 59%</th>
</tr>
</thead>
</table>

**NOTES:** OLD TUMBLEWEED DRIFTS IN DITCH BOTTOM.  
**WILDLIFE PRESENT:** WESTERN MEADOWLARK.  
**PLANTS PRESENT:** AMSINCKIA MENZIESII, BASSIA HYSSOPIFOLIA, CHENOPODIUM ALBUM, ERODIUM CICUTARIUM, HELIANTHUS ANNUUS, HIRSCHFELDIA INCANA, HORDEUM MURINUM SSP. LEPORINUM, LEYMUS TRITICOIDES, MALVA PARVIFLORA, MELILOTUS INDICA, SALIX GOODDINGII, SALSOLA TRAGUS, SCHISMUS ARABICUS, SISYMBRIUM IRIO.

### 2ND QUARTER

<table>
<thead>
<tr>
<th>SURVEY DATE: 06/09/2015</th>
<th>TIME: 01:54 PM</th>
<th>MONITOR(S): J. JONES</th>
<th>RAINFOALL TO DATE: 5.29 IN</th>
<th>WIND DIRECTION: NW</th>
<th>WIND VELOCITY: 6 MPH</th>
<th>TEMPERATURE: 86 F</th>
<th>HUMIDITY: 34%</th>
</tr>
</thead>
</table>

**NOTES:** CATTLE HAVE GRAZED DITCH BOTTOM WELL.  
**WILDLIFE PRESENT:** RED-TAILED HAWK, WESTERN KINGBIRD.  
**PLANTS PRESENT:** ATRIPLEX SERENANA, BASSIA HYSSOPIFOLIA, BROMUS RUBENS, HELIOTROPIUM CURASSAVICUM, HIRSCHFELDIA INCANA, JUNCUS BALTICUS, LEYMUS TRITICOIDES, SALIX GOODDINGII, SALSOLA TRAGUS.

### 3RD QUARTER

<table>
<thead>
<tr>
<th>SURVEY DATE: 08/07/2015</th>
<th>TIME: 12:30 PM</th>
<th>MONITOR(S): J. JONES</th>
<th>RAINFOALL TO DATE: 5.33 IN</th>
<th>WIND DIRECTION: N</th>
<th>WIND VELOCITY: 8 MPH</th>
<th>TEMPERATURE: 93 F</th>
<th>HUMIDITY: 30%</th>
</tr>
</thead>
</table>

**NOTES:** CATTLE HAVE GRAZED MOST OF THE DITCH BOTTOM WELL.  
**WILDLIFE PRESENT:** MOURNING DOVE, RAVEN.  
**PLANTS PRESENT:** ATRIPLEX SERENANA, BASSIA HYSSOPIFOLIA, HELIANTHUS ANNUUS, HELIOTROPIUM CURASSAVICUM, JUNCUS BALTICUS, SALSOLA TRAGUS, SISYMBRIUM IRIO.

### 4TH QUARTER

<table>
<thead>
<tr>
<th>SURVEY DATE: 11/05/2015</th>
<th>TIME: 11:15 AM</th>
<th>MONITOR(S): J. JONES, A. VASQUEZ</th>
<th>RAINFOALL TO DATE: 5.33 IN</th>
<th>WIND DIRECTION: N</th>
<th>WIND VELOCITY: 3 MPH</th>
<th>TEMPERATURE: 68 F</th>
<th>HUMIDITY: 35%</th>
</tr>
</thead>
</table>

**NOTES:** DITCH BOTTOM IS MOSTLY OPEN FROM CATTLE, MOSTLY BARE GROUND.  
**WILDLIFE PRESENT:**  
**PLANTS PRESENT:** ATRIPLEX SERENANA, BASSIA HYSSOPIFOLIA, HELIANTHUS ANNUUS, HELIOTROPIUM CURASSAVICUM, LEYMUS TRITICOIDES, SALIX GOODDINGII, SALSOLA TRAGUS.
### Survey Information and Photographs

<table>
<thead>
<tr>
<th>Quarter</th>
<th>Survey Date</th>
<th>Time</th>
<th>Monitor(s)</th>
<th>Rainfall To Date</th>
<th>Wind Direction</th>
<th>Wind Velocity</th>
<th>Temperature</th>
<th>Humidity</th>
<th>Notes</th>
<th>Wildlife Present</th>
<th>Plants Present</th>
</tr>
</thead>
<tbody>
<tr>
<td>2nd Quarter</td>
<td>06/09/2015</td>
<td>01:44 PM</td>
<td>J. Jones</td>
<td>5.29 IN</td>
<td>N</td>
<td>2 MPH</td>
<td>86 F</td>
<td>39%</td>
<td>Needs to be grazed.</td>
<td>Raven, Velvet Ant, Western Kingbird.</td>
<td>Amsinckia Menziesii, Schismus Arabicus, Sisymbrium Irio.</td>
</tr>
<tr>
<td>4th Quarter</td>
<td>11/05/2015</td>
<td>11:25 AM</td>
<td>J. Jones, A. Vasquez</td>
<td>5.33 IN</td>
<td>N</td>
<td>3 MPH</td>
<td>67 F</td>
<td>34%</td>
<td>Several active Kangaroo rat burrows mostly along burm. Vegetation is relatively tall but area is open and not prohiatory to Kangaroo Rat.</td>
<td>Amsinckia Menziesii, Sisymbrium Irio.</td>
<td></td>
</tr>
</tbody>
</table>
### KERN WATER BANK 2015 VEGETATION MONITORING PROGRAM SITE OBSERVATIONS

#### LOCATION INFORMATION

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

#### SURVEY INFORMATION AND PHOTOGRAPHS

**1ST QUARTER**

<table>
<thead>
<tr>
<th>SURVEY DATE:</th>
<th>03/09/2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>TIME:</td>
<td>11:45 AM</td>
</tr>
<tr>
<td>MONITOR(S):</td>
<td>J. JONES</td>
</tr>
<tr>
<td>RAINFALL TO DATE:</td>
<td>4.26 IN</td>
</tr>
<tr>
<td>WIND DIRECTION:</td>
<td>NW</td>
</tr>
<tr>
<td>WIND VELOCITY:</td>
<td>8 MPH</td>
</tr>
<tr>
<td>TEMPERATURE:</td>
<td>74 F</td>
</tr>
<tr>
<td>HUMIDITY:</td>
<td>53%</td>
</tr>
</tbody>
</table>

**NOTES:** NUMEROUS SMALL RUSSIAN THISTLE PLANTS GROWING IN DITCH BOTTOM.

**WILDLIFE PRESENT:** RAVEN.

**PLANTS PRESENT:** AMSINCKIA MENZIESII, BROMUS DIANDRUS, EREMALCHE PARRYI SSP. PARRYI, ERODIUM CICUTARIUM, HIRSCHFELDIA INCANA, HORDEUM MURINUM SSP. LEPORINUM, LACTUCA SERRIOLA, SENECIA VULGARIS, SISYMBRIUM IRIO.

---

**2ND QUARTER**

<table>
<thead>
<tr>
<th>SURVEY DATE:</th>
<th>06/09/2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>TIME:</td>
<td>01:23 PM</td>
</tr>
<tr>
<td>MONITOR(S):</td>
<td>J. JONES</td>
</tr>
<tr>
<td>RAINFALL TO DATE:</td>
<td>5.29 IN</td>
</tr>
<tr>
<td>WIND DIRECTION:</td>
<td>W</td>
</tr>
<tr>
<td>WIND VELOCITY:</td>
<td>3 MPH</td>
</tr>
<tr>
<td>TEMPERATURE:</td>
<td>86 F</td>
</tr>
<tr>
<td>HUMIDITY:</td>
<td>358%</td>
</tr>
</tbody>
</table>

**NOTES:** SHORT TUMBLEWEED PLANTS ARE DRIED AND DEAD.

**WILDLIFE PRESENT:**

**PLANTS PRESENT:** AMSINCKIA MENZIESII, ATRIPLEX SERENANA, BROMUS RUBENS, CHENOPODIUM ALBUM, HIRSCHFELDIA INCANA, HORDEUM MURINUM SSP. LEPORINUM, MALVA PARVIFLORA, SALSOLA TRAGUS, SCHISMUS ARABICUS, SISYMBRIUM IRIO.

---

**3RD QUARTER**

<table>
<thead>
<tr>
<th>SURVEY DATE:</th>
<th>08/07/2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>TIME:</td>
<td>12:01 PM</td>
</tr>
<tr>
<td>MONITOR(S):</td>
<td>J. JONES</td>
</tr>
<tr>
<td>RAINFALL TO DATE:</td>
<td>5.33 IN</td>
</tr>
<tr>
<td>WIND DIRECTION:</td>
<td>N</td>
</tr>
<tr>
<td>WIND VELOCITY:</td>
<td>6 MPH</td>
</tr>
<tr>
<td>TEMPERATURE:</td>
<td>92 F</td>
</tr>
<tr>
<td>HUMIDITY:</td>
<td>30%</td>
</tr>
</tbody>
</table>

**NOTES:** CANAL IS LARGELY BARE AND SPARSE. MANY DEAD, DRIED, GERMINATED TUMBLEWEED SEEDLINGS IN CANAL BOTTOM.

**WILDLIFE PRESENT:**

**PLANTS PRESENT:** AMSINCKIA MENZIESII, ATRIPLEX SERENANA, BROMUS RUBENS, HELIOTROPIUM CURASSAVICUM, SALSOLA TRAGUS, SISYMBRIUM IRIO.

---

**4TH QUARTER**

<table>
<thead>
<tr>
<th>SURVEY DATE:</th>
<th>11/05/2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>TIME:</td>
<td>12:00 PM</td>
</tr>
<tr>
<td>MONITOR(S):</td>
<td>J. JONES, A. VASQUEZ</td>
</tr>
<tr>
<td>RAINFALL TO DATE:</td>
<td>5.33 IN</td>
</tr>
<tr>
<td>WIND DIRECTION:</td>
<td>E</td>
</tr>
<tr>
<td>WIND VELOCITY:</td>
<td>2 MPH</td>
</tr>
<tr>
<td>TEMPERATURE:</td>
<td>73 F</td>
</tr>
<tr>
<td>HUMIDITY:</td>
<td>33%</td>
</tr>
</tbody>
</table>

**NOTES:** BARE GROUND FROM MOWING.

**WILDLIFE PRESENT:** RAVEN, SIDE-BLOTCHED LIZARD.

**PLANTS PRESENT:** AMSINCKIA MENZIESII, ATRIPLEX SERENANA, BROMUS RUBENS, HELIOTROPIUM CURASSAVICUM, SALSOLA TRAGUS, SISYMBRIUM IRIO.
# KERN WATER BANK 2015 VEGETATION MONITORING PROGRAM SITE OBSERVATIONS

## LOCATION INFORMATION

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

## SURVEY INFORMATION AND PHOTOGRAPHS

### 1ST QUARTER

<table>
<thead>
<tr>
<th>SURVEY DATE: 02/11/2015</th>
<th>TIME: 02:00 PM</th>
<th>MONITOR(S): J. JONES, Z. BRISCO</th>
<th>RAINFALL TO DATE: 4.26 IN</th>
<th>WIND DIRECTION: --</th>
<th>WIND VELOCITY: 0 MPH</th>
<th>TEMPERATURE: 69 F</th>
<th>HUMIDITY: 57%</th>
</tr>
</thead>
<tbody>
<tr>
<td>NORTH</td>
<td>EAST</td>
<td>SOUTH</td>
<td>WEST</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><img src="image1.jpg" alt="Image" /></td>
<td><img src="image2.jpg" alt="Image" /></td>
<td><img src="image3.jpg" alt="Image" /></td>
<td><img src="image4.jpg" alt="Image" /></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**NOTES:**
- WILDLIFE PRESENT: RED-WINGED BLACKBIRD, WESTERN MEADOWLARK.
- PLANTS PRESENT: AMSINCKIA MENZIESII, CALANDRINIA CILIATA, CRASSULA CONNATA, ERODIUM CICUTARIUM, CHISMUS ARABICUS, SINAPIS ALBA, SISYMBRIUM IRIO.

### 2ND QUARTER

<table>
<thead>
<tr>
<th>SURVEY DATE: 06/09/2015</th>
<th>TIME: 01:07 PM</th>
<th>MONITOR(S): J. JONES</th>
<th>RAINFALL TO DATE: 5.29 IN</th>
<th>WIND DIRECTION: --</th>
<th>WIND VELOCITY: 0 MPH</th>
<th>TEMPERATURE: 88 F</th>
<th>HUMIDITY: 33%</th>
</tr>
</thead>
<tbody>
<tr>
<td>NORTH</td>
<td>EAST</td>
<td>SOUTH</td>
<td>WEST</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><img src="image5.jpg" alt="Image" /></td>
<td><img src="image6.jpg" alt="Image" /></td>
<td><img src="image7.jpg" alt="Image" /></td>
<td><img src="image8.jpg" alt="Image" /></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**NOTES:**
- VERY FEW BURROWS. NEEDS TO BE GRAZED.
- WILDLIFE PRESENT:
- PLANTS PRESENT: AMSINCKIA MENZIESII, BROMUS RUBENS, SCHISMUS ARABICUS, SISYMBRIUM IRIO.

### 3RD QUARTER

<table>
<thead>
<tr>
<th>SURVEY DATE: 08/07/2015</th>
<th>TIME: 11:47 AM</th>
<th>MONITOR(S): J. JONES</th>
<th>RAINFALL TO DATE: 5.33 IN</th>
<th>WIND DIRECTION: NW</th>
<th>WIND VELOCITY: 9 MPH</th>
<th>TEMPERATURE: 91 F</th>
<th>HUMIDITY: 30%</th>
</tr>
</thead>
<tbody>
<tr>
<td>NORTH</td>
<td>EAST</td>
<td>SOUTH</td>
<td>WEST</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><img src="image9.jpg" alt="Image" /></td>
<td><img src="image10.jpg" alt="Image" /></td>
<td><img src="image11.jpg" alt="Image" /></td>
<td><img src="image12.jpg" alt="Image" /></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**NOTES:**
- NO TUMBLEWEED ANYWHERE IN SIGHT, DENSE TALL DEAD FIDDLENECK. NEED TO INCREASE CATTLE IN RIVER AREA.
- WILDLIFE PRESENT: RED-TAILED HAWK.
- PLANTS PRESENT: AMSINCKIA MENZIESII, BROMUS RUBENS, SCHISMUS ARABICUS.

### 4TH QUARTER

<table>
<thead>
<tr>
<th>SURVEY DATE: 11/05/2015</th>
<th>TIME: 12:25 PM</th>
<th>MONITOR(S): J. JONES, A. VASQUEZ</th>
<th>RAINFALL TO DATE: 5.33 IN</th>
<th>WIND DIRECTION: NE</th>
<th>WIND VELOCITY: 3 MPH</th>
<th>TEMPERATURE: 71 F</th>
<th>HUMIDITY: 29%</th>
</tr>
</thead>
<tbody>
<tr>
<td>NORTH</td>
<td>EAST</td>
<td>SOUTH</td>
<td>WEST</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><img src="image13.jpg" alt="Image" /></td>
<td><img src="image14.jpg" alt="Image" /></td>
<td><img src="image15.jpg" alt="Image" /></td>
<td><img src="image16.jpg" alt="Image" /></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**NOTES:**
- NUMEROUS ACTIVE KANGAROO RAT BURROWS, DIGS, SEED CACHES. NO TUMBLEWEED PRESENT.
- WILDLIFE PRESENT: RAVEN
- PLANTS PRESENT: AMSINCKIA MENZIESII, BROMUS RUBENS, PROSOPIS GLANDULOSA VAR. TORREYANA, SISYMBRIUM IRIO.
**KERN WATER BANK 2015 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**

SURVEY DATE: 02/11/2015  
TIME: 01:15 PM  
MONITOR(S): J. JONES, Z. BRISCO  
RAINFALL TO DATE: 4.26 IN  
WIND DIRECTION: --  
WIND VELOCITY: 0 MPH  
TEMPERATURE: 69 F  
HUMIDITY: 57%

NOTES: DENSE GROWTH FROM ABUNDANT RAIN.  
WILDLIFE PRESENT: RAVEN, WESTERN MEADOWLARK.  
PLANTS PRESENT: AMSINCKIA MENZIESII, ATRIPLEX POLYCARPA, ERODIUM CICUTARIUM, HORDEUM MURINUM SSP. LEPORINUM, LASTHENIA CALIFORNICA, LEPIDIUM NITIDUM, PROSOPIS GLANDULOSA VAR. TORREYANA.

**2ND QUARTER**

SURVEY DATE: 06/09/2015  
TIME: 12:25 PM  
MONITOR(S): J. JONES  
RAINFALL TO DATE: 5.29 IN  
WIND DIRECTION: SW  
WIND VELOCITY: 8 MPH  
TEMPERATURE: 87 F  
HUMIDITY: 30%

NOTES: SHRUBS VERY DRY AND APPEARS STRESSED. VERY FEW SMALL MAMMAL BURROWS.  
WILDLIFE PRESENT:  
PLANTS PRESENT: AMSINCKIA MENZIESII, BROMUS RUBENS, LASTHENIA CALIFORNICA, LEPIDIUM NITIDUM, PROSOPIS GLANDULOSA VAR. TORREYANA, SCHISMUS ARABICUS, SISYMBRIUM IRIO.

**3RD QUARTER**

SURVEY DATE: 08/07/2015  
TIME: 11:20 AM  
MONITOR(S): J. JONES  
RAINFALL TO DATE: 5.33 IN  
WIND DIRECTION: N  
WIND VELOCITY: 9 MPH  
TEMPERATURE: 92 F  
HUMIDITY: 26%

NOTES: ALTHOUGH GROUND COVER IS MODERATELY DENSE, THERE ARE SEVERAL ACTIVE KANGAROO RAT BURROWS AND RUNWAYS.  
WILDLIFE PRESENT: Mourning Dove.  
PLANTS PRESENT: AMSINCKIA MENZIESII, ATRIPLEX POLYCARPA, BROMUS RUBENS, PROSOPIS GLANDULOSA VAR. TORREYANA, SCHISMUS ARABICUS, SISYMBRIUM IRIO, VULPIA MYURODS.

**4TH QUARTER**

SURVEY DATE: 11/04/2015  
TIME: 12:45 PM  
MONITOR(S): J. JONES  
RAINFALL TO DATE: 5.33 IN  
WIND DIRECTION: W  
WIND VELOCITY: 6 MPH  
TEMPERATURE: 67 F  
HUMIDITY: 34%

NOTES: SEVERAL ACTIVE KANGAROO RAT BURROWS.  
WILDLIFE PRESENT: Mourning Dove, White-crowned Sparrow.  
PLANTS PRESENT: AMSINCKIA MENZIESII, ATRIPLEX POLYCARPA, BROMUS RUBENS, PROSOPIS GLANDULOSA VAR. TORREYANA, SISYMBRIUM IRIO.
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

SURVEY DATE: 02/11/2015
TIME: 12:05 PM
MONITOR(S): J. JONES, Z. BRISCO
RAINFALL TO DATE: 4.26 IN
WIND DIRECTION: --
WIND VELOCITY: 0 MPH
TEMPERATURE: 68 F
HUMIDITY: 54%

NOTES: THICK & DENSE GROWTH. 100 HEAD OF CATTLE TURNED OUT TODAY.
WILDLIFE PRESENT: WESTERN MEADOWLARK.
PLANTS PRESENT: AMSINCKIA MENZIESII, CALANDRINIA CILIATA, ERODIUM CICUTARIUM, LASTHENIA CALIFORNICA, SCHISMUS ARABICUS, SISYMBRIUM IRIO.

NORTH EAST SOUTH WEST

2ND QUARTER

SURVEY DATE: 06/09/2015
TIME: 12:48 PM
MONITOR(S): J. JONES
RAINFALL TO DATE: 5.29 IN
WIND DIRECTION: SW
WIND VELOCITY: 10 MPH
TEMPERATURE: 86 F
HUMIDITY: 37%

NOTES: VERY FEW BURROWS. NEEDS TO BE GRAZED.
WILDLIFE PRESENT: AMERICAN CROW, LOGGERHEAD SHRIKE.
PLANTS PRESENT: AMSINCKIA MENZIESII, BROMUS DIANDRUS, SCHISMUS ARABICUS, SISYMBRIUM IRIO.

NORTH EAST SOUTH WEST

3RD QUARTER

SURVEY DATE: 08/07/2015
TIME: 10:45 AM
MONITOR(S): J. JONES
RAINFALL TO DATE: 5.33 IN
WIND DIRECTION: W
WIND VELOCITY: 2 MPH
TEMPERATURE: 90 F
HUMIDITY: 25%

NOTES: DENSE, DRY MATTER COVER PRESENT. NEED TO BE GRAZED AS SOON AS POSSIBLE WHEN OIL FACILITIES ARE FULLY PROTECTED.
WILDLIFE PRESENT: LOGGERHEAD SHRIKE, MOURNING DOVE.
PLANTS PRESENT: AMSINCKIA MENZIESII, BROMUS RUBENS, ERODIUM CICUTARIUM, HIRSHFELDIA INCANA, SCHISMUS ARABICUS, SISYMBRIUM IRIO.

NORTH EAST SOUTH WEST

4TH QUARTER

SURVEY DATE: 11/04/2015
TIME: 01:25 PM
MONITOR(S): J. JONES
RAINFALL TO DATE: 5.33 IN
WIND DIRECTION: NW
WIND VELOCITY: 9 MPH
TEMPERATURE: 69 F
HUMIDITY: 30%

NOTES: DRIED VEGETATION IS DENSE, NEED TO GRAZE THIS AREA.
WILDLIFE PRESENT: HOUSE FINCH, RAVEN.
PLANTS PRESENT: AMSINCKIA MENZIESII, BROMUS RUBENS, DATURA WRIGHTII, SISYMBRIUM IRIO.
KERN WATER BANK 2015 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
SURVEY DATE: 03/09/2015
TIME: 11:10 AM
MONITOR(S): J. JONES
RAINFALL TO DATE: 4.26 IN
WIND DIRECTION: NW
WIND VELOCITY: 3 MPH
TEMPERATURE: 72 F
HUMIDITY: 53%

NOTES:
WILDLIFE PRESENT: BREWERS BLACKBIRD, KILLDEER, WESTERN MEADOWLARK.
PLANTS PRESENT: ACROPTILON REPENS, AMSINCKIA MENZIESII, CENTAUREA MELITENSIS, CHENNOPODIUM ALBUM, ERODUIUM CICUTARIUM, HIRSCHFELDIA INCANA, HORDEUM MURINUM SSR. LEPORINUM, LACTUCA SERRIOLA, MALVA PARVIFLORA, PHYLA NODIFLORA, Polygonum areastrum, Salix gooddingii, Sisybrium irio.

2ND QUARTER
SURVEY DATE: 06/09/2015
TIME: 02:07 PM
MONITOR(S): J. JONES
RAINFALL TO DATE: 5.29 IN
WIND DIRECTION: W
WIND VELOCITY: 6 MPH
TEMPERATURE: 85 F
HUMIDITY: 36%

NOTES:
WILDLIFE PRESENT: NORTHERN MOCKINGBIRD.
PLANTS PRESENT: ACROPTILON REPENS, AMSINCKIA MENZIESII, ATRIPLEX SERENANA, LYTTHRM CALIFORNICUM, PHYLA NODIFLORA, SALIX GOODDINGII, SALSOLA TRAGUS, SISYMBRIUM IRIO.

3RD QUARTER
SURVEY DATE: 08/07/2015
TIME: 12:37 PM
MONITOR(S): J. JONES
RAINFALL TO DATE: 5.33 IN
WIND DIRECTION: NW
WIND VELOCITY: 10 MPH
TEMPERATURE: 93 F
HUMIDITY: 26%

NOTES:
ACTIVE KANGAROO RAT BURROWS PRESENT. SCATTERED SMALL ~6" TALL DRYING TUMBLEWEED IN POND BASIN. CATTLE ARE GRAZING IN BASIN AND ADJACENT AREAS.
WILDLIFE PRESENT:
PLANTS PRESENT: ACROPTILON REPENS, ATRIPLEX SERENANA, BASSIA HYSSOPIHOLIA, DISTCHLIS SPICATA, PHYLA NODIFLORA, SALIX GOODDINGII, SALSOLA TRAGUS, SISYMBRIUM IRIO.

4TH QUARTER
SURVEY DATE: 11/05/2015
TIME: 10:55 AM
MONITOR(S): J. JONES, A. VASQUEZ
RAINFALL TO DATE: 5.33 IN
WIND DIRECTION: 0 MPH
WIND VELOCITY: 0 MPH
TEMPERATURE: 65 F
HUMIDITY: 40%

NOTES:
MOSTLY BARE GROUND. CATTLE CURRENTLY GRAZING.
WILDLIFE PRESENT: MOURNING DOVE.
PLANTS PRESENT: ATRIPLEX SERENANA, PHYLA NODIFLORA, RUMEX CRISPUS, SALIX GOODDINGII, SALSOLA TRAGUS, SISYMBRIUM IRIO.