

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
south valley biology consulting llc

June 24, 2016

2015 VEGETATION MONIROTING PROGRAM OBSERVATION
MONITORING SITES AND LIVESTOCK GRAZING SUMMARY
for the
KERN WATER BANK

Submitted to:

Kern Water Bank Authority
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June 24, 2016

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 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.

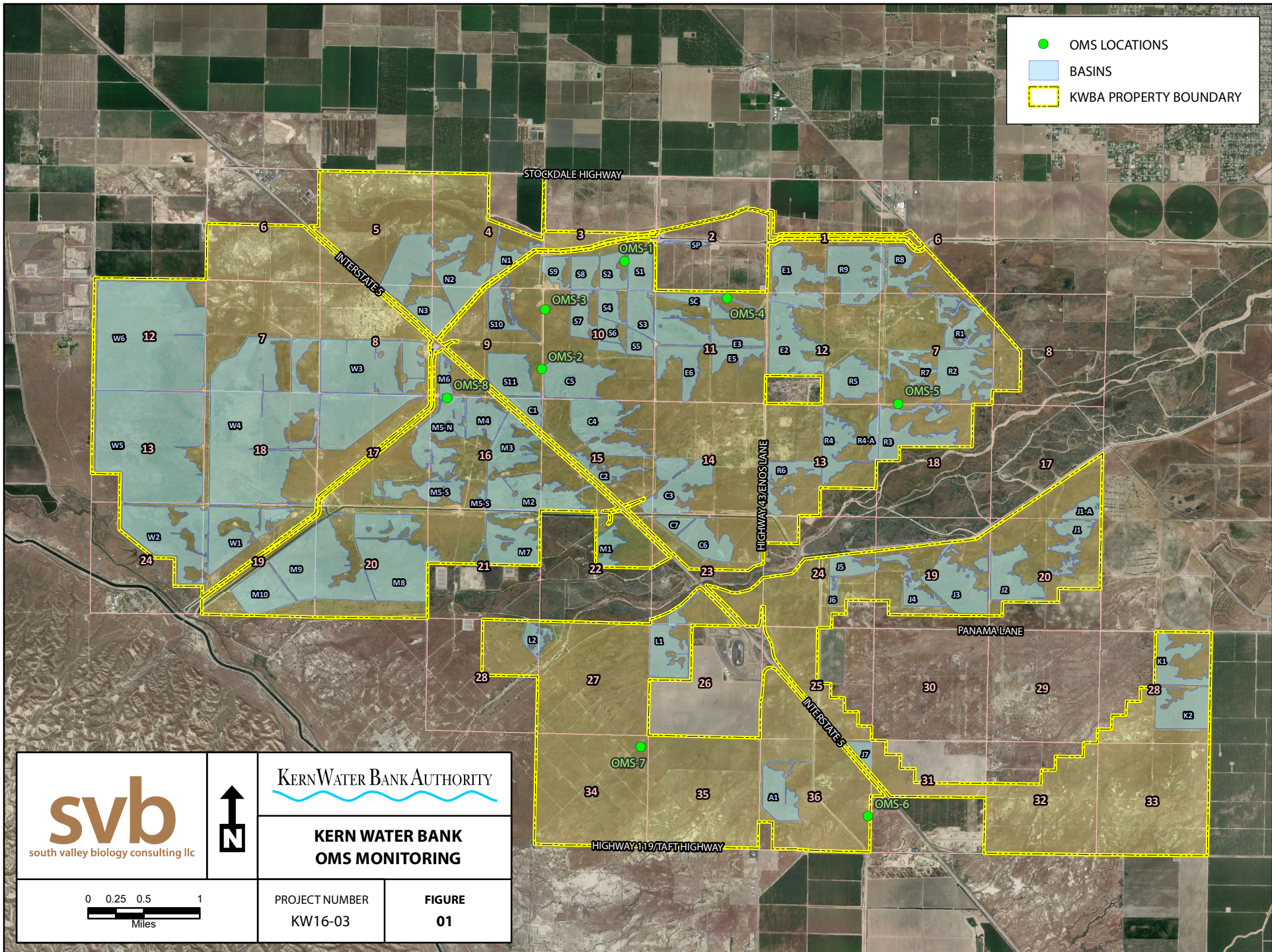
It was reported in 2014 that there was almost no observable primary production at almost all of the OMS. Photographs 1 – 4 help to illustrate the contrasting conditions observed in 2015 from what was seen in 2014. The 2015 rain year got started with modest rainfall in October and very little in November, 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 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.

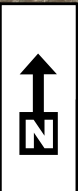
By late February, herbaceous growth had progressed substantially and the decision was made to turn cattle out into the areas where growth appeared to be most rapidly progressing. Cattle were introduced back into the Strand, West, and River areas in late February in an effort to keep the abundant vegetation 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.

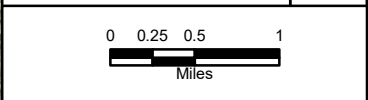


- OMS LOCATIONS
- BASINS
- KWBA PROPERTY BOUNDARY



KERN WATER BANK AUTHORITY

**KERN WATER BANK
OMS MONITORING**



PROJECT NUMBER
KW16-03

FIGURE
01

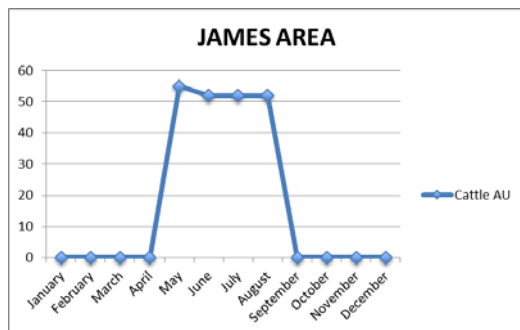
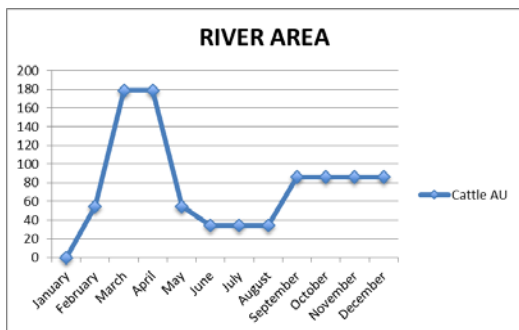
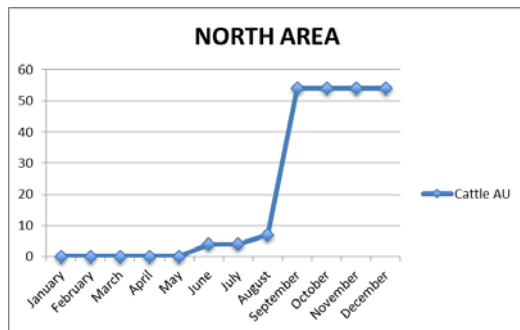
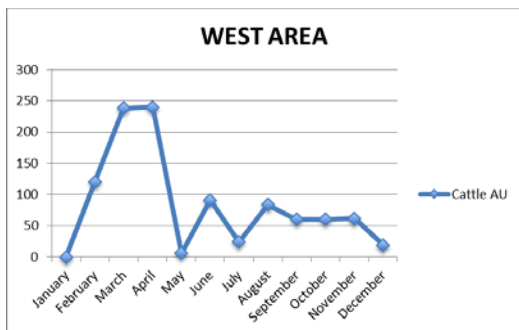
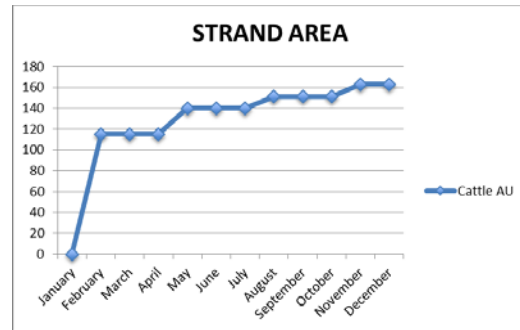
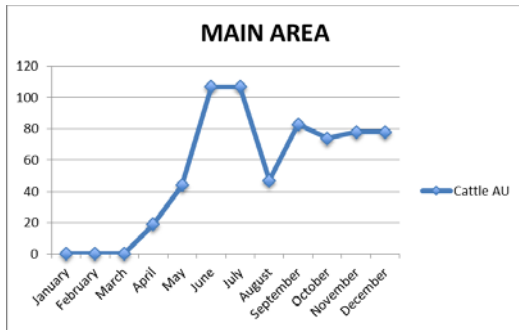


Figure 2. Charts showing the number of cattle, expressed as an Animal Unit (AU) which is one adult cow and one calf, that were present in each area by month in 2015.



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

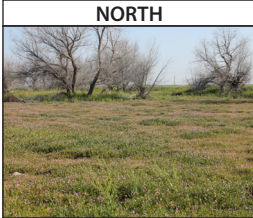


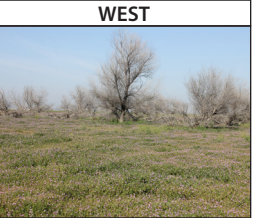
Kern Water Bank 2015 Observation Monitoring Site Observation Program Observations

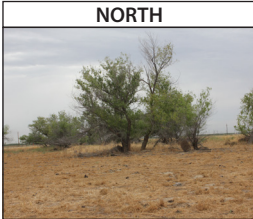


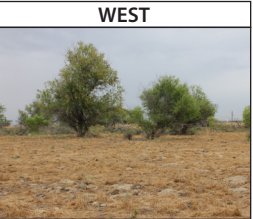
KERN WATER BANK 2015 VEGETATION MONITORING PROGRAM SITE OBSERVATIONS

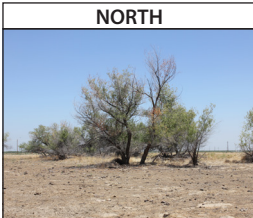
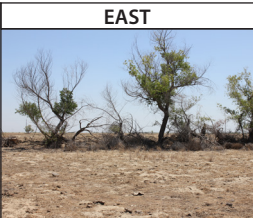
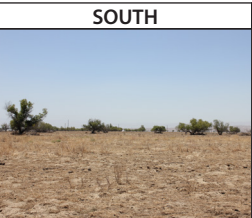
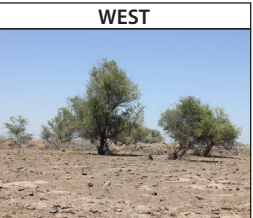
LOCATION INFORMATION

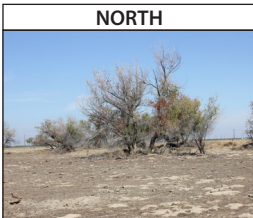
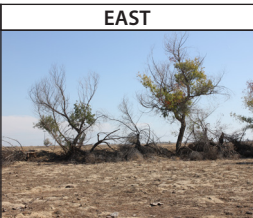

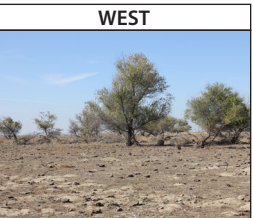
LOCATION: OMS-1
SECTION: 3
TOWNSHIP/RANGE: 30S/25E
COORDINATES (CA5-NAD83): 6181490, 2313744
NUMBER OF ACRES: 40
VEGETATION TYPE: EMERGENT WETLAND SPECIES PRESENT
SITE TYPE: POND BASIN/POND LITTORAL ZONES

SURVEY INFORMATION AND PHOTOGRAPHS

1ST QUARTER	SURVEY DATE: 03/09/2015 TIME: 10:00 AM MONITOR(S): J. JONES RAINFALL TO DATE: 4.26 IN WIND DIRECTION: -- WIND VELOCITY: 0 MPH TEMPERATURE: 63 F HUMIDITY: 58%	NORTH	EAST	SOUTH	WEST
	NOTES: WILDLIFE PRESENT: COTTONTAIL, MEADOWLARK, MOURNING DOVE, RAVEN, SCRUB JAY, WHITE-CROWNED SPARROW. PLANTS PRESENT: AMSINCKIA MENZIESII, BROMUS DIANDRUS, BROMUS RUBENS, CALANDRINIA CILIATA, ELEOCHARIS MACROSTACHYA, ERODIUM CICUTARIUM, HORDEUM MURINUM SSP. LEPORINUM, MALVA PARVIFLORA, SALIX GOODDINGII, SENECIO VULGARIS, VULPIA MYUROS.				

2ND QUARTER	SURVEY DATE: 06/09/2015 TIME: 01:35 PM MONITOR(S): J. JONES RAINFALL TO DATE: 5.29 IN WIND DIRECTION: N WIND VELOCITY: 4 MPH TEMPERATURE: 85 F HUMIDITY: 40%	NORTH	EAST	SOUTH	WEST
	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 QUARTER	SURVEY DATE: 08/07/2015 TIME: 12:09 PM MONITOR(S): J. JONES, Z. BRISCO RAINFALL TO DATE: 5.33 IN WIND DIRECTION: N WIND VELOCITY: 5 MPH TEMPERATURE: 93 F HUMIDITY: 31%	NORTH	EAST	SOUTH	WEST
	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.				


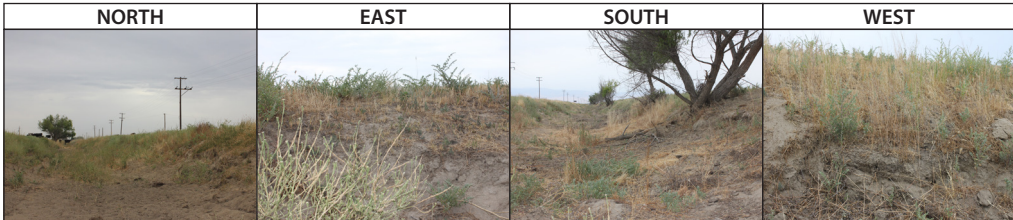
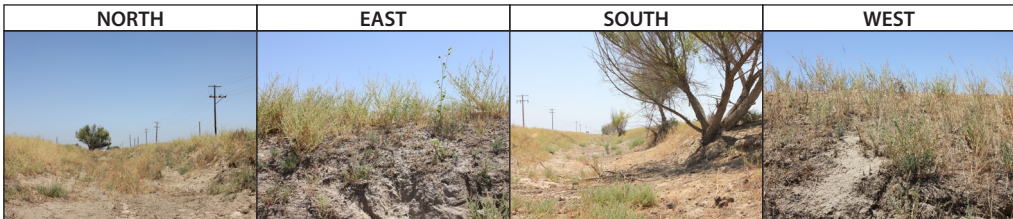
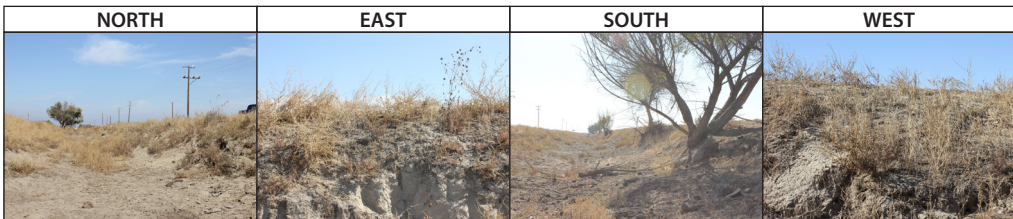
4TH QUARTER	SURVEY DATE: 11/05/2015 TIME: 11:45 AM MONITOR(S): J. JONES, A. VASQUEZ RAINFALL TO DATE: 5.33 IN WIND DIRECTION: NW WIND VELOCITY: 2 MPH TEMPERATURE: 64 F HUMIDITY: 40%	NORTH	EAST	SOUTH	WEST
	NOTES: BASIN IS MOSTLY BARE GROUND FROM GRAZING. WILDLIFE PRESENT: MOURNING DOVE, RED-TAILED HAWK, SIDE-BLOTCH LIZARD, WHITE-CROWN SPARROW. PLANTS PRESENT: AMSINCKIA MENZIESII, BROMUS DIANDRUS, BROMUS RUBENS, SISYMBRIUM IRIO.				

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

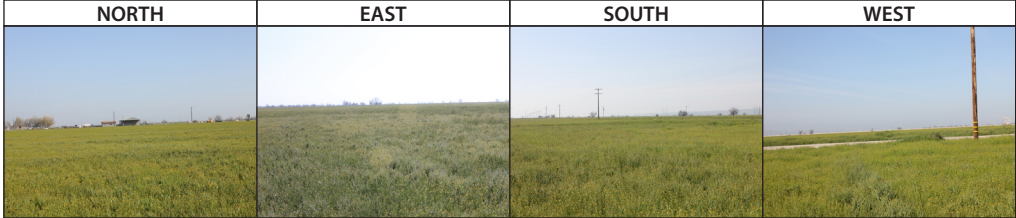
1ST QUARTER	<p> SURVEY DATE: 03/09/2015 TIME: 10:35 AM MONITOR(S): J. JONES RAINFALL TO DATE: 4.26 IN WIND DIRECTION: -- WIND VELOCITY: 0 MPH TEMPERATURE: 69 F HUMIDITY: 59% </p> <p> NOTES: OLD TUMBLEWEED DRIFTS IN DITCH BOTTOM. WILDLIFE PRESENT: WESTERN MEADOWLARK. PLANTS PRESENT: AMSINCKIA MENZIESII, BASSIA HYSSOPIFOLIA, CHENOPODIUM ALBUM, ERODIUM CICUTARIUM, HELIANTHUS ANNUUS, HIRSCHFELDIA INCANA, HORDEUM MURINUM SSP. LEPORINUM, LEYMUS TRITICOIDES, MALVA PARVIFLORA, MELILOTUS INDICA, SALIX GOODINGII, SALSOLA TRAGUS, SCHISMUS ARABICUS, SISYMBRIUM IRIO. </p>	NORTH	EAST	SOUTH	WEST	
		2ND QUARTER	<p> SURVEY DATE: 06/09/2015 TIME: 01:54 PM MONITOR(S): J. JONES RAINFALL TO DATE: 5.29 IN WIND DIRECTION: NW WIND VELOCITY: 6 MPH TEMPERATURE: 86 F HUMIDITY: 34% </p> <p> 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 GOODINGII, SALSOLA TRAGUS. </p>	NORTH	EAST	SOUTH
	3RD QUARTER		<p> SURVEY DATE: 08/07/2015 TIME: 12:30 PM MONITOR(S): J. JONES RAINFALL TO DATE: 5.33 IN WIND DIRECTION: N WIND VELOCITY: 8 MPH TEMPERATURE: 93 F HUMIDITY: 30% </p> <p> 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. </p>	NORTH	EAST	SOUTH
		4TH QUARTER	<p> SURVEY DATE: 11/05/2015 TIME: 11:15 AM MONITOR(S): J. JONES, A. VASQUEZ RAINFALL TO DATE: 5.33 IN WIND DIRECTION: N WIND VELOCITY: 3 MPH TEMPERATURE: 68 F HUMIDITY: 35% </p> <p> 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 GOODINGII, SALSOLA TRAGUS. </p>	NORTH	EAST	SOUTH
						


KERN WATER BANK 2015 VEGETATION MONITORING PROGRAM SITE OBSERVATIONS


LOCATION INFORMATION

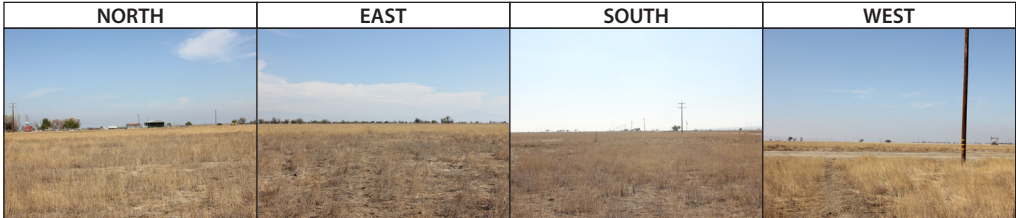
LOCATION: OMS-3
SECTION: 10
TOWNSHIP/RANGE: 30S/25E
COORDINATES (CA5-NAD83): 6177656, 2311449
NUMBER OF ACRES: 80
VEGETATION TYPE: MOSTLY DOMINATED BY ANNUAL GRASSES AND WEEDS/DOMINATED BY RUSSIAN THISTLE AND/OR PRICKLY LETTUCE
SITE TYPE: UPLAND-OLD FARM FIELD

SURVEY INFORMATION AND PHOTOGRAPHS

1ST QUARTER	<p> SURVEY DATE: 03/09/2015 TIME: 10:20 AM MONITOR(S): J. JONES RAINFALL TO DATE: 4.26 IN WIND DIRECTION: -- WIND VELOCITY: 0 MPH TEMPERATURE: 66 F HUMIDITY: 58% </p> <p> NOTES: NUMEROUS RED-WINGED BLACKBIRDS DEFENDING TERRITORIES. WILDLIFE PRESENT: RED-WINGED BLACKBIRDS, WESTERN MEADOWLARK. PLANTS PRESENT: AMSINCKIA MENZIESII, ERODIUM CICUTARIUM, HORDEUM MURINUM SSP. LEPORINUM, LASTHENIA CALIFORNICA, SCHISMUS ARABICUS, SISYMBRIUM IRIIO. </p>	NORTH	EAST	SOUTH	WEST
					

2ND QUARTER	<p> SURVEY DATE: 06/09/2015 TIME: 01:44 PM MONITOR(S): J. JONES RAINFALL TO DATE: 5.29 IN WIND DIRECTION: N WIND VELOCITY: 2 MPH TEMPERATURE: 86 F HUMIDITY: 39% </p> <p> NOTES: NEEDS TO BE GRAZED. WILDLIFE PRESENT: RAVEN, VELVET ANT, WESTERN KINGBIRD. PLANTS PRESENT: AMSINCKIA MENZIESII, SCHISMUS ARABICUS, SISYMBRIUM IRIIO. </p>	NORTH	EAST	SOUTH	WEST
					

3RD QUARTER	<p> SURVEY DATE: 08/07/2015 TIME: 12:24 PM MONITOR(S): J. JONES RAINFALL TO DATE: 5.33 IN WIND DIRECTION: N WIND VELOCITY: 6 MPH TEMPERATURE: 91 F HUMIDITY: 31% </p> <p> NOTES: MODERATELY DENSE STANDS OF LONDON ROCKET AND FIDDLENECK. CATTLE AREN'T SPENDING MUCH TIME HERE YET. JSUT TRAILS THROUGH THE AREA. WILDLIFE PRESENT: PLANTS PRESENT: AMSINCKIA MENZIESII, BROMUS RUBENS, HORDEUM MURINUM SSP. LEPORINUM, SCHISMUS ARABICUS, SISYMBRIUM IRIIO. </p>	NORTH	EAST	SOUTH	WEST
					

4TH QUARTER	<p> SURVEY DATE: 11/05/2015 TIME: 11:25 AM MONITOR(S): J. JONES, A. VASQUEZ RAINFALL TO DATE: 5.33 IN WIND DIRECTION: N WIND VELOCITY: 3 MPH TEMPERATURE: 67 F HUMIDITY: 34% </p> <p> NOTES: SEVERAL ACTIVE KANGAROO RAT BURROWS MOSTLY ALONG BURM. VEGETATION IS RELATIVELY TALL BUT AREA IS OPEN AND NOT PROHIATORY TO KANGAROO RAT. WILDLIFE PRESENT: PLANTS PRESENT: AMSINCKIA MENZIESII, SISYMBRIUM IRIIO. </p>	NORTH	EAST	SOUTH	WEST
					

KERN WATER BANK 2015 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

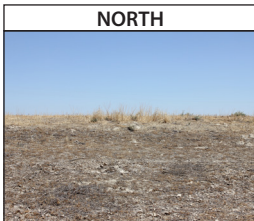



SURVEY INFORMATION AND PHOTOGRAPHS

1ST QUARTER	SURVEY DATE: 03/09/2015 TIME: 11:45 AM MONITOR(S): J. JONES RAINFALL TO DATE: 4.26 IN WIND DIRECTION: NW WIND VELOCITY: 8 MPH TEMPERATURE: 74 F HUMIDITY: 53%	NORTH	EAST	SOUTH	WEST
					

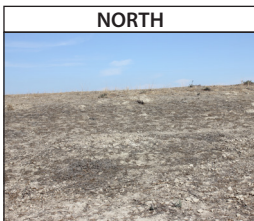



NOTES: NUMEROUS SMALL RUSSIAN THISTLE PLANTS GROWING IN DITCH BOTTOM.
 WILDLIFE PRESENT: RAVEN.
 PLANTS PRESENT: AMSINCKIA MENZIESII, BROMUS DIANDRUS, EREMALCHE PARRYI SSP. PARRYI, ERODIUM CICUTARIUM, HIRSCHFELDIA INCANA, HORDEUM MURINUM SSP. LEPORINUM, LACTUCA SERRIOLA, SENECEIA VULGARIS, SISYMBRIUM IRIO.

2ND QUARTER	SURVEY DATE: 06/09/2015 TIME: 01:23 PM MONITOR(S): J. JONES RAINFALL TO DATE: 5.29 IN WIND DIRECTION: W WIND VELOCITY: 3 MPH TEMPERATURE: 86 F HUMIDITY: 35.8%	NORTH	EAST	SOUTH	WEST
					

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	SURVEY DATE: 08/07/2015 TIME: 12:01 PM MONITOR(S): J. JONES RAINFALL TO DATE: 5.33 IN WIND DIRECTION: N WIND VELOCITY: 6 MPH TEMPERATURE: 92 F HUMIDITY: 30%	NORTH	EAST	SOUTH	WEST
					

NOTES: CANAL IS LARGELY BARE AND SPARSE. MANY DEAD, DRIED, GERMINATED TUMBLEWEED SEEDLINGS IN CANAL BOTOTM.
 WILDLIFE PRESENT:
 PLANTS PRESENT: AMSINCKIA MENZIESII, ATRIPLEX SERENANA, BROMUS RUBENS, HELIOTROPIUM CURASSAVICUM, SALSOLA TRAGUS, SISYMBRIUM IRIO.

4TH QUARTER	SURVEY DATE: 11/05/2015 TIME: 12:00 PM MONITOR(S): J. JONES, A. VASQUEZ RAINFALL TO DATE: 5.33 IN WIND DIRECTION: E WIND VELOCITY: 2 MPH TEMPERATURE: 73 F HUMIDITY: 33%	NORTH	EAST	SOUTH	WEST
					

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

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	<p> SURVEY DATE: 02/11/2015 TIME: 02:00 PM MONITOR(S): J. JONES, Z. BRISCO RAINFALL TO DATE: 4.26 IN WIND DIRECTION: -- WIND VELOCITY: 0 MPH TEMPERATURE: 69 F HUMIDITY: 57% </p> <p> NOTES: WILDLIFE PRESENT: RED-WINGED BLACKBIRD, WESTERN MEADOWLARK. PLANTS PRESENT: AMSINCKIA MENZIESII, CALANDRINIA CILIATA, CRASSULA CONNATA, ERODIUM CICUTARIUM, CHISMUS ARABICUS, SINAPIS ALBA, SISYMBRIUM IRRO. </p>	NORTH	EAST	SOUTH	WEST

2ND QUARTER	<p> SURVEY DATE: 06/09/2015 TIME: 01:07 PM MONITOR(S): J. JONES RAINFALL TO DATE: 5.29 IN WIND DIRECTION: -- WIND VELOCITY: 0 MPH TEMPERATURE: 88 F HUMIDITY: 33% </p> <p> NOTES: VERY FEW BURROWS. NEEDS TO BE GRAZED. WILDLIFE PRESENT: PLANTS PRESENT: AMSINCKIA MENZIESII, BROMUS RUBENS, SCHISMUS ARABICUS, SISYMBRIUM IRIO. </p>	NORTH	EAST	SOUTH	WEST

3RD QUARTER	<p> SURVEY DATE: 08/07/2015 TIME: 11:47 AM MONITOR(S): J. JONES RAINFALL TO DATE: 5.33 IN WIND DIRECTION: NW WIND VELOCITY: 9 MPH TEMPERATURE: 91 F HUMIDITY: 30% </p> <p> 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. </p>	NORTH	EAST	SOUTH	WEST

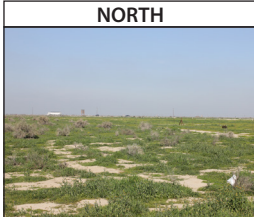



4TH QUARTER	<p> SURVEY DATE: 11/05/2015 TIME: 12:25 PM MONITOR(S): J. JONES, A. VASQUEZ RAINFALL TO DATE: 5.33 IN WIND DIRECTION: NE WIND VELOCITY: 3 MPH TEMPERATURE: 71 F HUMIDITY: 29% </p> <p> NOTES: NUMEROUS ACTIVE KANGAROO RAT BURROWS, DIGS, SEED CACHES. NO TUMBLEWEED PRESENT. WILDLIFE PRESENT: RAVEN PLANTS PRESENT: AMSINCKIA MENZIESII, BROMUS RUBENS, PROSOPIS GLANDULOSA VAR. TORREYANA, SISYMBRIUM IRIO. </p>	NORTH	EAST	SOUTH	WEST

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

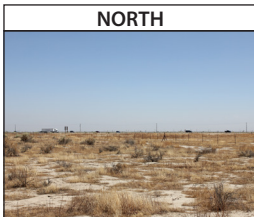
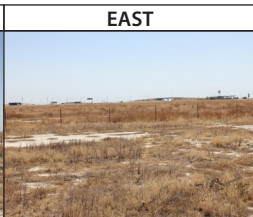

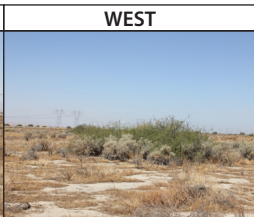
SURVEY INFORMATION AND PHOTOGRAPHS

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%	NORTH	EAST	SOUTH	WEST
					





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%	NORTH	EAST	SOUTH	WEST
					

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%	NORTH	EAST	SOUTH	WEST
					

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 MYUROS.

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%	NORTH	EAST	SOUTH	WEST
					

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.

KERN WATER BANK 2015 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	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%	NORTH	EAST	SOUTH	WEST
	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.				

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

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%	NORTH	EAST	SOUTH	WEST
	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.				


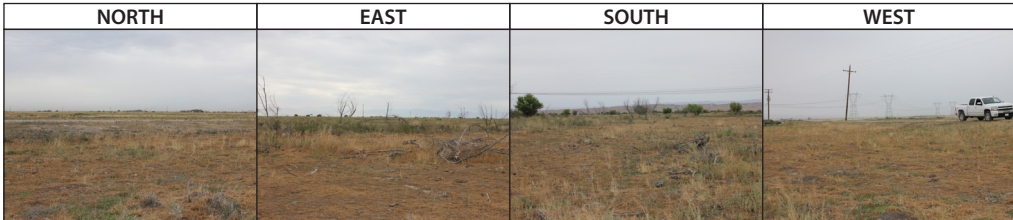
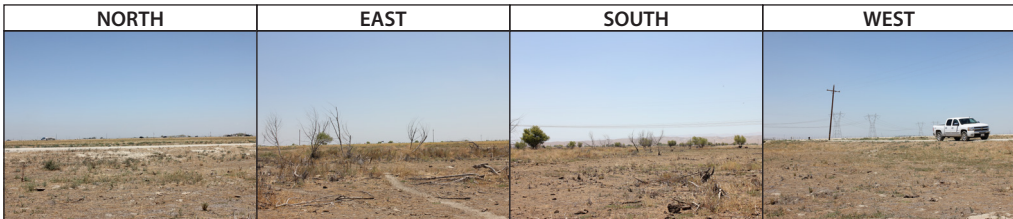
4TH QUARTER	SURVEY DATE: 11/04/2015 TIME: 01:25 PM MONITOR(S): J. JONES RAINFALL TO DATE: 5.33 IN WIND DIRECTION: NW WIND VELOCITY: 9 MPH TEMPERATURE: 69 F HUMIDITY: 30%	NORTH	EAST	SOUTH	WEST
	NOTES: DRIED VEGETATION IS DENSE, NEED TO GRAZE THIS AREA. WILDLIFE PRESENT: HOUSE FINCH, RAVEN. PLANTS PRESENT: 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	<p> 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% </p> <p> NOTES: WILDLIFE PRESENT: BREWERS BLACKBIRD, KILLDEER, WESTERN MEADOWLARK. PLANTS PRESENT: ACROPTILON REPENS, AMSIINCKIA MENZIESII, CENTAUREA MELITENSIS, CHENNOPodium ALBUM, ERODUIM CICUTARIUM, HIRSCHFELDIA INCANA, HORDEUM MURINUM SSR. LEPORINUM, LACTUCA SERRIOLA, MALVA PARVIFLORA, PHYL A NODIFLORA, POLYGONUM AREASTRUM, SALIX GOODDINGII, SISYMBRIUM IRIO. </p>	NORTH	EAST	SOUTH	WEST
					
2ND QUARTER	<p> 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% </p> <p> NOTES: WILDLIFE PRESENT: NORTHERN MOCKINGBIRD. PLANTS PRESENT: ACROPTILON REPENS, AMSINCKIA MENZIESII, ATRIPLEX SERENANA, LYTHRUM CALIFORNICUM, PHYL A NODIFLORA, SALIX GOODDINGII, SALSOLA TRAGUS, SISYMBRIUM IRIO. </p>	NORTH	EAST	SOUTH	WEST
					
3RD QUARTER	<p> 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% </p> <p> NOTES: ACTIVE KANGAROO RAT BURROWS PRESENT. SCATTERED SMALL ~6" TALL DRYING TUMBLEWEED IN POND BASIN. CATTLE ARE GARZING IN BASIN AND ADJACENT AREAS. WILDLIFE PRESENT: PLANTS PRESENT: ACROPTILON REPENS, ATRIPLEX SERENANA, BASSIA HYSSOPIHOLIA, DISTCHLIS SPICATA, PHYL A NODIFLORA, SALIX GOODDINGII, SALSOLA TRAGUS, SISYMBRIUM IRIO. </p>	NORTH	EAST	SOUTH	WEST
					
4TH QUARTER	<p> SURVEY DATE: 11/05/2015 TIME: 10:55 AM MONITOR(S): J. JONES, A. VASQUEZ RAINFALL TO DATE: 5.33 IN WIND DIRECTION: -- WIND VELOCITY: 0 MPH TEMPERATURE: 65 F HUMIDITY: 40% </p> <p> NOTES: MOSTLY BARE GROUND. CATTLE CURRENTLY GRAZING. WILDLIFE PRESENT: MOURNING DOVE. PLANTS PRESENT: ATRIPLEX SERENANA, PHYL A NODIFLORA, RUMEX CRISPUS, SALIX GOODDINGII, SALSOLA TRAGUS, SISYMBRIUM IRIO. </p>	NORTH	EAST	SOUTH	WEST
	