

CALIFORNIA HIGH-SPEED TRAIN

Project Environmental Impact Report /
Environmental Impact Statement

Fresno to Bakersfield

Evaluation of Wetland Condition Using the California Rapid Assessment Method (CRAM)

April 2013



**Evaluation of Wetland Condition Using
the California Rapid Assessment
Method (CRAM)**

Prepared by:

URS/HMM/Arup Joint Venture

April 2013

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Acronyms

AA	assessment area
Authority	California High-Speed Rail Authority
BNSF	Burlington Northern & Santa Fe Railway
CRAM	California Rapid Assessment Method
EIR	environmental impact report
EIS	environmental impact statement
EPA	U.S. Environmental Protection Agency
FRA	Federal Railroad Administration
HMF	heavy maintenance facility
HST	high-speed train
HUC	hydrologic unit code
LEDPA	Least Environmentally Damaging Practicable Alternative
MOU	memorandum of understanding
NAVD 88	North American Vertical Datum of 1988
NEPA	National Environmental Policy Act
RTP	Regional Transportation Plan
SR	State Route
USACE	U.S. Army Corps of Engineers

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Section 1.0

Introduction

1.0 Introduction

The *NEPA/404/408 Integration Process Memorandum of Understanding* between the U.S. Environmental Protection Agency (EPA), U.S. Army Corps of Engineers (USACE), Federal Railroad Administration (FRA), and California High-Speed Rail Authority (Authority), dated November 2010 (referred to as the MOU), outlines the requirements for Checkpoint C: Preliminary LEDPA Determination for the California High-Speed Trail (HST) project. One of the steps in identifying the Least Environmentally Damaging Practicable Alternative (LEDPA) is to determine the functions and services of the aquatic resources within the different project alternatives. In accordance with the MOU and discussions with the project's technical work group—composed of members from the regulatory agencies, FRA, Authority, and the regional consultants—these determinations will be made by conducting a “detailed (rapid assessment or better) assessment of the functions and services of special aquatic sites and other waters of the U.S.” (EPA et al. 2010).

The California Rapid Assessment Method (CRAM) provides the tool for assessing the condition of aquatic resources (CWMW 2012). CRAM is the methodology that is being used across all HST sections to provide a uniform approach for assessing the functions and services (health) of wetlands and other aquatic features, and it is consistent with the USACE and EPA Mitigation Rule (EPA and USACE 2008). A detailed description of CRAM is not included in this report. This information is available on the CRAM web site (www.cramwetlands.org) and in the *California Rapid Assessment Method for Wetlands and Riparian Areas: User's Manual*, Version 6.0 (CWMW 2012), including background information on the development, application, and implementation of CRAM. Additionally, the *Condition Assessment Technical Work Plan* (Authority and FRA 2011a) describes the methods used to conduct CRAM for the Fresno to Bakersfield Section of the HST and is supplemental to the *DRAFT Checkpoint C: LEDPA Determination: Methodology for Wetland Condition Assessment Using CRAM* that was prepared for the entire statewide HST system (Authority and FRA 2011b).

This report summarizes the results of CRAM conducted for the Fresno to Bakersfield Section of the HST during fall 2011 (September 19-29), spring 2012 (March 5-9, May 14-18), and winter 2013. The first two rounds assessed aquatic features within the Fresno to Bakersfield Section study area. The third and fourth rounds assessed aquatic features within potential mitigation sites for the project.

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Section 2.0

Project Location

2.0 Project Location

The Fresno to Bakersfield Section of the HST system lies entirely within the Great Valley Ecological biogeographic area and is surrounded by the Sierra Nevada Foothills and Sierra Nevada sections to the east, the Southern California Mountain and Valley sections to the south, and the Central California Coastal Ranges sections to the west. The study area is located in the central part of the San Joaquin Valley within the Tulare Lake Basin. The Tulare Lake Basin is approximately 16,400 square miles and spans mostly across Fresno, Kings, Tulare, and Kern counties. The topography in this part of the Central Valley is flat-lying, with elevations across the project alternatives and HMFs ranging between +395 feet (North American Vertical Datum of 1988 [NAVD 88]) to +205 feet (NAVD 88). A general downward gradient occurs in the study area to the west-southwest, determined principally by the gentle slope of the vast alluvial fans extending from the Sierra Nevada in the east to the center of the San Joaquin Valley.

2.1 Watersheds and Waterbodies

The Fresno to Bakersfield Section occurs within seven Hydrologic Unit Code (HUC)-8 watersheds in the Tulare Lake Basin. Significant natural waters that intersect with the Fresno to Bakersfield alternative alignments include Kings River, Cross Creek, Tule River, Deer Creek, Poso Creek, and Kern River. The names of the HUC-8 watersheds, the major surface water features, and the area of each watershed are summarized in Table 2.1-1.

Table 2-1
 Watersheds and Major Waterbodies within the Fresno to Bakersfield Section

Subbasin (HUC-8 No.)	Major Water Features	Watershed Area (Acres)
Upper Dry (18030009)	Kings River	1,360,539
Tulare-Buena Vista Lakes (18030012)	Kings River, Cross Creek, Tule River	2,423,853
Upper Kaweah (18030007)	Cross Creek	974,462
Upper Tule (18030006)	Tule River	604,506
Upper Deer-Upper White (18030005)	Deer Creek, Friant-Kern Canal	782,998
Upper Poso (18030004)	Poso Creek, Friant-Kern Canal	368,178
Middle Kern-Upper Tehachapi-Grapevine (18030003)	Kern River	1,675,939
Total	—	8,190,475
Acronym: HUC = Hydrologic Unit Code		

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Section 3.0

Project Description

3.0 Project Description

The proposed action is to construct and operate an HST rail line from Fresno to Bakersfield (Figure 3-1). The Fresno to Bakersfield Section is one of nine sections that were identified in the Program EIR/EISs (Authority and FRA 2005, 2008, 2010). The nine HST sections comprise a system that would connect the major population centers of the San Francisco Bay Area with the Los Angeles metropolitan region. The California HST System is planned to be implemented in two phases. Phase 1 would connect San Francisco to Los Angeles and Anaheim via the Pacheco Pass and the Central Valley. Phase 2 would connect from the Central Valley (Merced Station) to the state's capital, Sacramento, and another extension is planned from Los Angeles to San Diego. The HST system is envisioned as a state-of-the-art, electrically powered, high-speed, steel-wheel-on-steel-rail technology, which would employ the latest technology, safety, signaling, and automated train control systems. The trains would be capable of operating at speeds of up to 220 miles per hour over fully grade-separated, dedicated track.

The Fresno to Bakersfield Section of the HST project would be approximately 114 miles long, varying in length by only a few miles based on the route alternatives selected. To comply with the Authority's guidance to use existing transportation corridors, when feasible, the Fresno to Bakersfield HST Section would primarily be located adjacent to the existing BNSF Railway right-of-way. Alternative alignments are being considered where engineering constraints require deviation from the existing railroad corridor, and to avoid environmental impacts.

The Fresno to Bakersfield HST Section would cross both urban and rural lands and include a station in both Fresno and Bakersfield, a potential Kings/Tulare Regional Station in the vicinity of Hanford, a potential heavy maintenance facility (HMF), and power substations along the alignment. The HST alignment would be entirely grade-separated, meaning that crossings with roads, railroads, and other transport facilities would be located at different heights (overpasses or underpasses) so that the HST would not interrupt or interface with other modes of transport. The HST right-of-way would also be fenced to prohibit public or automobile access. The project footprint would primarily consist of the train right-of-way, which would include both a northbound and southbound track in an area typically 120 feet wide. Additional right-of-way would be required to accommodate stations, multiple track at stations, maintenance facilities, and power substations.

The Fresno to Bakersfield Section would include at-grade, below-grade, and elevated track segments. The at-grade track would be laid on an earthen rail bed topped with rock ballast approximately 6 feet off the ground; fill and ballast for the rail bed would be obtained from permitted borrow sites and quarries. Below-grade track would be laid in an open or covered trench at a depth that would allow roadway and other grade-level uses above the track. Elevated track segments would span long sections of urban development or aerial roadway structures and consist of steel truss aerial structures with cast-in-place, reinforced-concrete columns supporting the box girders and platforms. The height of elevated track sections would depend on the height of existing structures below, and would range from 40 to 80 feet. Columns would be spaced 60 feet to 120 feet apart.

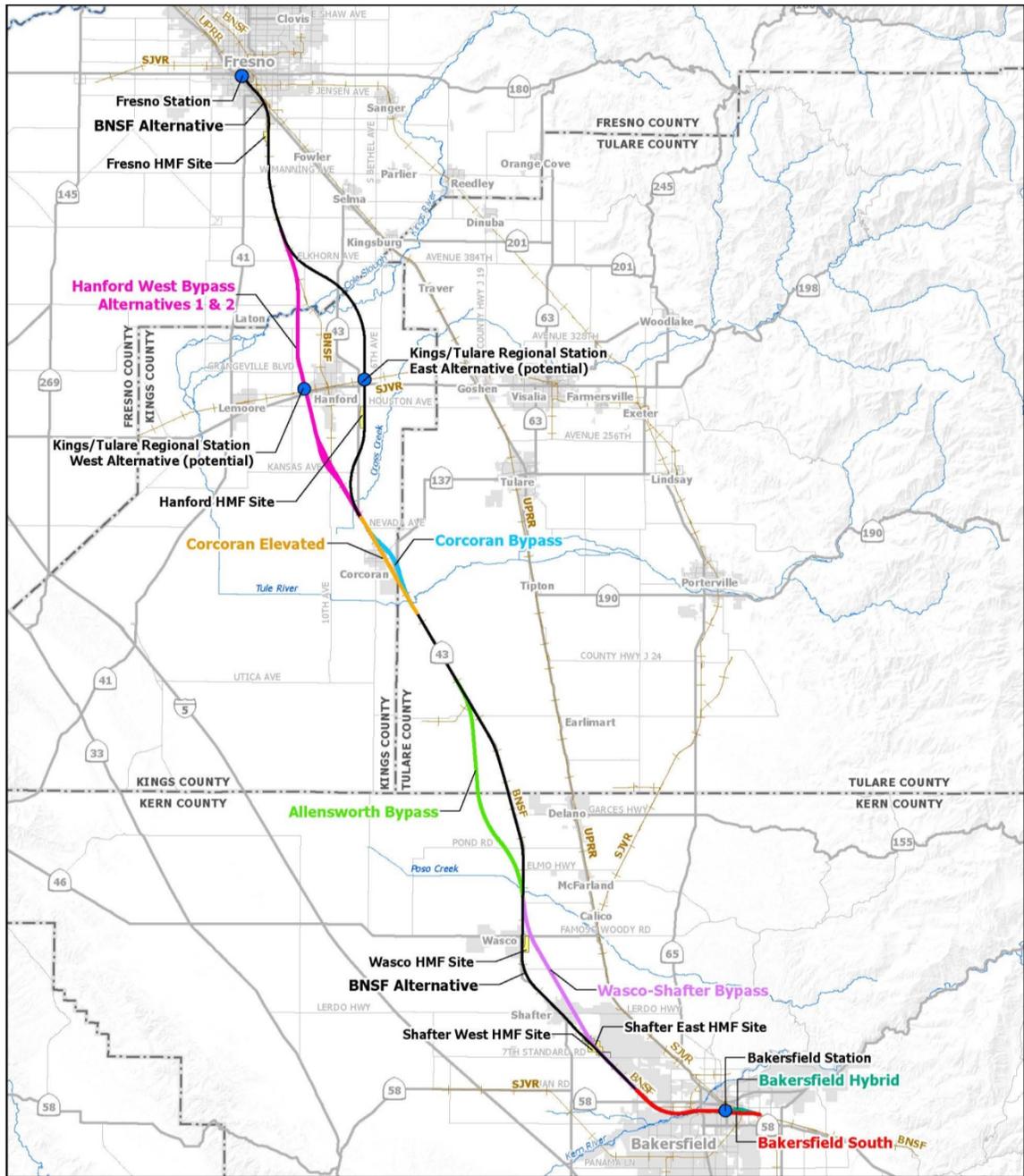
3.1 High-Speed Train Alternatives

The project EIR/EIS for the Fresno to Bakersfield HST Section examines alternative alignments, stations, and HMF sites within the general BNSF Railway corridor. Discussion of the HST project alternatives begins with a single continuous alignment (the BNSF Alternative) from Fresno to Bakersfield. This alternative most closely aligns with the preferred alignment identified in the Record of Decision (ROD) for the Statewide Program EIR/EIS. Descriptions of the additional eight alternative alignments that deviate from the BNSF Alternative for portions of the route then

follow. The alternative alignments that deviate from the BNSF Alternative were selected to avoid environmental, land use, or community issues identified for portions of the BNSF Alternative (Figure 3-1). The Authority and FRA, in coordination with USACE and EPA, will identify the least environmentally damaging alternative to comply with Section 404 of the Clean Water Act.

The Fresno to Bakersfield Revised Draft EIR/Supplemental Draft EIS (Authority and FRA 2012) evaluates 10 alignment alternatives including the No Project Alternative, BNSF, Hanford West Bypass 1, Hanford West Bypass 2, Corcoran Elevated, Corcoran Bypass, Allensworth Bypass, Wasco-Shafter Bypass, Bakersfield South, and Bakersfield Hybrid (Figure 3-1). In addition to the alternative alignments, two station alternatives in Fresno, two potential station locations in the Hanford area, three station alternatives in Bakersfield, and five potential heavy-maintenance facility alternatives are considered.

The Fresno to Bakersfield Section would connect to Merced to the north and to Palmdale to the south. A HST rail heavy vehicle maintenance and layover facility would be sited in either the Merced to Fresno Section or Fresno to Bakersfield Section. Additional details on project features and construction are presented in the Fresno to Bakersfield Revised Draft EIR/Supplemental Draft EIS (Authority and FRA 2012).



PRELIMINARY DRAFT/SUBJECT TO CHANGE - HST ALIGNMENT IS NOT DETERMINED
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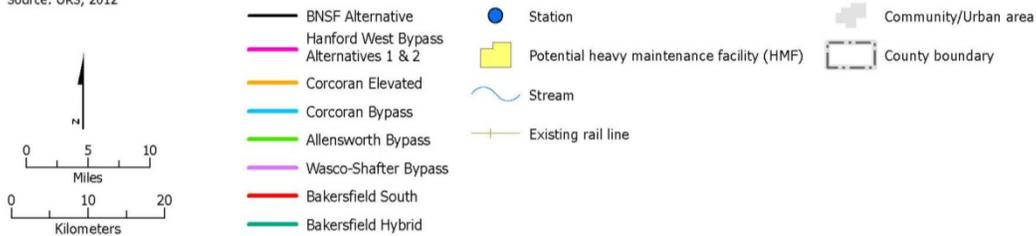


Figure 3-1
 Fresno to Bakersfield HST alternatives

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Section 4.0

Methods

4.0 Methods

The methodology for conducting CRAM is described in the *California Rapid Assessment Method for Wetlands and Riparian Areas: User's Manual*, Version 6.0 (CWMW 2012). This section provides details on pre-field preparations, the CRAM team for the Fresno to Bakersfield Section, and field methods and limitations particular to this section of the HST.

4.1 Wetland Classification

CRAM uses a wetland classification derived primarily from the functional classification described in the Hydrogeomorphic Method (Brinson 1993). The CRAM typology includes five wetland types: riverine wetlands, depressional wetlands, estuarine wetlands, lacustrine wetlands, and slope wetlands. All but lacustrine wetlands have been divided into sub-types. Riverine wetlands and depressional wetlands and their sub-types were used in the CRAM assessment for the Fresno to Bakersfield Section.

The *Preliminary Jurisdictional Waters and Wetlands Delineation Report* (Authority and FRA 2011c) submitted for the Fresno to Bakersfield Section described Special Aquatic Resource (SAR) types that were identified in the study area using the Cowardin system. This system is similar but not equivalent to the standard CRAM typology. A "crosswalk" was used to standardize the aquatic feature terms to standard wetland classification in accordance with CRAM (Table 4.1).

Table 4-1
 Crosswalk of Standard Terms Used for Wetland Condition Assessment

Preliminary Jurisdictional Waters and Wetland Delineation Report		CRAM Type
SAR Type	Cowardin Type	
Canal ^a	Riverine unconsolidated bottom	Riverine wetlands (streams and rivers-channel)
Ditch ^a	None assigned	Riverine wetlands (streams and rivers-channel)
Reservoir ^a	Lacustrine unconsolidated bottom	Lacustrine
Emergent wetland	Palustrine emergent nonpersistent	Depressional wetlands (except vernal pools and swales, marsh, and unvegetated flats)
Retention/detention basin ^a	Lacustrine unconsolidated bottom	Depressional wetlands (except vernal pools and swales, marsh, and unvegetated flats)
Riparian	Riverine forested wetland	Riverine wetlands (sub-types confined and non-confined streams and rivers-channel)
Seasonal riverine	Riverine unconsolidated bottom	Riverine wetlands (sub-types confined and non-confined streams and rivers-channel)
Seasonal wetland ^b	Palustrine emergent nonpersistent	Depressional wetlands (except vernal pools and swales, marsh, and unvegetated flats)

Table 4-1
 Crosswalk of Standard Terms Used for Wetland Condition Assessment

Preliminary Jurisdictional Waters and Wetland Delineation Report		CRAM Type
SAR Type	Cowardin Type	
Vernal pool	Palustrine emergent nonpersistent	Individual vernal pools and vernal pool systems (subtypes of Depressional)
Vernal swale	Palustrine emergent nonpersistent	Individual vernal pools and vernal pool systems (subtypes of Depressional)
<p>^a Man-made environment; it should be noted that the riverine module is acknowledged in CRAM to be applicable to "flowing-water" man-made features such as ditches and canals.</p> <p>^b This habitat type can contain seasonal (ephemeral) wetlands.</p> <p>Acronym: CRAM California Rapid Assessment Method SAR Special Aquatic Feature</p>		

4.2 CRAM Team Members

The individuals involved in the field aspects of this study are listed in Table 4.2-1.

Table 4-2
 Fresno to Bakersfield CRAM: Key Staff Members

Staff	Education	Experience	Project Role
Chad Roberts/Roberts Environmental and Conservation Planning	PhD, Ecology, University of California-Davis	CRAM Principal Investigator Group	CRAM Coordinator
Justin Whitfield/Joint Venture	BS, Biology, Florida State University	10 years' experience in preparing biological assessments, environmental documents, and wetland delineations	Biology Task Manager
Amy Langston/Joint Venture	MS, Biology, San Francisco State University	7 years' experience conducting wetland delineations and botanical surveys	CRAM field and office support
Chris Julian/Joint Venture	BS, Biology, University of California-Santa Barbara	9 years' experience in wetland permitting, and conducting wetland delineations and wetland functional assessments	CRAM field and office support

Table 4-2
 Fresno to Bakersfield CRAM: Key Staff Members

Staff	Education	Experience	Project Role
Julie Love/Joint Venture	MS, Environmental Science and Management, University of California-Santa Barbara	9 years' experience conducting wetland delineations, habitat restoration and monitoring, and stream monitoring	CRAM field and office support
Galen Peracca/Joint Venture	MF, Forestry, University of California-Berkeley	8 years' experience conducting wetland delineations, botanical surveys, and biological impact analysis	CRAM field and office support
Erin Maroni/Joint Venture	BS, Environmental Science, University of New Hampshire	3 years' experience participating in wetland delineations and habitat assessments.	CRAM field support
Tammy Lim/Joint Venture	MA, Ecology, San Francisco State University	12 years' experience as a field biologist conducting protocol-level surveys and habitat assessments	CRAM field support
Acronym: CRAM California Rapid Assessment Method			

The individuals identified above comprised the CRAM assessment team that carried out the fieldwork and/or provided technical guidance. The team was led by Chad Roberts. Dr. Roberts was selected as the CRAM coordinator/team leader because of his involvement in the development of CRAM as a member of the CRAM North Coast Regional Team. The other team members were not previously CRAM-trained; however, Amy Langston, Galen Peracca, and Justin Whitfield gained sufficient CRAM experience in the process of completing the work to be designated as competent in the CRAM methodology, and Julie Love and Chris Julian completed a formal CRAM training course. Erin Maroni and Tammy Lim, not formally CRAM-trained, assisted CRAM-trained team members in the field for CRAM conducted at potential mitigation sites. The team members led by Dr. Roberts were included in the team because of their experience and knowledge of aquatic features and wetland vegetation.

4.3 Procedures for Using CRAM

CRAM works by scoring four key attributes: Buffer and Landscape Context, Hydrology, Physical Structure, and Biotic Structure. All CRAM modules assess these four attributes, using various metrics (and submetrics) to address wetland class-specific relationships. In all modules, the CRAM "Index Score," or overall score, is calculated as the average of the four attribute scores. The condition assessment of wetlands for the Fresno to Bakersfield Section and potential mitigation sites used CRAM according to the most recent field books for the four modules: riverine, depressional, individual vernal pool, and vernal pool systems (Table 4.1-1).

4.3.1 Assessment Areas

In CRAM, the conditions attributed to wetland areas in a site or region are based on the conditions sampled in “assessment areas” (AAs), which are chosen to represent the wetlands within the site or region. The AAs in the Fresno to Bakersfield Section were identified by the CRAM team and GIS staff, accommodating site access constraints (see Section 4.3.3), and were reviewed by Chad Roberts, the CRAM coordinator. Some potential AAs were rejected as not consistent with CRAM guidance (e.g., an area substantially smaller than suggested guidance was rejected as too small), and other AAs were modified or redesignated (e.g., reclassified as depressional instead of riverine because of a lack of connection to a linear water feature) to be consistent with CRAM assessment practices. All draft AAs scheduled for field evaluation were classified according to standard CRAM assessment categories regardless of other classification categories. Before conducting CRAM fieldwork, a field packet was created for each prospective AA, including maps at necessary scales, showing a preliminary boundary for each AA, as well as a field book with necessary text and work tables for conducting CRAM.

AAs are identified in this report according to CRAM module type. Each AA has a unique identifier code that begins with a letter identifying the type of CRAM module applied (D=depressional, V=vernal pool, VS=vernal pool system, R=riverine). AAs within the study area include a number within the 1–299 range (e.g., R8, D105, VS212). AAs within the potential mitigation sites include a number in the 300–399 range (e.g., VS304).

Figures 4-1 and 4-2 show index maps of all the AA locations within the study area and potential mitigation areas. Appendix A provides maps of all the AAs evaluated for this report.

4.3.2 Field Assessment

Field assessments were conducted in four rounds: September 19–29, 2011, March 5–9, 2012, May 14–18, 2012, and January 3–4, 2013. The first two rounds assessed aquatic features within the Fresno to Bakersfield Section study area. The third and fourth rounds assessed aquatic features within potential mitigation sites for the project. The first round of CRAM fieldwork was conducted outside the vernal pool wetlands assessment window at the request of the EPA and USACE staff, in order to meet the project timeline goals. Though it occurred outside the assessment window, the results are considered valid. Any deviations from standard CRAM methodology are described in Section 4.3.3.

As required by CRAM, the field team modified AA boundaries during fieldwork to better capture the conditions present in the AAs at the time of the assessment. Additionally, some AAs were shifted to more appropriate locations that better represented the wetlands present. The revisions to AA boundaries made in the field were used by the GIS staff to update the CRAM maps. The results and maps provided in this report reflect the AAs and field conditions identified by the field team at the times that CRAM fieldwork was conducted.

4.3.3 Field Conditions and Limitations

The first round of CRAM fieldwork occurred outside the appropriate assessment window for vernal pool wetlands, which corresponds with the growing season and which extends from March to July (CWMW 2009). Much of the vegetation associated with vernal pools was desiccated and reduced in cover, and identification of dominance was based on the familiarity of project team members with the dry-season appearances of species that grow in the study area. In addition, direct evidence of hydrology in natural seasonal wetlands was limited, although hydrology indicators used in CRAM are typically present throughout the year. Another exception, due to deep water levels, occurred in assessing the Kern River, where the AA had to be positioned along only one bank, and the data extrapolated for the entire width of the river. The details for this

situation are described in Section 6.1.2. All exceptions to standard CRAM assessment methodology (e.g., the identification of vernal pool-endemic plants, assessment windows) were executed with consultation from the CRAM coordinator, EPA, and USACE.

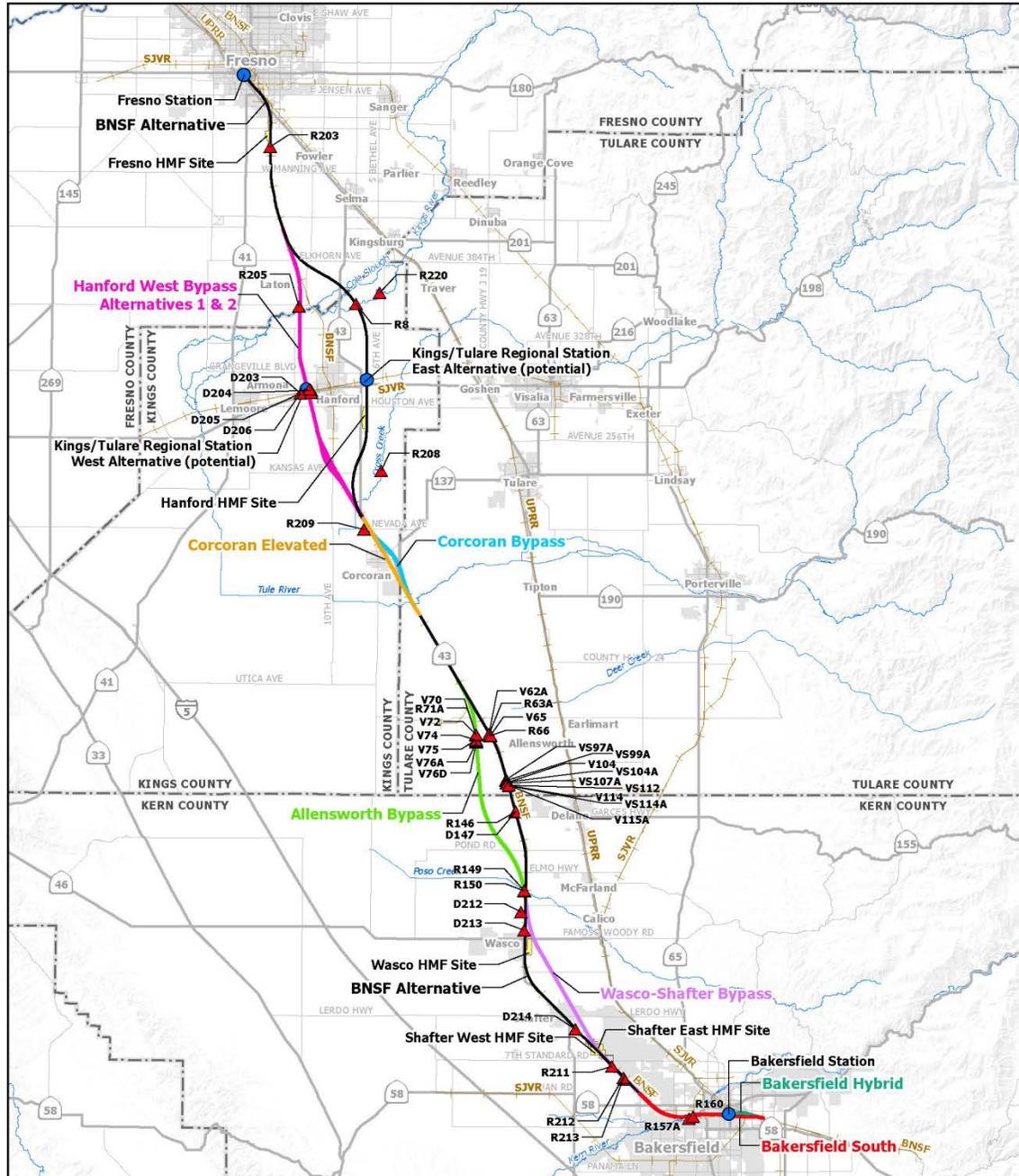
The first two rounds of CRAM fieldwork were conducted within the Fresno to Bakersfield Section study area, which includes the project footprint and a 250-foot buffer surrounding the footprint. The footprint includes all areas where aquatic features will be directly impacted by the project. The 250-foot buffer accounts for aquatic features that may be indirectly affected by the project. Because permission to enter was not available for all aquatic features in the study area, the Fresno to Bakersfield regional consultants requested permission to enter from the various private and public landowners. That is, CRAM assessments were only conducted where permission had been granted to the consultant team to enter private land. Therefore, a condition assessment of all aquatic features or all feature types present within the study area was not possible. Instead, a representative sample of accessible aquatic features was selected for CRAM fieldwork. The sample included canals, ditches, retention/detention basins, seasonal riverine, seasonal wetlands, vernal pools, and vernal swale and pool complexes. Access to emergent wetland and reservoirs was not granted. Vernal swales were represented in AAs of vernal pool systems. Best professional judgment, along with direction from the CRAM coordinator regarding an appropriate CRAM sample frame and consultation with the EPA and USACE, were followed in selecting the sample of AAs.

The third and fourth rounds of CRAM fieldwork were conducted on seven private properties being considered for compensatory mitigation. Permission to enter was granted for all seven. The following six properties were evaluated during the third round of CRAM: Buena Vista Dairy, and the Davis, Staffel, Te Velde, Valadez, and Yang properties. Clark River Ranch was evaluated during the fourth round of CRAM.

4.3.4 Post-Field Data Evaluation

After completion of each round of fieldwork, the scoring results were entered into an Excel spreadsheet by the CRAM team and reviewed by Chad Roberts. The spreadsheet was compared with the field data forms for quality-assurance purposes, particularly for data entry and computational errors. The Excel spreadsheet is the basis for this summary report. Both the spreadsheet and the original field data forms are available to agency staff for review purposes. Additionally, AA boundary maps, data forms, stressor checklists, and site photographs are provided in the attached appendices.

Following the field surveys for the Fresno to Bakersfield study area, CRAM data collected using the individual vernal pools and vernal pool systems field books (Version 5.0.3) were revised according to the new vernal pool field books (Version 6.0), which were released after the fieldwork for the Fresno to Bakersfield Section study area was completed. Scores for these AAs were updated based on the new field books at the recommendation of the CRAM coordinator. These scores are presented in this report. The AAs for vernal pools, vernal pool systems and riverine wetlands at potential mitigation sites were assessed in the field using Version 6.0 of the field books.



PRELIMINARY DRAFT/SUBJECT TO CHANGE - HST ALIGNMENT IS NOT DETERMINED
 Source: URS, 2012

June 19, 2012

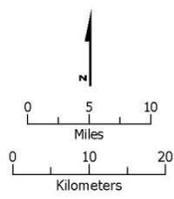
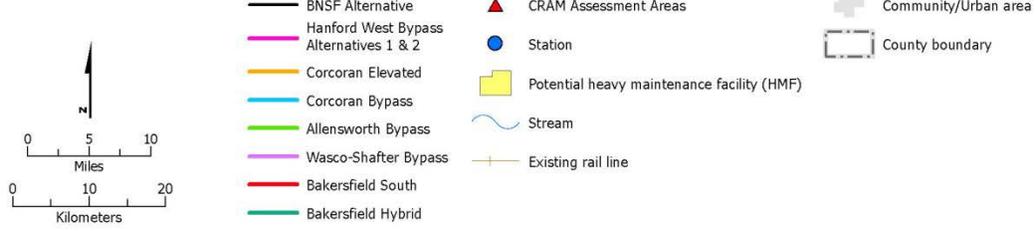


Figure 4-1
 Index map of CRAM AAs in the study area

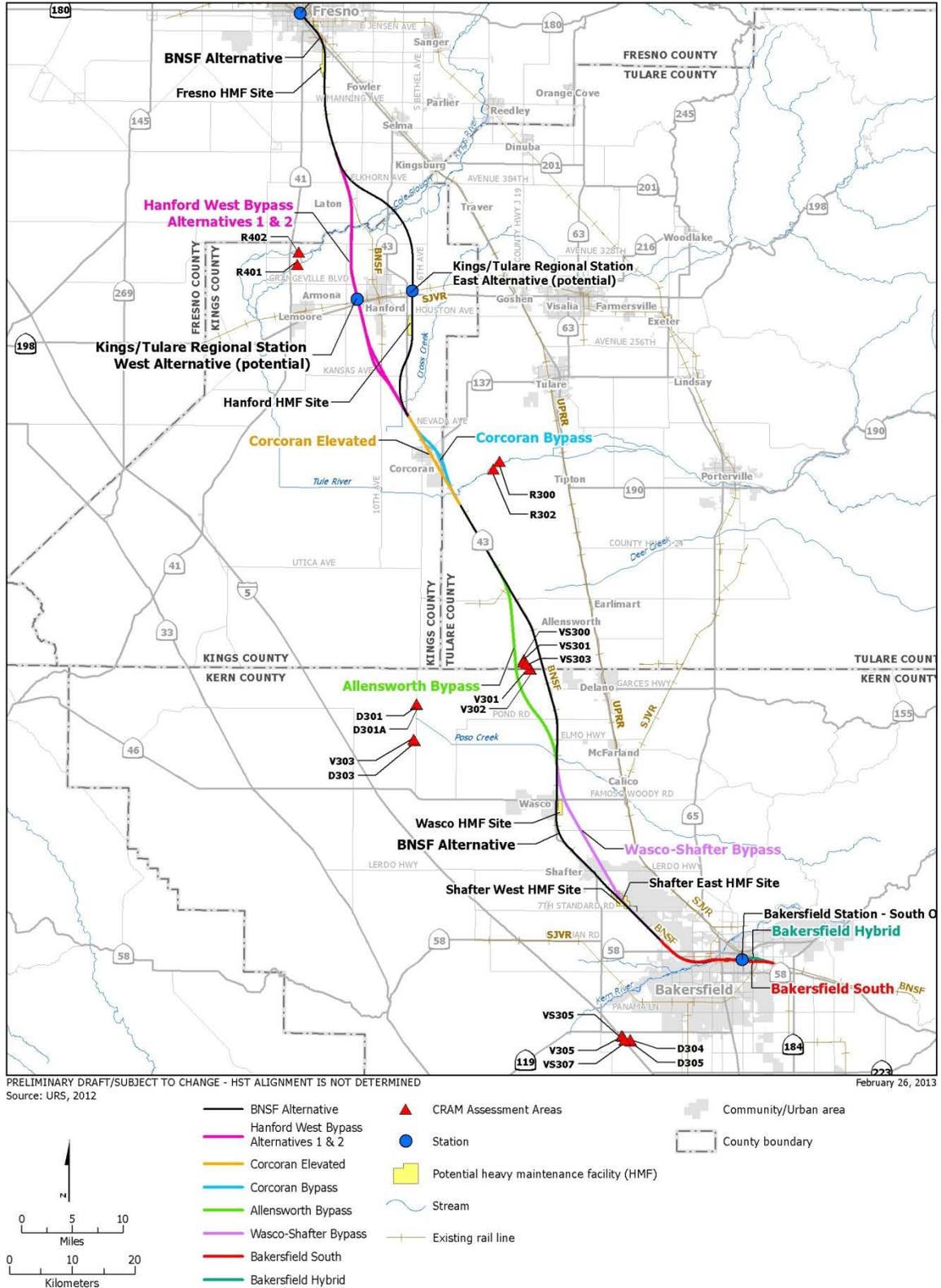


Figure 4-2
 Index map of CRAM AAs at mitigation sites

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Section 5.0

Results

5.0 Results: Fresno to Bakersfield CRAM Scores

This section presents the CRAM scores from the condition assessment conducted in the study area of the Fresno to Bakersfield Section (Sections 5.1-5.5), as well as CRAM scores from AAs within the potential mitigation sites (Section 5.6). Forty-two AAs were assessed within the Fresno to Bakersfield Section and 16 AAs were assessed within potential mitigation sites. A table summarizing the results for all of the AAs is provided in Appendix B and data forms are provided in Appendix C. Representative photos of the AAs are provided in Appendix D.

Assessment areas were set up using four CRAM wetland types within the Fresno to Bakersfield section of HST: (1) depressional wetlands, (2) riverine wetlands, (3) individual vernal pools, and (4) vernal pool systems. These wetland types correspond to CRAM field books, which were used to assess the AAs. A summary of the CRAM scores for each CRAM wetland type is presented in Table 5-1. Possible CRAM scores range from 25 to 100. CRAM scores of AAs within the Fresno to Bakersfield Section ranged from 27.8 to 82.7.

Table 5-1
 Average Index and Attribute Scores by CRAM Type, by Wetland Type

CRAM Type	Number of AAs	Average Index Score	Average Attribute Scores			
			Buffer and Landscape Context	Hydrology	Physical Structure	Biotic Structure
Depressional Wetland	8	46.0	35.1	54.1	40.7	54.1
Agricultural Reservoir	4	40.5	30.8	45.8	37.6	47.9
Detention Basin	2	42.3	33.2	58.3	25	52.7
Seasonal Basin	2	60.7	45.4	66.7	62.5	68.1
Riverine Wetland	17	55.2	66.3	57.4	45.7	51.4
Canal/Ditch	10	48.1	63.5	50.8	36.4	41.7
Seasonal Riverine	7	65.4	70.3	66.8	59.1	65.2
Individual Vernal Pool	11	70.0	73.6	87.1	54.5	64.8
Vernal Pool System	6	79.2	83	91.7	75	67.4
Acronyms: AA assessment area CRAM California Rapid Assessment Method						

5.1 Depressional

Eight AAs were assessed using the depressional wetlands module. The scores are based on the assessment of six retention/detention basins and two isolated seasonal wetlands (basins) that appear to be remnants of a former riverine feature. The six retention/detention basins are located throughout the Fresno to Bakersfield study area and are composed of four agricultural basins and two urban basins. The retention/detention basins all received similar scores. Because they are immediately surrounded by agricultural land or urban development, the retention/detention basins scored particularly low on the Buffer and Landscape Context Attribute.

A manipulated hydrologic regime accounted for the low scores on the Hydrology Attribute and the general lack of physical and biotic structural complexity resulted in low scores on the Physical Structure and Biotic Structure Attributes.

Two isolated seasonal wetland basins in Hanford were assessed as depressional wetlands. These features are remnant segments of a natural channel and are now hydrologically closed off from a flow-through system. These features scored higher than the retention/detention basins as a result of being surrounded by larger buffers and having a predominantly natural water source (groundwater). Because these two features, unlike the retention/detention basins, were vegetated and had some degree of topographic complexity, they scored higher, in general, on the Physical and Biotic Structure Attributes.

Figure 5-1 shows the average CRAM index scores and attribute scores for retention/detention basins and seasonal wetlands evaluated using the depressional wetland module.

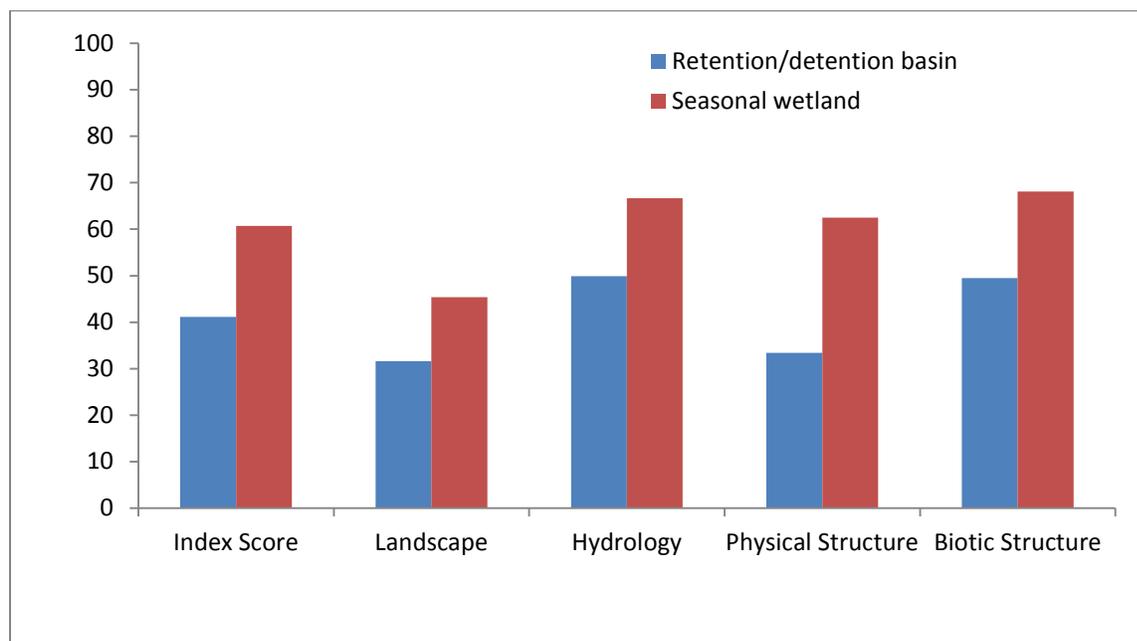


Figure 5-1
 Average CRAM index scores and attribute scores for depressional wetland AAs

5.2 Riverine Wetlands

Seventeen AAs were assessed using the riverine module. These scores are based on the assessment of three canals, seven ditches, and seven seasonal riverine features. The ditches and canals were generally the lowest-scoring features assessed using the riverine module. The ditches and canals are located throughout the Fresno to Bakersfield study area. The majority are adjacent to agricultural fields and have hydrologic regimes controlled by weirs, gates, and pumping systems. Because of their landscape position, highly manipulated hydrologic regime, and lack physical and structural complexity, AAs of ditches and canals generally received relatively low Index scores and attribute scores. Three exceptions are ditches in the Allensworth area that are surrounded by a relatively natural vernal pool landscape and are not used for agricultural purposes.

AAs along the Kings River, Poso Creek, Cross Creek, and Kern River were selected to assess seasonal riverine features within the Fresno to Bakersfield study area. Overall, the Index scores

for these AAs were similar though attribute scores for the AAs along the Kings River were generally higher than those of the other AAs, and attribute scores for Poso Creek were generally lower than those of the other AAs. The AA along Cross Creek scored relatively high overall, though individual attribute scores were within the ranges of those of the other riverine AAs. The lowest Index score for a seasonal riverine AA was along the Kern River where evidence of severe aggradation and little structural patch richness resulted in low Hydrology and Physical Structure Attribute scores.

Figure 5-2 shows the average CRAM index scores for SAR wetland types evaluated using the riverine module.

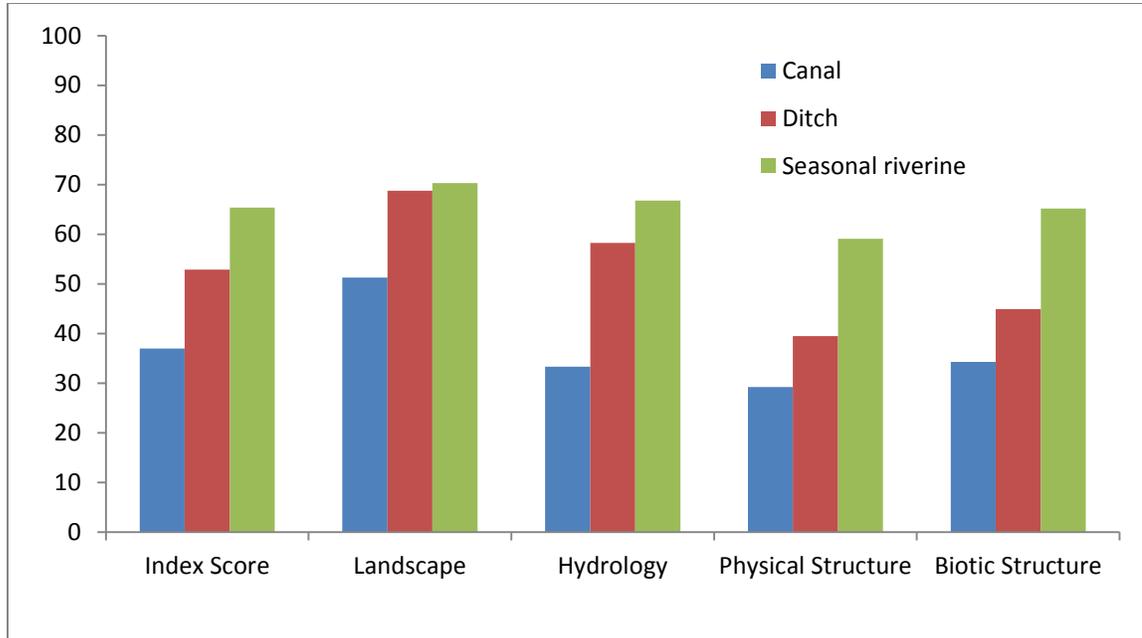


Figure 5-2
 Average CRAM index scores and attribute scores for riverine wetland AAs

5.3 Individual Vernal Pools

Eleven AAs in vernal pools were assessed using the individual vernal pool module. All of these AAs occurred in the Allensworth area, either west of the town of Allensworth or near the Allensworth Ecological Reserve and BNSF railway. The AAs west of Allensworth (Appendix B, V70-V76D) scored lower than those near the Allensworth Ecological Reserve (Appendix B, V62A, V65, and V104-V115A) due to the proximity to habitat disturbed by surrounding dry land farming, compacted soils, and the dumping of refuse. Comparatively, vernal pools near the Allensworth Ecological Reserve are surrounded by relatively undisturbed natural lands and are dominated by native vegetation. All AAs in vernal pools received relatively high scores for the Hydrology Attribute, because the majority of the vernal pools assessed were away from berms, groundwater pumping systems, and agricultural canals and ditches. Scores for Physical Structure tended to be lower than other attribute scores, as a result of a lack of structural patch richness and a lack of topographic complexity.

Figure 5-3 shows the average CRAM index scores for individual vernal pool AAs.

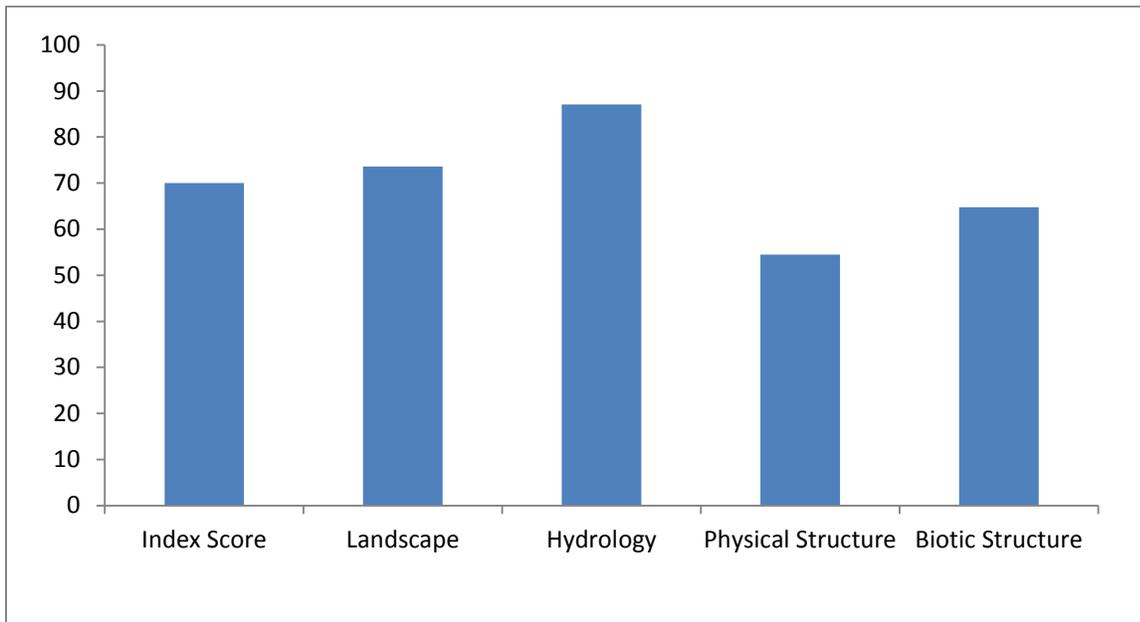


Figure 5-3
 Average CRAM index score and attribute scores for individual vernal pool AAs

5.4 Vernal Pool Systems

Six AAs were assessed using the vernal pool systems module. All of these AAs occurred in the Allensworth area. These AAs consistently scored relatively high, with the highest-scoring AA receiving an overall score of 82.7. The high scores are indicative of the fact that the surrounding natural landscape is composed of a network of wetlands that is less disturbed than the rest of the Fresno to Bakersfield study area. All of the AAs scored high on the Buffer and Landscape Context and Hydrology Attributes. Scores for the Physical Structure Attribute varied, which was due to the varied degree of topographic complexity observed in each vernal pool system. Scores were typically lowest for the Biotic Structure Attribute because of a general lack of dominant endemic vernal pool vegetation.

Figure 5-4 shows the average CRAM index scores for vernal pool systems AAs.

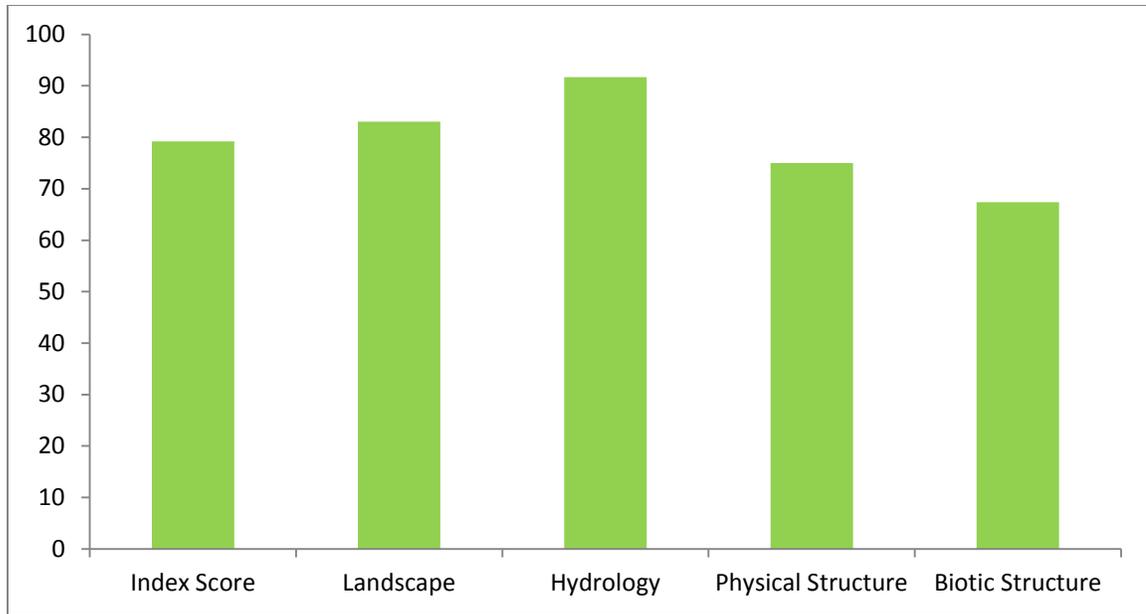


Figure 5-4
 Average CRAM index score and attribute scores for vernal pool systems AAs

5.5 Fresno to Bakersfield CRAM Stressors

Appendix E lists the stressors influencing the AAs evaluated for Fresno to Bakersfield. The most common stressor within the Buffer and Landscape Attribute was the negative effect of a transportation corridor within 500 meters of AAs. Generally, the transportation corridor closest to the AAs was the BNSF railroad and SR 43 corridor. The most common stressor for the Hydrology Attribute was the negative influence of a dike/levee within 50 meters, which was typically the berm associated with BNSF and SR 43. Grading/compaction was the most common stressor within the Physical Structure Attribute and can generally be attributed to grading for agricultural purposes. Pesticide application or vector control was the most common stressor within the Biotic Structure Attribute, resulting from the proximity of AAs to row crops and orchards to which pesticides are applied.

The stressors can also be compared by CRAM wetland type. For depressional wetlands, the most common stressor was pesticide application/vector control, due to the hydrologic connection between agricultural fields and retention/detention basins and the opportunity for chemicals to flow into the basins. The presence of dikes/levees, orchards/nurseries, and a transportation corridor were most common for all riverine AAs (including canals, ditches and seasonal riverine). No difference was found in the stressors on canals and ditches versus seasonal riverine features. For vernal pools and vernal pool systems, the most common stressors were the presence of dikes/levees and a transportation corridor. Grading/compaction was also common for individual vernal pools.

5.6 Potential Mitigation Sites

A summary of the CRAM scores for each potential mitigation site is presented in Table 5.6-1. Eighteen AAs were evaluated across the seven properties. The CRAM scores of AAs within these sites ranged from 57.7 to 81.2. The CRAM results for each site are detailed in this section along with descriptions of the stressors influencing the AAs.

Table 5-2
 CRAM Results for Mitigation Sites

Location	CRAM Type	Number of AAs	Average Index Score	Average Attribute Scores			
				Buffer and Landscape Context	Hydrology	Physical Structure	Biotic Structure
Buena Vista Dairy	Depressional Wetland	2	70.7	87.1	83.3	50	62.5
	Individual Vernal Pool	1	75.4	93.3	91.7	62.5	54.2
	Vernal Pool System	2	81.2	93.3	91.7	75	64.6
Davis	Seasonal Depressional Wetland	2	69.7	84.0	83.3	37.5	73.6
Staffel	Individual Vernal Pool	2	73.9	93.3	91.7	43.8	66.7
Te Velde	Riverine	2	57.9	67.7	66.7	37.5	60.3
Valadez	Depressional Wetlands	1	58.5	47.9	66.7	50	69.4
	Individual Vernal Pool	1	57.7	55.8	100	37.5	37.5
Yang	Vernal Pool System	3	81.0	93.3	91.7	75	63.9
Clark River Ranch	Riverine	2	59.8	68.8	62.5	43.8	63.9

Acronyms:
 AA assessment area
 CRAM California Rapid Assessment Method

5.6.1 Buena Vista Dairy

Buena Vista Dairy is a 715-acre property in Kern County, predominantly composed of undisturbed land supporting vernal pools, swales, and remnant riverine wetlands. Five AAs were evaluated on the Buena Vista Dairy property: two depressional wetlands, one individual vernal pool, and two vernal pool systems. All five of these AAs are representative of the wetland features present on the property. The depressional wetlands are part of a remnant channel that no longer functions as a flow-through system because of a restrictive berm downstream of the AAs. These two AAs received nearly identical scores. Due to lack of physical and biotic diversity and the presence of a non-native invasive plant species, both AAs scored relatively low on the Physical Structure and Biotic Structure Attributes, compared to their scores for the Buffer and Landscape and Hydrology Attributes. The individual vernal pool AA scored relatively high on Buffer and Landscape, and Hydrology Attributes due to a continuous, wide buffer and natural hydrology. It scored lower on the Physical Structure Attribute as a result of moderate structural patch richness. It scored lowest on Biotic Structure due to a lack of endemic vernal pool species in the AA. Of the AAs evaluated

on the property, the two vernal pool system AAs scored the highest, scoring relatively high for all attributes except Biotic Structure. Like the individual vernal pool AA, no endemic vernal pool species were identified in these AAs lowering the Biotic Structure score.

Appendix E lists the stressors influencing the AAs evaluated at the Buena Vista Dairy as well as the rest of the potential mitigation sites. The stressor influencing the depressional wetland AAs on the Buena Vista Dairy within the Buffer and Landscape Attribute was intensive row crop activities on the adjacent property. The Interstate 5 and Route 119 transportation corridors were the stressors that had the greatest influence on the individual vernal pool and vernal pool system AAs. All of the AAs were negatively influenced by the dike/levee within 50 meters (under the Hydrology Attribute), which blocked the flow of the historic channel through the property. No stressors within the Physical or Biotic Structure Attributes were identified for any of the AAs on the Buena Vista Dairy property.

Figure 5-5 shows the average CRAM index scores and attribute scores for the five AAs evaluated on the Buena Vista Dairy property, broken down by CRAM wetland type.

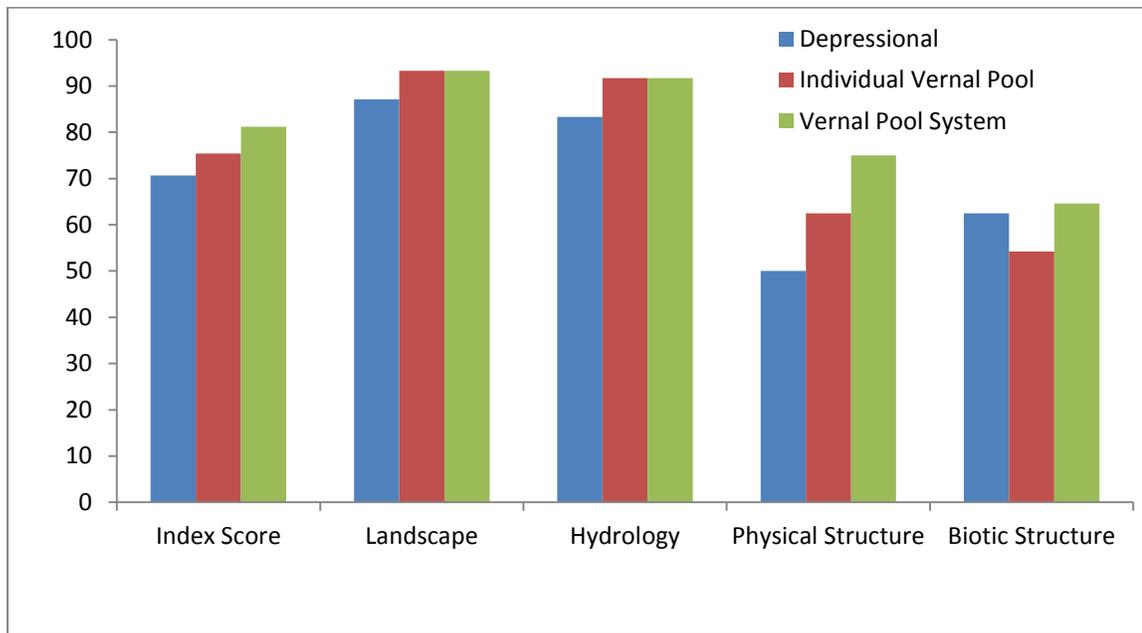


Figure 5-5
 Average CRAM index score and attribute scores for AAs on Buena Vista Dairy

5.6.2 Davis

The Davis property is a 158-acre parcel containing predominantly undisturbed land in Kern County. A large vernal swale extends from the northeast region of the property to the southwest corner and seasonal depressional wetlands are present along the western edge of the parcel. Two of these seasonal wetlands were assessed using the CRAM depressional module. Both AAs occur in the northwestern portion of the property. The AAs received similar CRAM index scores and received identical scores for the Buffer and Landscape Context, Hydrology, and Physical Structure Attributes. The site is relatively undisturbed and the presence of a wide buffer in good condition and the natural hydrology resulted in high scores for the Buffer and Landscape Context and Hydrology Attributes. Among the attributes, the AAs scored lowest on Physical Structure. Both structural patch richness and topographic complexity were lacking in these wetlands. This was characteristic of other wetlands identified on the property. Differing degrees of horizontal

interspersed and zonation in the two AAs provided variation in the scores for the Biotic Structure Attribute.

The stressors influencing the AAs on the Davis property were within the Buffer and Landscape Context and Hydrology Attributes. The transportation corridor (Corcoran Road) supports enough traffic to negatively affect the AAs. Additionally, evidence of passive recreation (foot trails) indicates potential for a negative effect from human use. Within the Hydrology Attribute, the AAs were negatively influenced by flow obstructions from the presence of a culvert directing flows beneath Corcoran Road. No stressors were identified within the Physical and Biotic Structure Attributes.

Figure 5-6 shows the average CRAM index score and attribute scores for the two seasonal depressional wetland AAs evaluated on the Davis property.

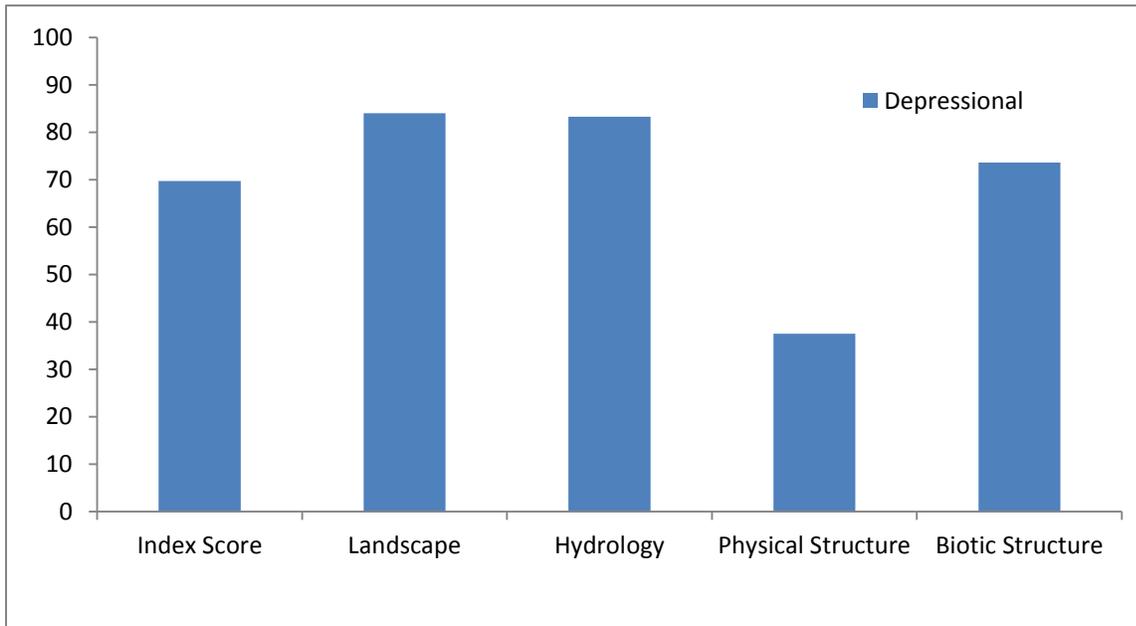


Figure 5-6
 Average CRAM index score and attribute scores for AAs on the Davis property

5.6.3 Staffel

The Staffel property is a 61-acre parcel in Kings County, immediately south of the Allensworth Ecological Reserve. The land is predominantly undisturbed and supports vernal pools in the northern portion of the property and as well as small scattered depressional seasonal wetlands. The vernal pools are part of a larger vernal pool network that extends offsite, receiving surface flow from the Allensworth Ecological Reserve that enters at the northern boundary of the Staffel property. Two large individual vernal pool AAs were evaluated at the Staffel property. These AAs are representative of vernal pools present throughout the property. The site is relatively undisturbed and both AAs scored high on Buffer and Landscape Context and Hydrology Attributes because of the continuous, wide buffers and natural hydrology. Both AAs scored lowest on the Physical Structure Attribute. Both structural patch richness and topographic complexity were lacking in these vernal pools. This was characteristic of other vernal pools identified on the property. One vernal pool AA scored relatively low on the Biotic Structure Attribute due to little horizontal interspersed and zonation. The other AA received a moderately high Biotic Structure Attribute score because it had a large number of co-dominant plant species. Neither AA contained endemic vernal pool species.

The stressors influencing the AAs on the Staffel property were within the Buffer and Landscape Context and Physical Structure Attributes. The presence of orchards/nurseries on parcels south of the Staffel property potentially has a negative effect on the AAs. Additionally, the presence of trash/refuse, including plastic buckets, oil drums, and discarded appliances and furniture may negatively affect the physical structure of the vernal pools. No stressors were identified within the Hydrology and Biotic Structure Attributes.

Figure 5-7 shows the average CRAM index score and attribute scores for the two individual vernal pool AAs evaluated on the Staffel property.

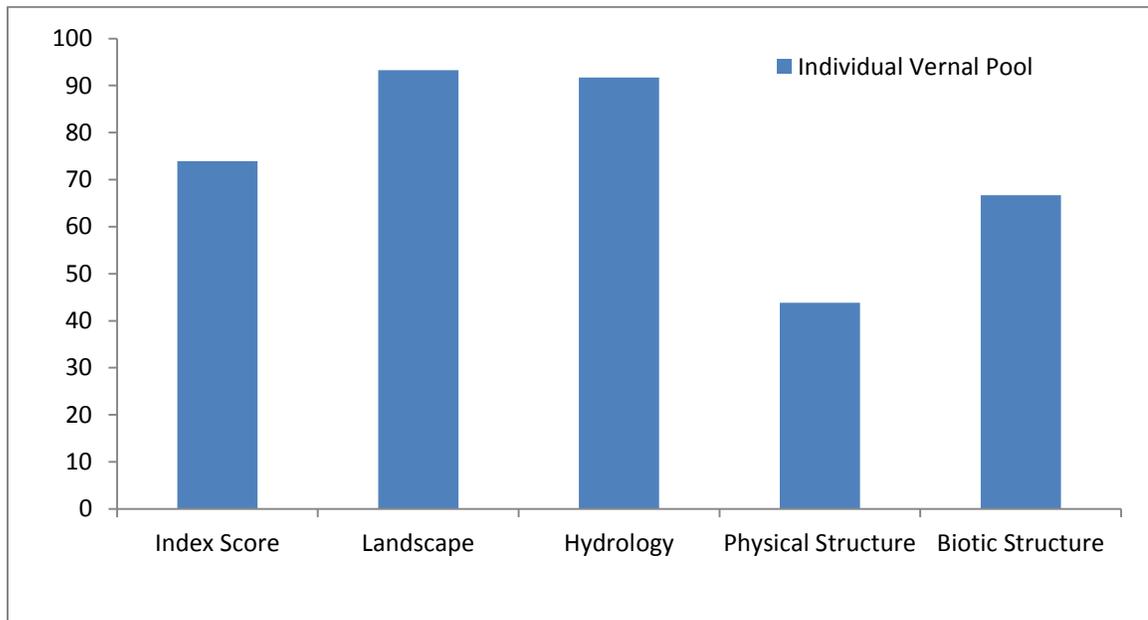


Figure 5-7
 Average CRAM index score and attribute scores for AAs on the Staffel property

5.6.4 Te Velde

The Te Velde property consists of eight parcels on 1,356 acres in Tulare County. The parcels are in active agricultural use. The Tule River flows across the property from the east, bisecting the site, and forks before reaching the southwest corner. Two riverine AAs were evaluated along the Tule River on the Te Velde Property. Because this portion of the Tule River is bounded on both sides by roads atop berms and is surrounded by agricultural fields, both AAs received moderate scores for the Buffer and Landscape Context Attribute. Hydrologic connectivity was the metric that most influenced scores for the Hydrology Attribute, with one AA scoring relatively high and the other relatively low. Both AAs scored relatively low on the Physical Structure Attribute. Structural patch richness and topographic complexity were lacking within this portion of the Tule River. The presence of non-native invasive plant species and low vertical biotic structure resulted in relatively low Biotic Structure Attribute scores for both AAs. These AAs are representative of the segment of the Tule River that runs through the Te Velde property.

The stressor influencing the AAs on the Te Velde property within the Buffer and Landscape Context was ranching, from the onsite ranch south of the river. Within the Hydrology Attribute, non-point source discharges from agricultural activities immediately adjacent to the AAs and flow diversions from culverts were identified as stressors negatively influencing the AAs. Within the Physical Structure Attribute, grading/compaction and plowing/discing were also identified. Additionally, the AAs were identified as bacteria- and pathogen- impaired based on visible

watering of livestock waste piles adjacent to the Tule River. No stressors were identified within the Biotic Structure Attribute.

Figure 5-8 shows the average CRAM index score and attribute scores for the two seasonal riverine AAs evaluated on the Te Velde property.

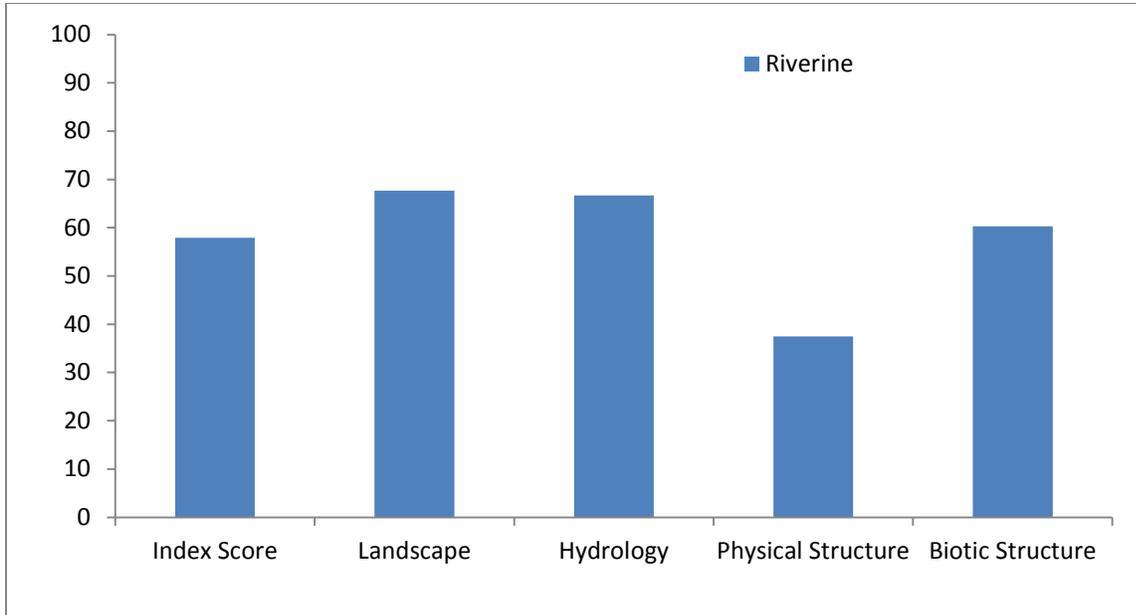


Figure 5-8
 Average CRAM index score and attribute scores for AAs on the Te Velde property

5.6.5 Valadez

The Valadez property is a 120-acre parcel of moderately disturbed land featuring a man-made wetland basin, and vernal pools that are located in the northern portion of the site. Two AAs were evaluated on the Valadez property: one depressional wetland and one individual vernal pool. The depressional wetland AA was in the large, deep, man-made basin that appears to no longer be used for any water-holding/infiltration purposes. The basin now functions as a vegetated wetland with upland islands. This AA received a relatively low index score and low attribute scores because of disturbed site conditions, the man-made nature of the feature, and little physical and biotic diversity. The individual vernal pool AA also received a relatively low index score and low attribute scores, resulting from a disturbed landscape and little physical and biotic diversity. The exception was the Hydrology Attribute, for which the AA received a score of 100. Despite disturbed site conditions, the AA showed evidence of a natural hydrology regime.

The stressors influencing the AAs on the Valadez property differed somewhat between the two AAs. The stressors influencing the depression wetland were urban/residential (from the onsite residential and operational facilities) and grading/compaction of the land adjacent to the wetland. These stressors are within the Buffer and Landscape Context and Physical Structure Attributes, respectively. The transportation corridor of Corcoran Road was identified as negatively affecting both AAs. No other stressors were observed for the individual vernal pool AA and no stressors within the Biotic Structure Attribute were identified.

Figure 5-9 shows the average CRAM index scores and attribute scores for the depression wetland and the individual vernal pool AAs evaluated on the Valadez property.

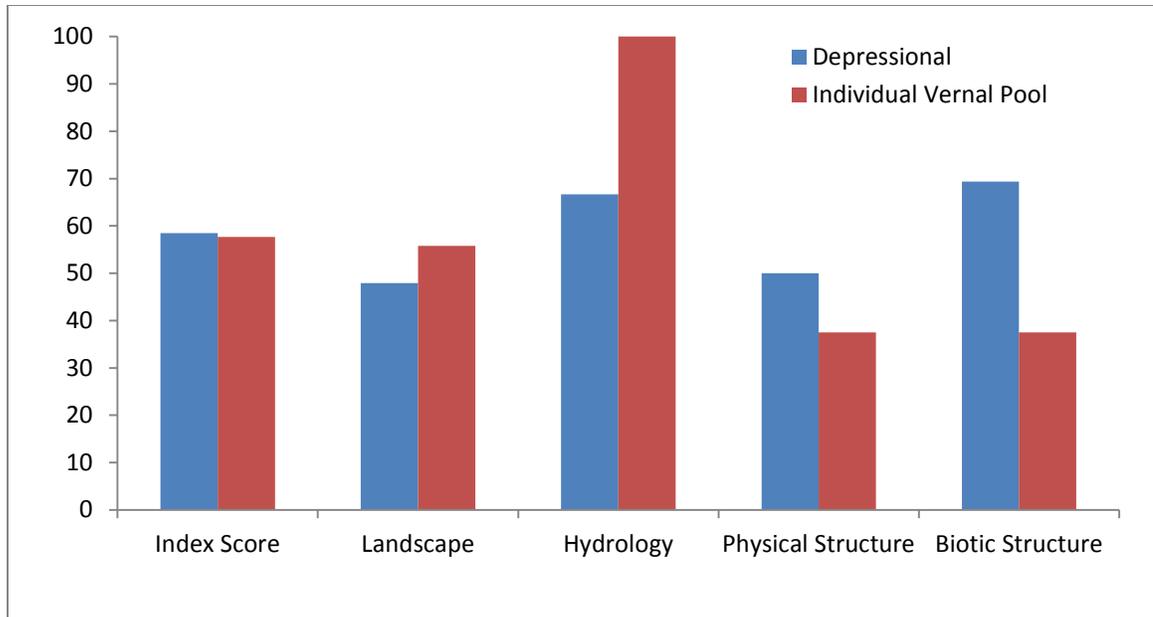


Figure 5-9
 Average CRAM index score and attribute scores for AAs on the Valadez property

5.6.6 Yang

The Yang property is composed of 316 acres on eight parcels in Kings County and is bordered by the Allensworth Ecological Reserve to the east. The land is predominantly undisturbed and a large, continuous network of vernal pools and swales extends from the Allensworth Ecological Reserve west onto the Yang property. Three vernal pool system AAs were evaluated on the Yang property. All three received relatively high index scores and are representative of vernal pool systems on the property. The natural conditions of the site and surrounding landscape resulted in relatively high scores for the Buffer and Landscape Context and Hydrology Attributes for all three AAs. Although pool and swale density were high, a lack of abundant structural patch richness and topography complexity resulted in lower scores for the Physical Structure Attribute in all three AAs. The Biotic Structure Attribute received the lowest scores. This was primarily due to a high percentage of non-native species present in the vernal pools and a lack of endemic vernal pool species.

Only one stressor was identified as negatively affecting the three AAs on the Yang property: the presence of orchards/nurseries within 500 meters of the property north of Yang. No CRAM stressors within the Hydrology, Biotic, or Physical Structure Attributes were observed.

Figure 5-10 shows the average CRAM index score and attribute scores for the three vernal pool system AAs evaluated on the Yang property.

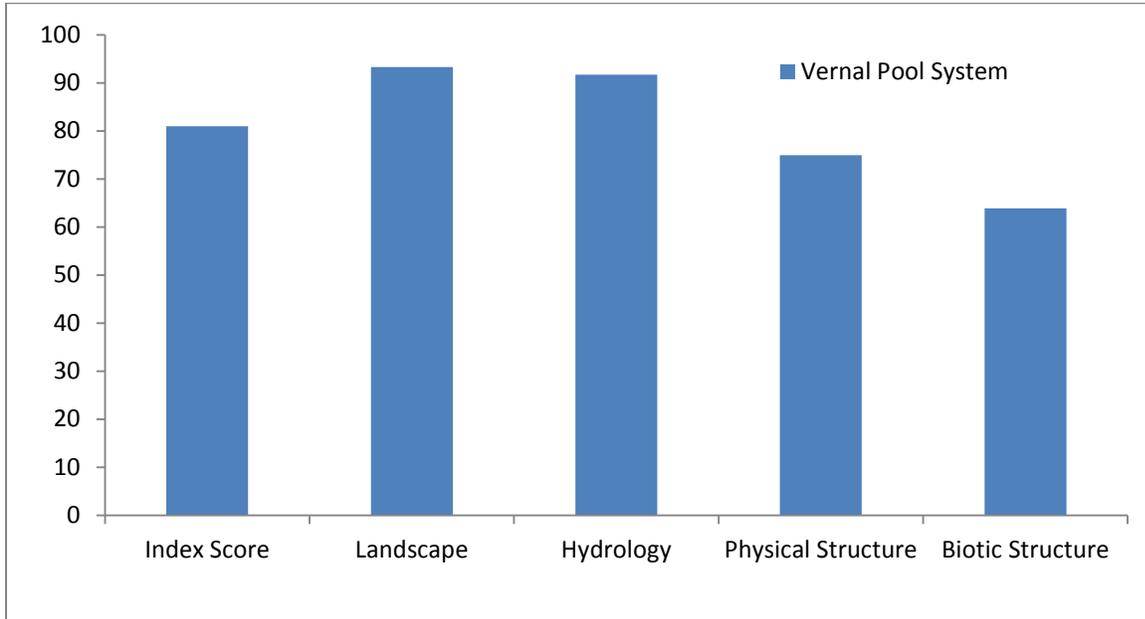


Figure 5-10
 Average CRAM index score and attribute scores for AAs on the Yang property

5.6.7 Clark River Ranch

Clark River Ranch is composed of approximately 290 acres on 110 parcels at the divergence of the northern and southern forks of the Kings River in Kings County. The parcels include a combination of active irrigated and fallow agricultural fields surrounded by intact and degraded riparian and woodland habitats. Two riverine AAs were evaluated along branches of the Kings River. One of the AAs (R401) is along the Clarks Fork of the Kings River at the southern end of Clark River Ranch. The other AA (R402) is along the northern fork of the Kings River at the northern end of Clark River Ranch.

The two riverine AAs received similar overall scores. Because both forks of the Kings River are bounded by road berms and surrounded by agriculture, which has created narrow buffers, both AAs received moderate scores for the Buffer and Landscape Context Attribute. AA R402 received a lower score than R401 for this attribute because it has a wide gap in the riparian corridor upstream of the AA. Both AAs scored lower on the Hydrology Attribute due to regulated releases of water through dams upstream of the AAs and low entrenchment ratios. Both AAs scored relatively low in Physical Structure because they lacked structural patch richness and topographic complexity. R401 scored relatively low on Biotic Structure due to low horizontal interspersion and vertical biotic structure. R402 received a moderate score due to greater horizontal interspersion and vertical biotic structure.

The stressors influencing the AAs at Clark River Ranch within the Buffer and Landscape Context were the dams upstream within 500 meters and intensive row-crop agriculture and orchards on Clark River Ranch and surrounding properties. Within the Hydrology Attribute, dike/levees and

actively managed hydrology were identified as stressors on both AAs. Within the Physical Structure Attribute, plowing/discing and excessive sediment from the watershed were identified as stressors on both AAs. No stressors within the Biotic Structure Attribute were identified for either AA.

Figure 5-11 shows the average CRAM index score and attribute scores for the two riverine AAs evaluated on the Clark River Ranch property.

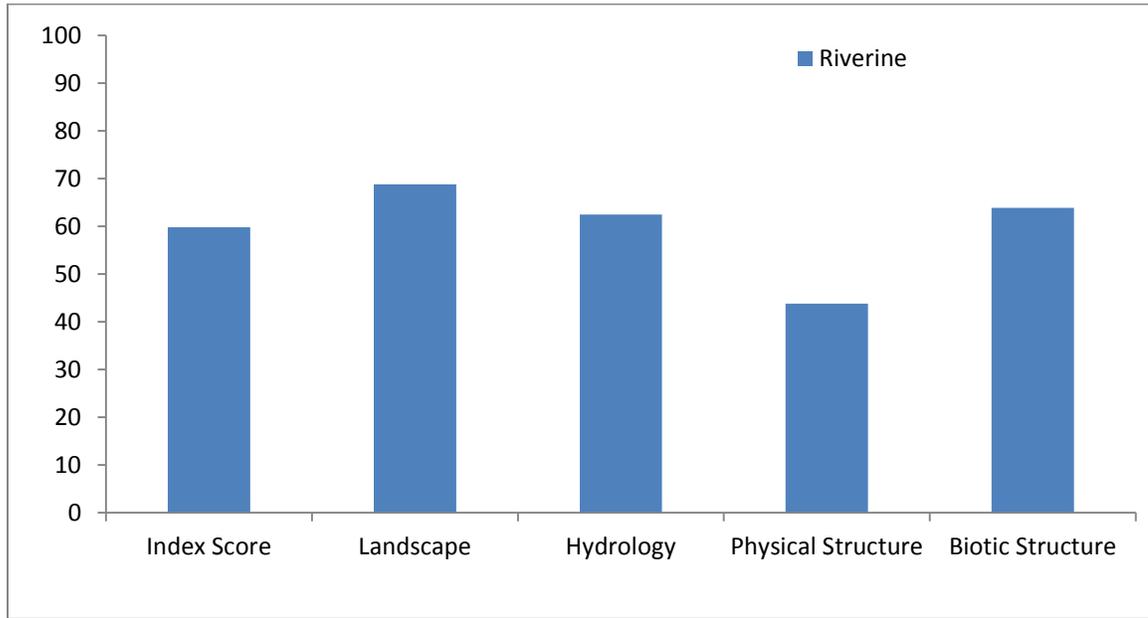


Figure 5-11
 Average CRAM index score and attribute scores for AAs on the Clark River Ranch property

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Section 6.0

Discussion

6.0 Discussion

This section discusses the sampling and methodological considerations in using CRAM for the Fresno to Bakersfield Section of HST and in using CRAM to evaluate watershed condition. This section also provides some discussion on the effects of stressors on CRAM scores and using CRAM to extrapolate existing conditions for all the aquatic features in the study area. A brief summary is also included on how CRAM was used to evaluate the potential mitigation sites.

6.1 Consistency with CRAM Requirements and Implementation Guidelines

A concern that arises in conducting CRAM studies is deviation from the specified technical approaches identified in the CRAM guidance. With the guidance of the CRAM coordinator, Chad Roberts, the field portion of this study was conducted in accordance with published CRAM technical requirements except as indicated below. The results reported in this document stem from a valid application of CRAM.

6.1.1 Sample Frame and Sample Size

A primary concern for this CRAM application arises as a consequence of the distributed nature of wetlands and aquatic areas within the project alignment and the need to ensure an adequate sample frame for the AAs in each module. A second, related concern stems from the size of the CRAM sample (i.e., the numbers of AAs) for each module.

The CRAM manual recommends a process for establishing a project-based sampling protocol to: (1) establish a separate map of the study area showing all of the aquatic features of each wetland type (the *sample frame* for that type); (2) identify possible AAs within each sample frame for the study area; and (3) sample AAs and consider the scores, with sampling continuing until the ranges in Index and Attribute scores are small enough to conclude that the results accurately describe the real variation in condition in each sample frame.

For the Fresno to Bakersfield Section, the sample frames (the set of wetlands of each type from which the sample of AAs is drawn) were determined jointly by (1) the locations of aquatic features of each type within a given distance of the project alignment and (2) the team's permission to access the features. It is an unavoidable consequence of the arrangement of aquatic features that the combination of proximity and permission resulted in a limitation in the locations and numbers of AAs that could be sampled.

The sample frames for aquatic features (Table 5-1) were 8 (combined) for depressional features, 17 (combined) for riverine features, 11 for individual vernal pools, and 6 for vernal pool systems. The project team made an effort to distribute the AAs in each module throughout the project alignment between Fresno and Bakersfield according to the sample frame; that is, to sample the aquatic features where they occurred throughout the study area to ensure that the range of variability in these features was captured in the results.

In general, the locations for depressional sites and riverine sites indicate a broad sample frame within the study area. The CRAM coordinator determined that a relatively small sample size was required for depressional features because the vast majority of depressional features in the project alignment were either (1) irrigation reservoirs related to agricultural operations that exhibited limited variation in site conditions everywhere in the study area, or (2) stormwater retention/detention basins in developed areas. Similarly, many "riverine" sites were ditches and canals associated with agricultural operations and/or flood conveyance, features that exhibit limited variability throughout the project alignment. These agricultural- and urbanization-related

features did not exhibit sufficient variation in condition to warrant large sample sizes, even if the opportunity were presented to sample large numbers of such features. This result is fully consistent with CRAM implementation guidance.

The sample frame for "natural" riverine features in the project alignment was, however, limited by the combination of limited presence in the alignment and lack of access permission. Additional assessments of "natural" riverine features would have been desirable, but opportunities for such assessments did not exist given the exigencies of the project. Nonetheless, the team was able to secure assessment scores for seven natural riverine features from the entire alignment. In the end, the CRAM coordinator judged that the sample size for these features reflected the average condition of such features within the alignment.

The sample frame for vernal pool features (both individual pools and vernal pool systems) in the project alignment was highly constrained geographically; generally these features have been obliterated through much of the alignment by agricultural conversions. Paradoxically, where the features can still be found (e.g., in the Allensworth area) they are relatively common, and an adequate sample size was obtained within the project vicinity.

In general summary, the application of the CRAM methodology to the project was consistent with the recommendations in the CRAM manual for sample frame and sample size.

6.1.2 Methodological Considerations

A minor deviation from then-existing CRAM methodology occurred in conducting two riverine assessments on the Kern River. AAs were established along the southern bank of the Kern River. At the time of the assessments, the depth of water flowing in the river was too deep to be wadable and the riverbed was unstable. Under the direction of the CRAM coordinator, the AA was positioned along one bank and an electronic distance-measuring device was used to measure the bankful width and flood-prone width, the two variables required to assess the "entrenchment ratio" in the riverine module's Hydrological Connectivity metric. This approach was subsequently incorporated into the riverine module, and the approach adopted for this project is now accepted in similar CRAM contexts. No other substantial methodological variations occurred for riverine module applications covered by this report.

The season of applicability for the depressional wetland module is the "growing season" for wetland vegetation, generally considered in CRAM to be March to September in areas not subject to snowmelt. However, even though the Fresno to Bakersfield Section was assessed in September and in March (both within the nominal "growing season"), at the time of the assessments the area already showed signs of severely dry conditions, and "natural" depressional areas (as opposed to irrigation ponds) exhibited reduced vegetative growth that likely affected Biotic Structure Attribute scores. However, this factor (drought during the growing season) is considered to be an element of natural variation within the study area, rather than a variation from CRAM methodology, and no substantial methodological variations occurred for the depressional wetland module applications covered by this report.

The vernal pool assessments reported in this document were conducted in September, which was (and remains) outside the period recommended for vernal pool module assessments (essentially the spring, approximately March to June). While many of the metrics in the vernal pool modules can be assessed outside of the spring season, the presence and dominance of vernal pool-endemic plant species is constrained seasonally. In addition, seasonal drought reduces the percent cover for all vegetation. Both results affect the Biotic Structure Attribute scores in both vernal pool modules. The vegetation conditions in September required that team botanists identify the dried remnants of vernal pool-endemic plants based on prior familiarity with these

pools in wetter seasons. Early vernal pool assessments were used to train other members in the field team in recognizing the remains of endemic species.

This identification of vernal pool endemics on the basis of dried remnants is loosely termed “forensic vernal pool botany” in CRAM contexts, and while it is appropriate to identify the applicability of vernal pool modules, it is not recommended for standard use because evidence exists that this variant in the methodology does not fully identify a complete complement of vernal pool species that would be identified at the appropriate season. This is expected to have occurred within the study area even though the abundance of vernal pool-endemic plant species is lower in the Tulare Lake region than in other parts of the Central Valley.

Therefore, the conclusion should be reached that the application of CRAM to the vernal pools in the study area most likely resulted in identifying fewer vernal pool-endemic plant species than would have been identified with assessments during the spring. Out-of-season assessments may also have resulted in underscoring vegetation mosaic complexity (now termed “Horizontal Interspersion”). Such results would likely be reflected by lower Biotic Structure Attribute scores for vernal pools than would occur with springtime assessments. However, the other aspects of the application of the vernal pool modules were executed according to CRAM guidance, and scores in general are expected to reflect appropriate ranking among the pools assessed. (In addition, it should be noted that the drought conditions in the study area during the winter and spring of 2011–2012 did not result in the development of “normal” vernal pool vegetation in the spring of 2012, and the assessment of vernal pool conditions in the study area would have been affected in any event.)

6.2 Watershed Condition

The arrays of CRAM scores reported in Section 5.0 provide a snapshot of watershed condition in the vicinity of the HST alignment between Fresno and Bakersfield. Table 5-1 presents the relevant CRAM index and attribute scores for features assessed, by feature subtype.

6.2.1 Depressional Sites

Depressional sites identified in the study area were fundamentally of two types. The first type was agricultural irrigation reservoirs. These features yielded very low CRAM scores, which reflects the fact that these are created features that function in conjunction with canals and ditches in rather unnatural “watersheds.” These reservoirs are largely temporary groundwater storage facilities, which function hydrologically as the sources of water (and often as the sources of hydrostatic pressure) for the agricultural irrigation systems of which they are elements; they are highly dynamic, with evidence in some reservoirs of significant fluctuations in water surface elevation over short time periods, and have little vegetation. Fundamentally, they are not part of the remnant watersheds in the study area except to the extent that they provide water that may flow in the canal/ditch systems that still retain remnant “watershed” characteristics (e.g., drainage networks that convey rainfall to a watershed low point, generally the Tulare Lake bed) in the study area. Little condition variation was observed among these features anywhere in the Fresno to Bakersfield Section.

The second type of depressional wetland area identified in the project region was detention/retention basins that function as part of local stormwater management systems. Such features were largely restricted to developed parts of the project alignment. These depressions are typically better vegetated but less hydrologically connected than are the agricultural reservoirs (that is, the primary goal of such features is *not* to release water to regional drainage systems), but they also had low CRAM scores that reflect low importance to study area watersheds.

These two types of depressional wetlands are indicative of study area watersheds that have substantially altered land uses and hydrology. The low CRAM scores indicate that these watershed elements do not have a high condition status and provide few of the functions that would be expected from depressional wetlands in less-altered watersheds.

Natural depressional wetlands in the Fresno to Bakersfield Section are rare, apparently occurring primarily as a consequence of past fragmentation and isolation of more natural aquatic features, although some of the shallow natural wetlands in the Allensworth region may be depressional wetlands and are not uncommon in that context. As indicated by the CRAM scores of two "natural" depressional wetlands near Hanford (apparently relicts of a former riverine feature, probably a distributary of the Kings River), such remnants tend to provide better condition indicators, exhibited by CRAM scores that are significantly higher than those of the created features.

6.2.2 Riverine Sites

The conditions presented by canals and ditches are assessed in CRAM using the riverine module, which allows a comparison of conditions in such features with respect to remnant natural riverine features in the study area. The canals and ditches assessed throughout the Fresno to Bakersfield Section (with two exceptions; see below) yielded scores that were substantially (approximately 20 CRAM points) lower than the scores for remnant natural riverine systems in the project vicinity (which included the channels of the Kern River, Poso Creek, Cross Creek, and the Kings River). The CRAM scores for the canals and ditches assessed in the study area indicate that these surface water features also do not provide many of the desired conditions found in natural riverine systems for study area watersheds.

Functionally, the canals and ditches form an alternative hydrological network in lieu of the more natural drainage system that existed before the commitment of virtually all of the study area to agriculture. In a large sense the conversion has included even the remnant natural water features. All of the natural channels assessed in this study were clearly used as conveyances for artificial (mostly irrigation) water flow, as well as having more natural functions such as conveying runoff. At the same time, many of the larger canals in the study area showed indications that they function for conveying stormwater as well as for delivering irrigation flows.

The low condition scores for canals and ditches arise largely because of the artificiality of the constructed features in a context of highly modified watersheds. Two canals in Colonel Allensworth State Historic Park exhibited substantially higher CRAM scores than did the majority of artificial features in the Fresno to Bakersfield Section as a consequence of less-altered hydrological conditions in the State Historic Park. That is, these sites indicate that canals and ditches elsewhere in the study area provide low condition scores because of the regional alteration of watershed patterns, not simply because they are canals and ditches.

While the condition scores for the remnant natural features in the project alignment are higher than those of most canals and ditches, it is noteworthy that even the scores of the natural riverine features are not high in comparison with scores from riverine features in less-altered parts of California (based on CRAM scores reviewed at www.cramwetlands.org; see Section 6.4 for a description of the internal standard in CRAM modules that enables inter-regional comparisons among wetlands in each type). The scores indicate that even the least-altered riverine features in the study area provide fewer benefits to aquatic systems than riverine features in less-disturbed parts of California.

6.2.3 Vernal Pool Sites

The CRAM scores for vernal pool wetlands are the highest scores for aquatic features within the Fresno to Bakersfield Section. This result is fully consistent with the occurrence of these wetlands in the least-fragmented remnant watersheds in the study area. The scores suggest that the watersheds in the Allensworth region continue to provide higher levels of various functions than do most of the altered watersheds elsewhere in the study area. The CRAM team did not locate aquatic features identifiable as vernal pools in parts of the project alignments that were not in the Allensworth region (vernal pool features nevertheless may exist elsewhere which were not identified as vernal pools). The team generally concluded that it was unreasonable to conclude that vernal pools were not historically widespread in the Tulare Lake basin, and that the scarcity of such features today can only be identified as a consequence of their elimination as part of the conversion of the regional landscape to agriculture.

The identified condition scores for vernal pool systems are uniformly higher than comparable scores for individual vernal pools. The CRAM team is uncertain why this pattern exists, given that individual pools were intermixed with vernal pool systems where vernal pools occurred.

The vernal pools in the Fresno to Bakersfield study area are largely lacking in structural patch richness and vernal pool endemic plant species, two metrics that play large roles in calculating the attribute scores for Physical Structure and Biotic Structure, respectively. While these metrics capture conditions of vernal pools in California, they do not seem to account for the unique functions of vernal pools in the study area, which are representative of vernal pools in this region of the Central Valley. Low scores for Physical and Biotic Structure may be indicative of the limitations of CRAM for assessing unique wetland communities.

6.2.4 Watershed Condition Summary from CRAM Results

While the CRAM assessments were confined to the vicinities of the HST project elements in the Fresno to Bakersfield Section, the resulting condition scores are sufficient to support the following general conclusions about the watersheds in which these elements occur.

- Prior land use changes in the study area (largely the conversion of the regional landscape for agricultural purposes) have altered virtually all of the aquatic area conditions that are assessed by CRAM. The altered conditions are evident in the low study area scores for depressional and riverine features in general, and are particularly evident for the constructed features (ditches, canals, and reservoirs) that currently represent dominant hydrological elements in the project vicinity.
- Remnant "natural" features in the study area (a number of riverine features, a small number of altered depressional features, and a geographically limited sample of relatively intact vernal pools) generally received higher condition scores than did the constructed features. The remnant features provide a set of core elements that may be used for enhancing wetland conditions in the project vicinity, even though there is clear evidence that many of the remnant features have been co-opted to serve as elements in the altered watershed hydrology.
- The absence of vernal pool features in most of the project alignment is incompatible with expected conditions in unaltered watersheds in the Central Valley, including the Tulare Lake basin, supporting the conclusion that the extent of watershed alteration in the project vicinity has been extensive.

- Given the extent of the prior watershed alterations and the associated reductions in condition scores, it is not clear whether the pre-agricultural configuration and aquatic conditions provided by study area watersheds can be characterized at the present time.

6.3 Effect of Stressors on CRAM Scores

In addition to calculating an overall condition score and attribute scores, CRAM includes a stressor checklist. A stressor is defined in the CRAM User's Manual as "an anthropogenic perturbation within a wetland or its setting that is likely to negatively impact the functional capacity of a CRAM Assessment Area" (CWMW 2012). The stressor checklist is used to account for low CRAM scores by identifying specific impacts on the landscape, hydrology, physical, or biotic structure of an AA. In some cases, a single stressor may be the primary cause of low-scoring conditions, though conditions are usually caused by interactions among multiple stressors (EPA 2002).

No strong correlation of CRAM scores and the number of stressors was found among the AAs assessed in the Fresno to Bakersfield Section. A weak correlation (-0.15) supports the assumption that AAs with lower CRAM scores are subjected to more stressors, although many low-scoring AAs had few stressors.

The CRAM team concluded that the low-scoring AAs in man-made features (canals, ditches, agricultural reservoirs, and detention basins) are a direct result of anthropogenic influences (i.e., these man-made features are the stressors for natural watershed conditions in the project area). However, when CRAM scores and the numbers of stressors for each AA are compared for natural features only, the correlation remains weak. The CRAM team concluded that the effects of stressors throughout the project area have overwhelmed the potential relationships among stressors and natural aquatic systems, as a consequence of the regional conversion of the land use pattern to one completely dominated by agriculture with few remnants of natural hydrological/wetland systems. The most common stressors (presence of dike/levee, transportation corridor, adjacent orchard/nursery) are present throughout the Fresno to Bakersfield Section and affect all types of aquatic features to the extent that statistical relationships among stressors and AA condition scores are not observable.

6.4 Existing Condition Extrapolation

CRAM data reflect instantaneous condition snapshots of the assessed aquatic features, although the condition data identified in CRAM assessments represent an integration of the landscape, hydrological, physical, and biological factors affecting these features over time. To the extent that the underlying physical, hydrological, biotic, and land use conditions for the assessed features are represented elsewhere in the watersheds that contain the project elements, the CRAM scores may be used to infer condition (and functions provided) in other parts of those watersheds. However, making such extrapolations is not included within the CRAM methodology per se, and care is warranted in verifying the reach of the factors underlying CRAM scores if the object is to extrapolate condition scores from a sampled area to a larger area.

For example, in the case of the HST project in the Fresno to Bakersfield Section, the observed modifications to regional hydrology cover an enormous area outside of the immediate project vicinity, extending throughout the Tulare Lake basin from near Fresno to the area south of Bakersfield, and from the lower Sierra Nevada foothills to the Tulare Lake bed. Hydrological processes are the most significant of the factors determining condition scores, and it is reasonable to extrapolate condition scores within areas sharing similar hydrology. It is not unreasonable to consider that the CRAM condition data resulting from this work may apply in this region of altered hydrology.

Similarly, the regional land use pattern throughout the Tulare Lake basin very much resembles the agriculture-dominated pattern within which the CRAM data reported herein were collected. Land use patterns (through the Landscape and Buffer Attribute) are significant factors in determining condition scores, and are the primary sources of stressors that alter conditions in wetlands, and it is reasonable to extrapolate condition scores within areas exhibiting a similar, continuous land use pattern. It is not unreasonable to consider that the CRAM data from this work may be similarly applicable in agriculture-dominated landscape areas elsewhere.

Notwithstanding considerations of variations in regional conditions, the CRAM data reported in this report do reflect relative rankings among the aquatic features within each wetland type, both inside the region and across regions. As a general rule of practice, the CRAM methodology is applicable to all aquatic features within each wetland type (e.g., riverine wetlands, vernal pools, or depressional wetlands) throughout the state, and the relative rankings of sampled sites everywhere can be compared to one another. CRAM includes an "internal scale" comparing the condition of an aquatic feature at any site to the same "ideal" wetland for the type. This internal standard is intended to account for the regional and site-specific variability across each wetland type throughout the state, and CRAM scores are intended to provide relative rankings among the metrics, attributes, and index scores in proportion to the degree to which each site provides the conditions in the "ideal" model for that type. Hence riverine sites (for example) in the Fresno to Bakersfield Section that demonstrate lower condition scores than riverine features in northwestern California are considered to provide fewer riverine benefits in the same ratios as the index, attribute, and metric scores.

Because of the internal CRAM standard, the condition data for a feature of a given type (e.g., a vernal pool) near one project element can be compared directly to the condition data for another feature of the same type near a different element. This means that CRAM assessment results are directly applicable for comparing the conditions of similar elements across alternatives. The relative similarity of the important geological, ecological, and land use conditions throughout the Fresno to Bakersfield Section merely reinforce the conclusion that differences in CRAM scores among alternatives reflect actual differences among the sites. Consequently, these data are applicable in considering the relative effects of project alternative elements on these features; in other words, in identifying the Least Environmentally Damaging Practicable Alternative (LEDPA).

6.5 Using CRAM for Evaluating Existing Conditions at Potential Mitigation Sites

Compensatory mitigation for adverse impacts on aquatic resources will be determined in consultation with the USACE, in part through the assessment of aquatic resource conditions (including functions and values) that would be lost or impaired through construction and operation of the Fresno to Bakersfield Section of the HST System. Compensatory mitigation will preserve, create, and/or enhance aquatic resource conditions, functions, values, and services.

The USACE recently released guidance on the method used to determine mitigation ratios for different mitigation scenarios. This guidance is published in the *Standard Operating Procedure for Determination of Mitigation Ratios* (USACE 2012). Under the guidance, impact areas and mitigation sites are compared using CRAM evaluations/or other qualitative methods. Numerical or categorical values are assigned to the results of these evaluations and are used to calculate the required mitigation ratio. CRAM data will be key in determining the appropriate amounts of compensatory mitigation required to replace or compensate for the loss of wetlands (e.g., an impact on a wetland feature with a high CRAM index score would require a higher mitigation ratio to compensate for unavoidable impacts on the wetland feature).

The AAs evaluated at the mitigation sites are representative of the aquatic features present on the potential mitigation properties, in terms of both wetland type and condition. CRAM can be used to infer relative differences in wetland condition among sites and in this capacity can aid decisions about how to apply mitigation requirements to the potential mitigation sites. For example, the CRAM data collected and presented in this report can be used to determine which assessment areas could benefit from restoration or enhancement and which are suitable for preservation.

In general, potential mitigation sites with AAs receiving CRAM index scores >70 are suitable for preservation, sites with AAs scoring between 25 and 70 are suitable for enhancement and or re-establishment, and sites with no aquatic resources may be suitable for creation. Based on the wetland delineation and CRAM assessments conducted on these properties, the Buena Vista Dairy, Yang, Staffel, and Davis properties, when examined together, have a significant area of vernal pools that is suitable for preservation. These features are ideal candidates for preservation because they are in good condition and face manageable stressors. In addition to vernal pools, the Buena Vista Dairy property also features depressional wetlands in good condition that are therefore suitable for preservation. The Staffel, Davis, and Valadez properties feature depressional wetlands that have potential for enhancement because they have lower CRAM scores. Likewise, the riverine features on the Te Velde and Clark River Ranch properties have potential for enhancement based upon lower index scores.

Section 7.0

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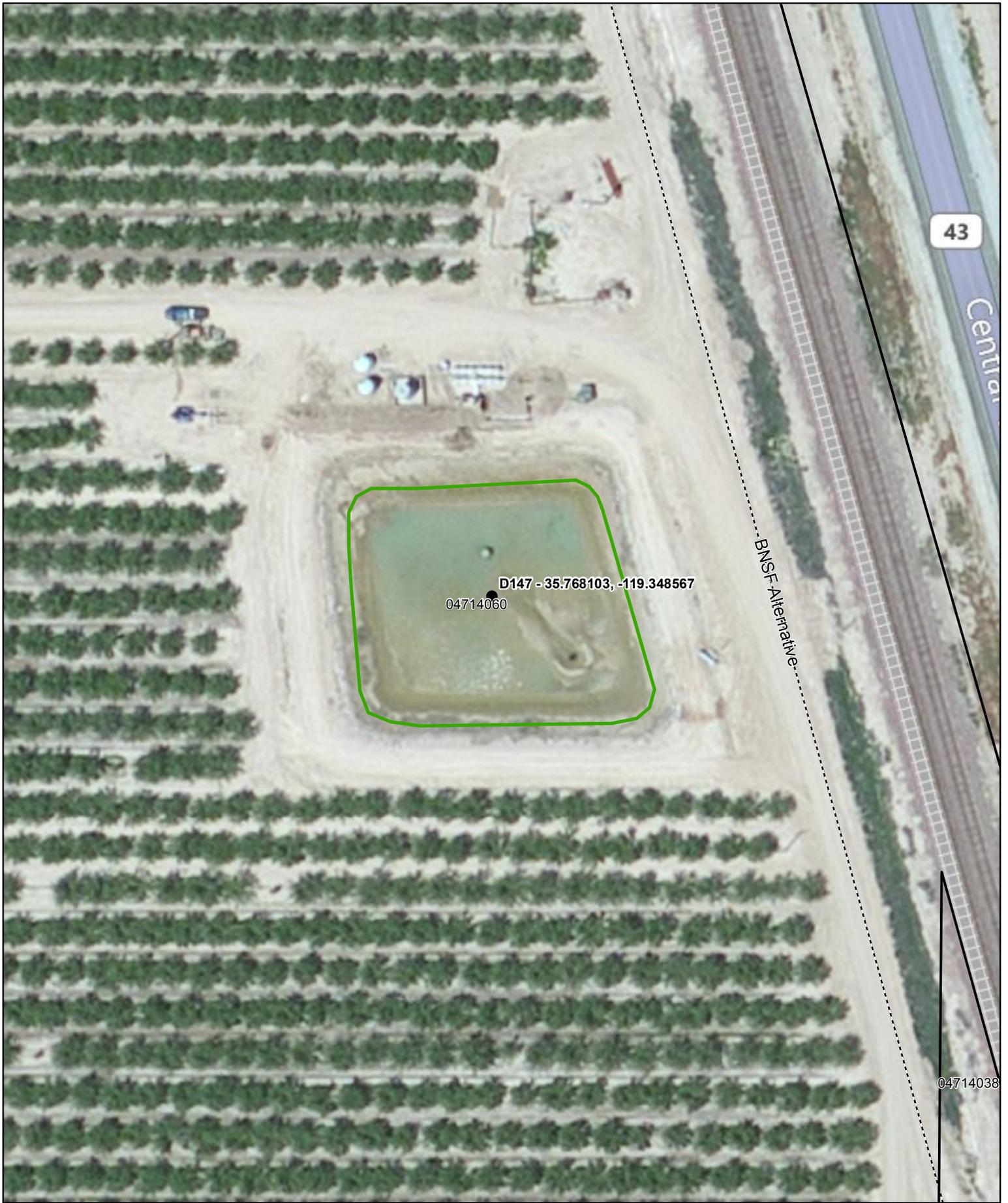
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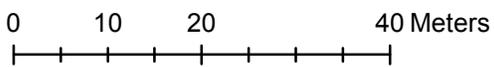
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Appendix A

Maps of Assessment Areas



Assessment area: D147



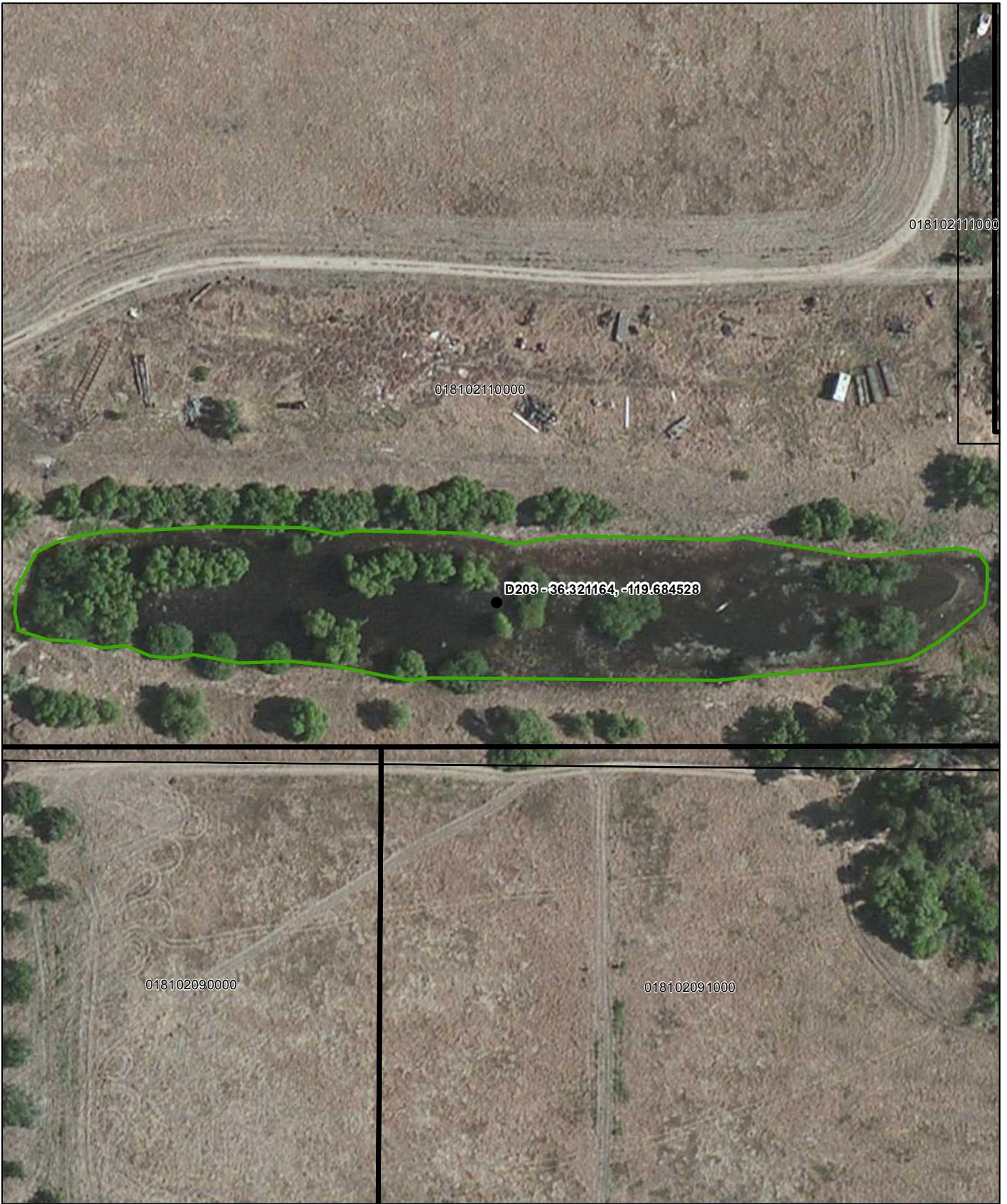
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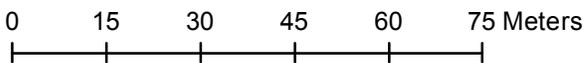
CRAM Assessment Area

- Depressional (D)
- Riverine (R)
- Vernal Pool (V)
- Vernal Pool System (VS)

- Assessment area centroid
- Alignment alternative
- Parcels



Assessment area: D203



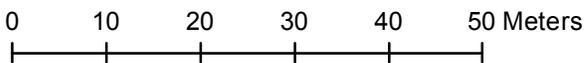
1 inch equals 30 meters



- | | |
|---|----------------------------|
| CRAM Assessment Area | ● Assessment area centroid |
| Depressional (D) | ⋯ Alignment alternatives |
| Lacustrine (L) | ▭ Parcel |
| Riverine (R) | ▭ Parcel PTE = Yes |



Assessment area: D204



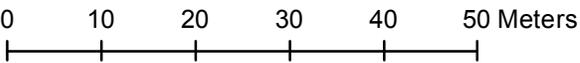
1 inch equals 20 meters



- | | |
|---|---|
| CRAM Assessment Area | ● Assessment area centroid |
| Depressional (D) | ----- Alignment alternatives |
| Lacustrine (L) | Parcel |
| Riverine (R) | Parcel PTE = Yes |



Assessment area: D205



1 inch equals 20 meters



- CRAM Assessment Area**
- Depressional (D)
 - Lacustrine (L)
 - Riverine (R)
 - Parcel
 - Parcel PTE = Yes
 - Alignment alternatives
 - Assessment area centroid



Assessment area: D206

0 10 20 30 40 50 Meters

1 inch equals 20 meters

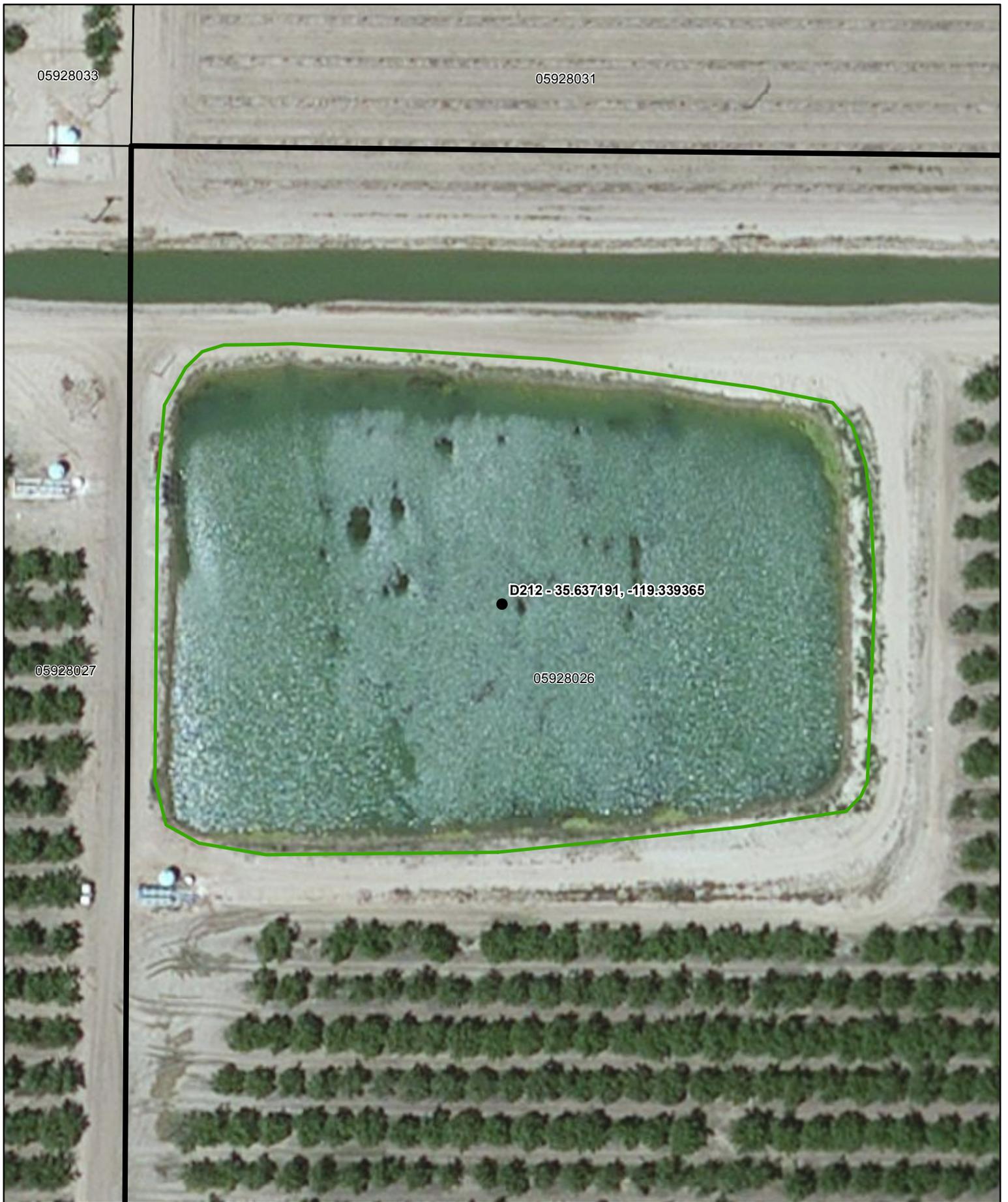


CRAM Assessment Area

- Depressional (D)
- Lacustrine (L)
- Riverine (R)

● Assessment area centroid

- ⋯ Alignment alternatives
- ▭ Parcel
- ▭ Parcel PTE = Yes



Assessment area: D212

0 10 20 30 40 50 Meters

1 inch equals 20 meters



- | | |
|--|--|
| CRAM Assessment Area | ● Assessment area centroid |
|  Depressional (D) | ⋯ Alignment alternatives |
|  Lacustrine (L) |  Parcel PTE = Yes |
|  Riverine (R) | |



Assessment area: D213

0 10 20 30 40 50 Meters

1 inch equals 20 meters



- | | |
|--|--|
| CRAM Assessment Area | ● Assessment area centroid |
|  Depressional (D) | ⋯ Alignment alternatives |
|  Lacustrine (L) |  Parcel PTE = Yes |
|  Riverine (R) | |



Assessment area: D214

0 10 20 30 40 50 Meters

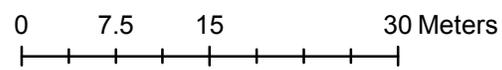
1 inch equals 20 meters



- | | |
|---|---|
| CRAM Assessment Area | ● Assessment area centroid |
| Depressional (D) | ⋯ Alignment alternatives |
| Lacustrine (L) | Parcel PTE = Yes |
| Riverine (R) | |



Assessment area: R8



1 inch equals 15 meters



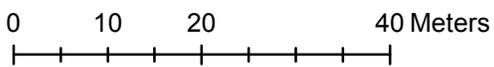
CRAM Assessment Area

- Depressional (D)
- Riverine (R)
- Vernal Pool (V)
- Vernal Pool System (VS)

- Assessment area centroid
- Alignment alternative
- Parcels



Assessment area: R63A



1 inch equals 20 meters



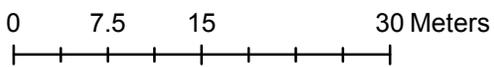
CRAM Assessment Area

- Depressional (D)
- Riverine (R)
- Vernal Pool (V)
- Vernal Pool System (VS)

- Assessment area centroid
- Alignment alternative
- Parcels



Assessment area: R66



1 inch equals 15 meters



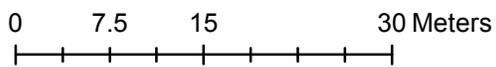
CRAM Assessment Area

- Depressional (D)
- Riverine (R)
- Vernal Pool (V)
- Vernal Pool System (VS)

- Assessment area centroid
- Alignment alternative
- Parcels



Assessment area: R71A



1 inch equals 15 meters



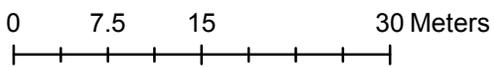
CRAM Assessment Area

- Depressional (D)
- Riverine (R)
- Vernal Pool (V)
- Vernal Pool System (VS)

- Assessment area centroid
- Alignment alternative
- Parcels



Assessment area: R146



1 inch equals 15 meters



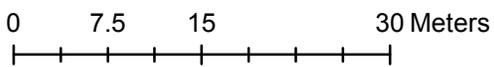
CRAM Assessment Area

- Depressional (D)
- Riverine (R)
- Vernal Pool (V)
- Vernal Pool System (VS)

- Assessment area centroid
- Alignment alternative
- Parcels



Assessment area: R149



1 inch equals 15 meters



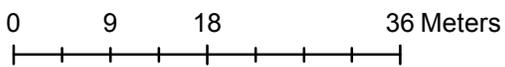
CRAM Assessment Area

-  Depressional (D)
-  Riverine (R)
-  Vernal Pool (V)
-  Vernal Pool System (VS)

-  Assessment area centroid
-  Alignment alternative
-  Parcels



Assessment area: R150



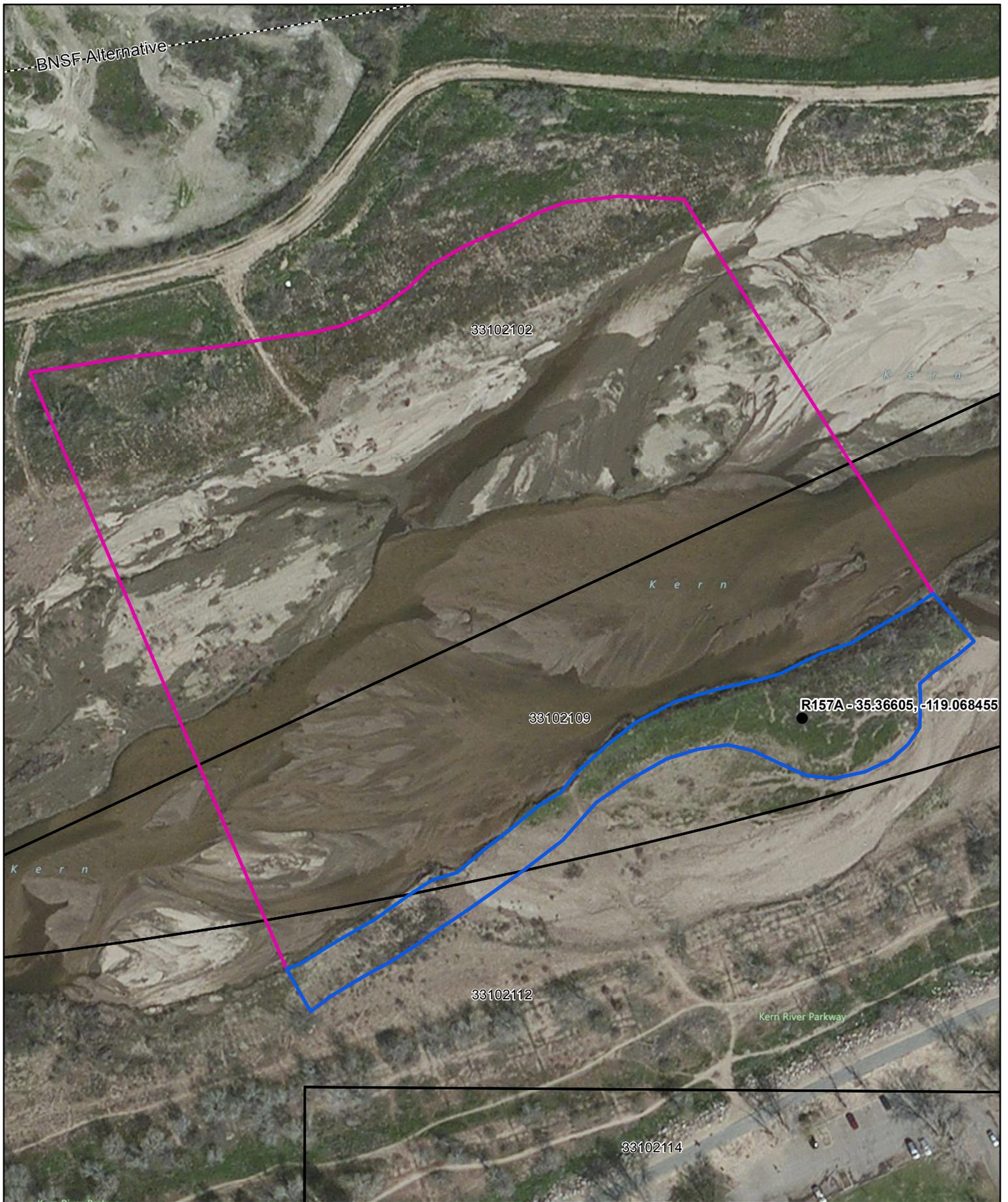
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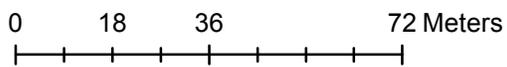
CRAM Assessment Area

- Depressional (D)
- Riverine (R)
- Vernal Pool (V)
- Vernal Pool System (VS)

- Assessment area centroid
- Alignment alternative
- Parcels



Assessment area: R157A



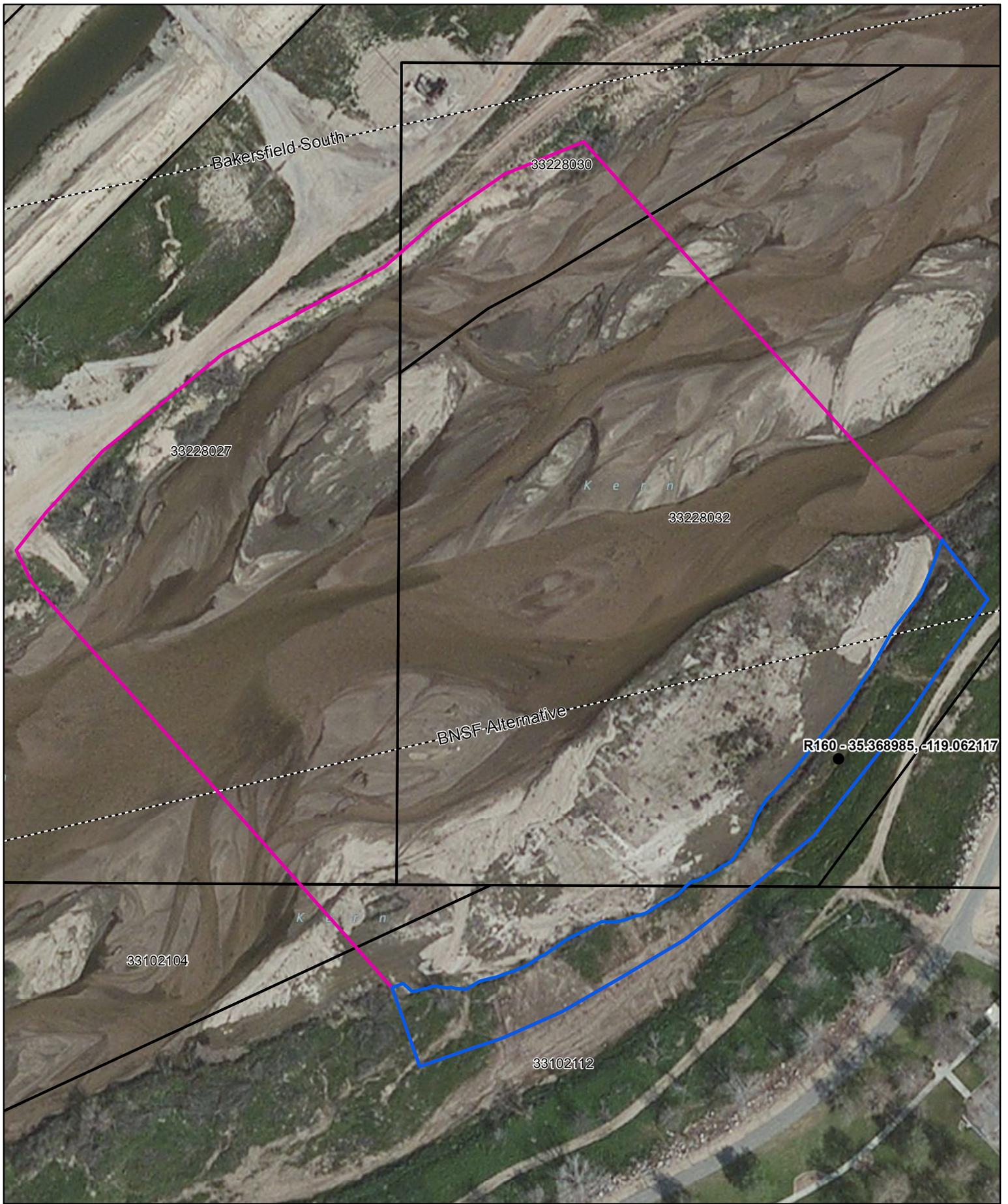
1 inch equals 36 meters



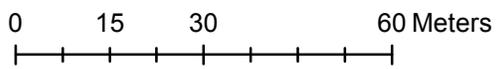
CRAM Assessment Area

- Depressional (D)
- Riverine (R)
- Vernal Pool (V)
- Vernal Pool System (VS)

- Assessment area centroid
- Alignment alternative
- CRAM Associated Area
- Parcels



Assessment area: R160



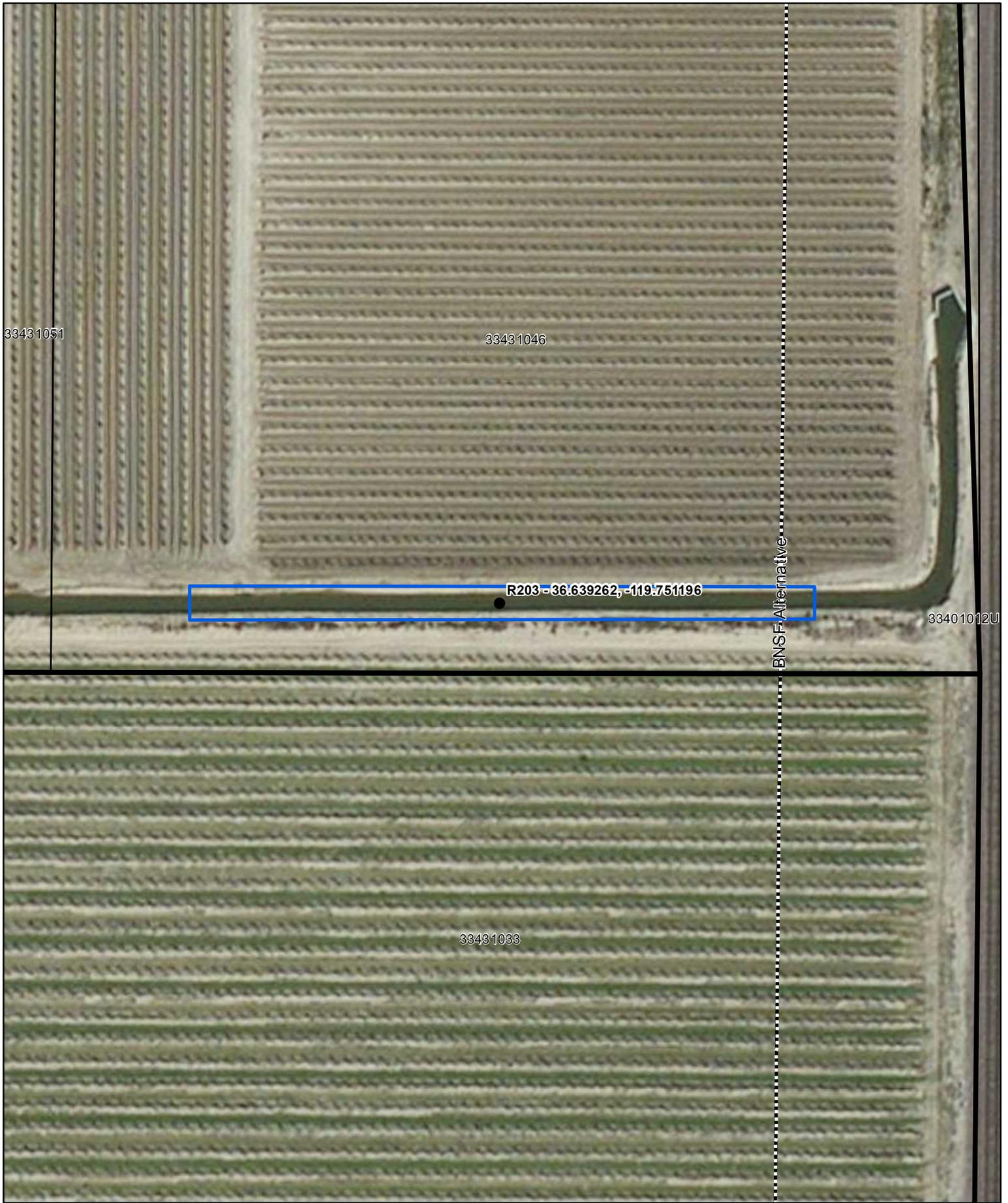
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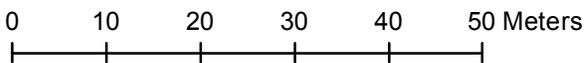
CRAM Assessment Area

- Depressional (D)
- Riverine (R)
- Vernal Pool (V)
- Vernal Pool System (VS)

- Assessment area centroid
- Alignment alternative
- CRAM Associated Area
- Parcels



Assessment area: R203



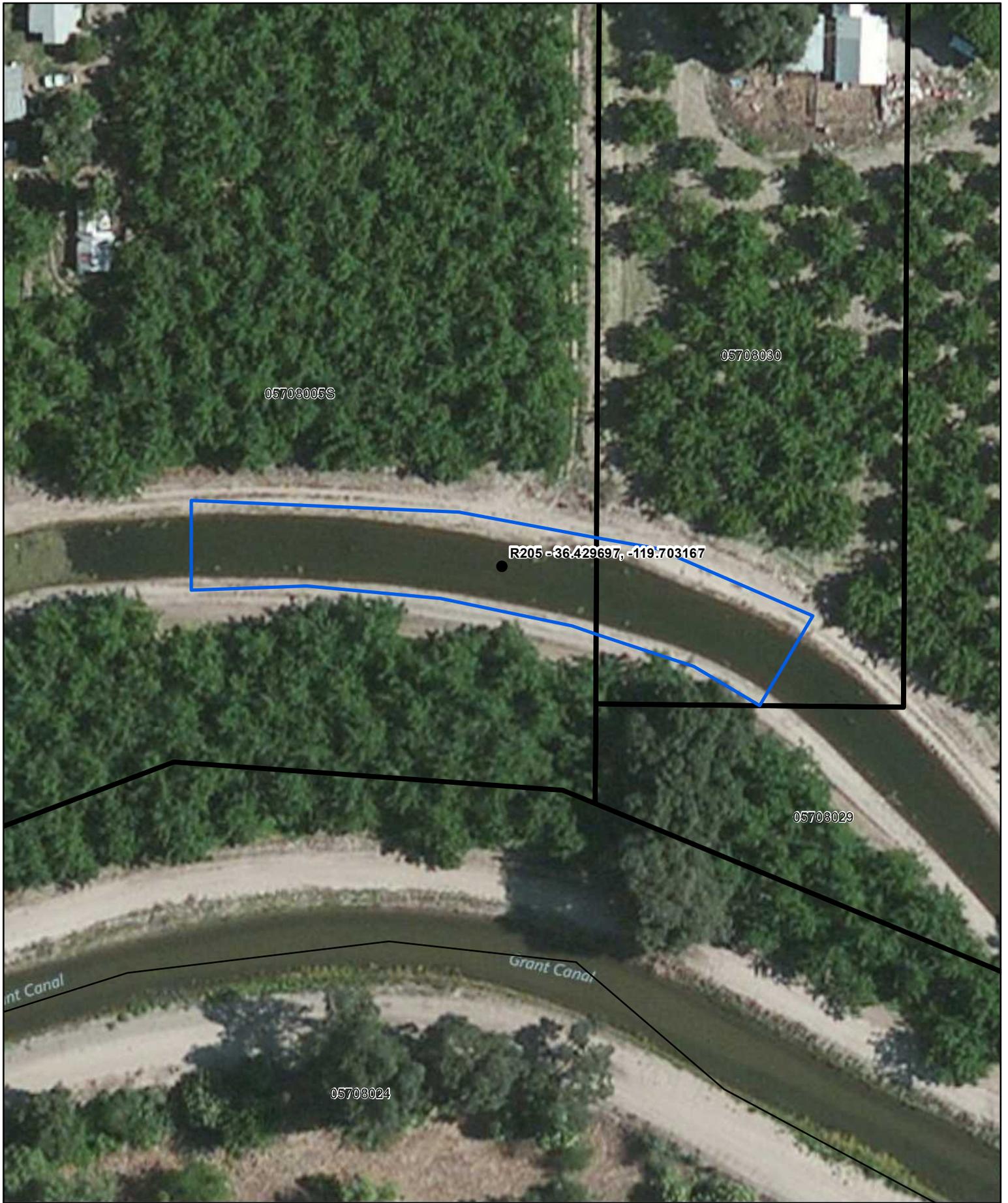
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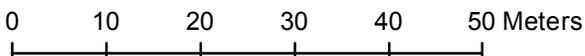
CRAM Assessment Area

- Depressional (D)
- Lacustrine (L)
- Riverine (R)

- Assessment area centroid
- Alignment alternatives
- Parcel
- Parcel PTE = Yes



Assessment area: R205



1 inch equals 20 meters



CRAM Assessment Area

Depressional (D)

Lacustrine (L)

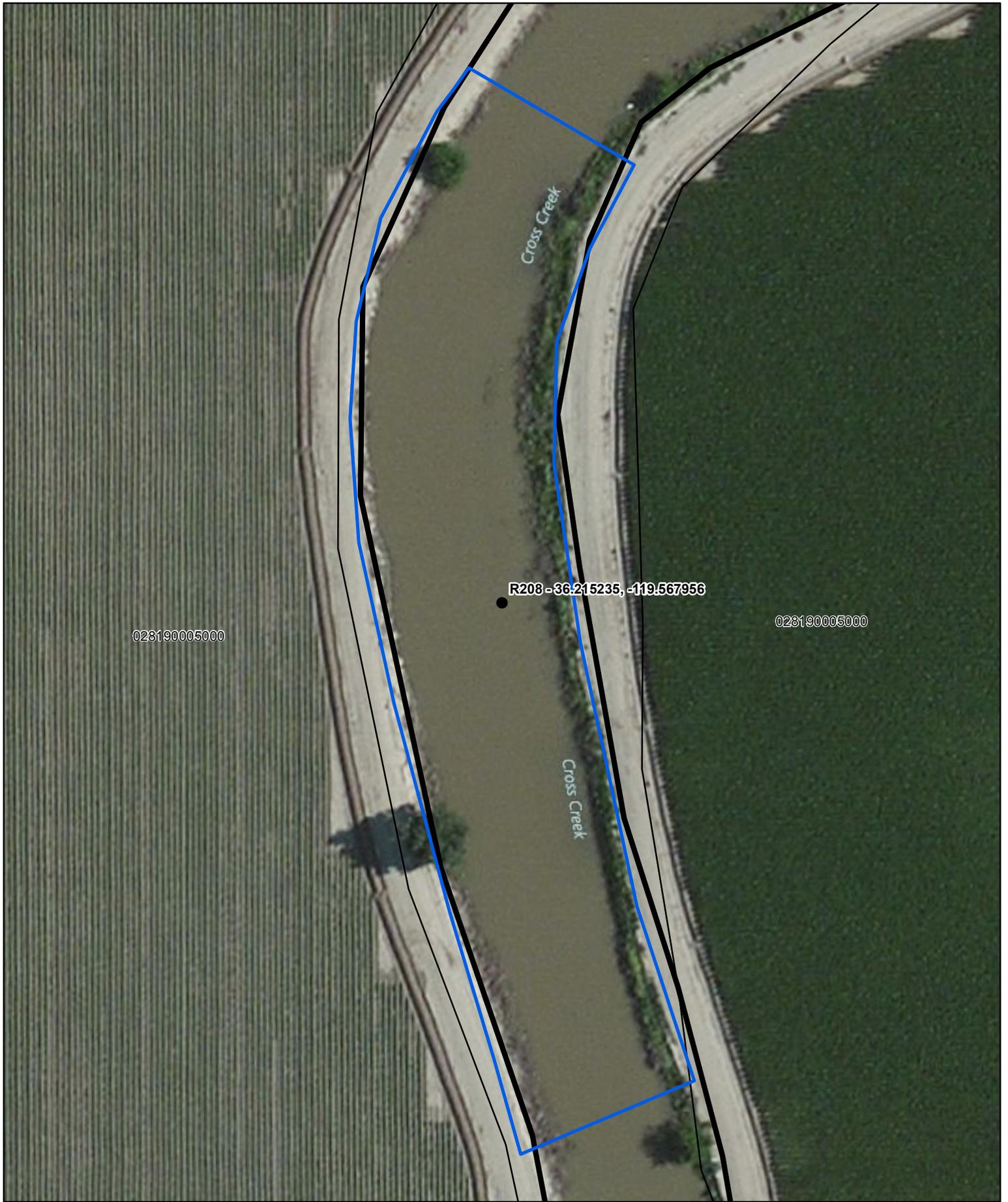
Riverine (R)

Assessment area centroid

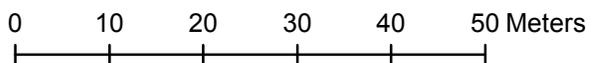
Alignment alternatives

Parcel

Parcel PTE = Yes



Assessment area: R208



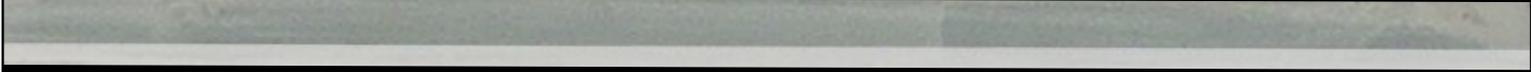
1 inch equals 20 meters



- | | |
|---|---|
| CRAM Assessment Area | ● Assessment area centroid |
| Depressional (D) | ⋯ Alignment alternatives |
| Lacustrine (L) | Parcel PTE = Yes |
| Riverine (R) | |



028290017000



R209 - 36.137778, -119.592378



044030038000

Assessment area: R209

0 10 20 30 40 50 Meters

1 inch equals 25 meters



CRAM Assessment Area

 Depressional (D)

 Lacustrine (L)

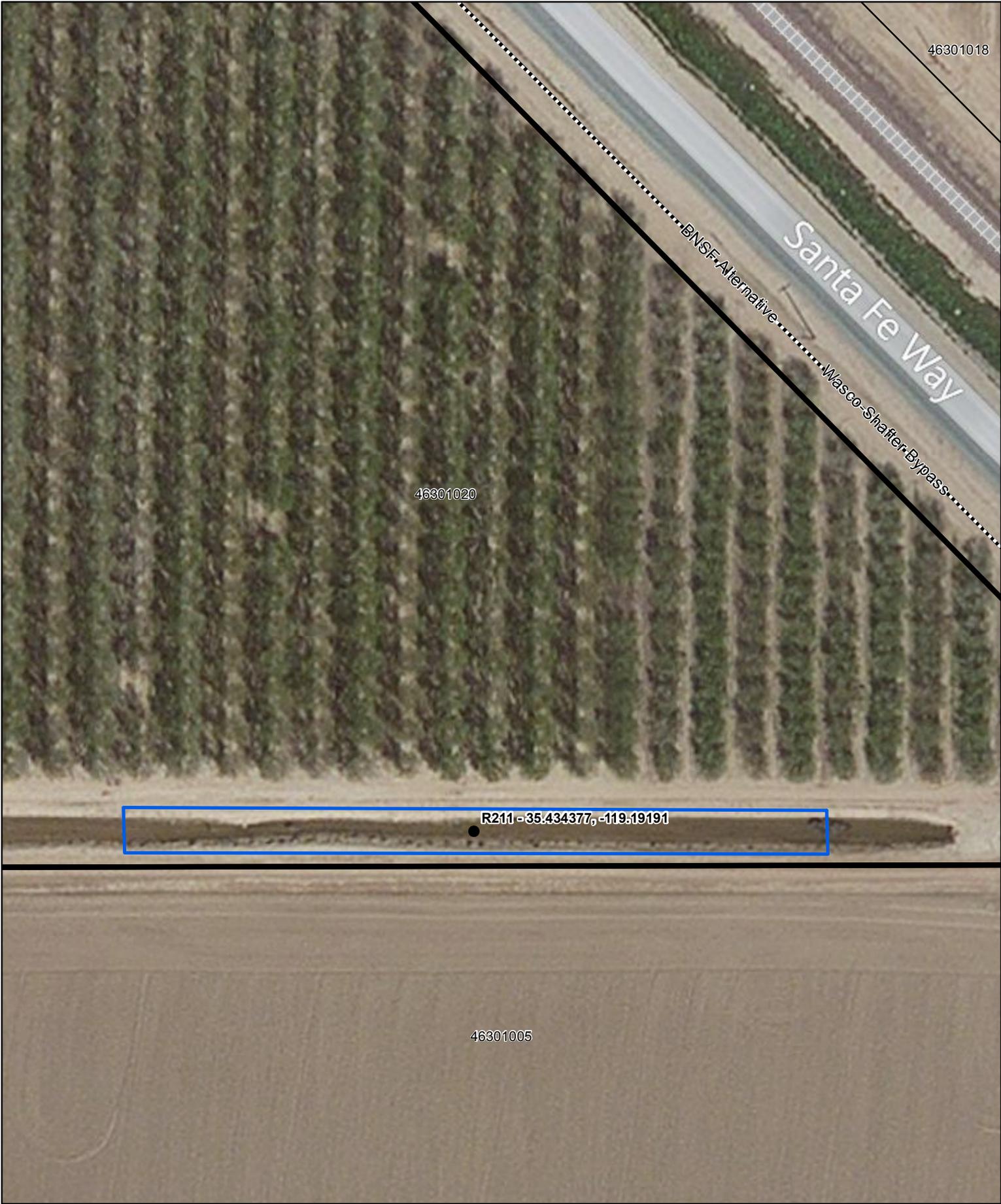
 Riverine (R)

 Assessment area centroid

 Alignment alternatives

 Parcel

 Parcel PTE = Yes



Assessment area: R211

0 10 20 30 40 50 Meters

1 inch equals 20 meters

CRAM Assessment Area

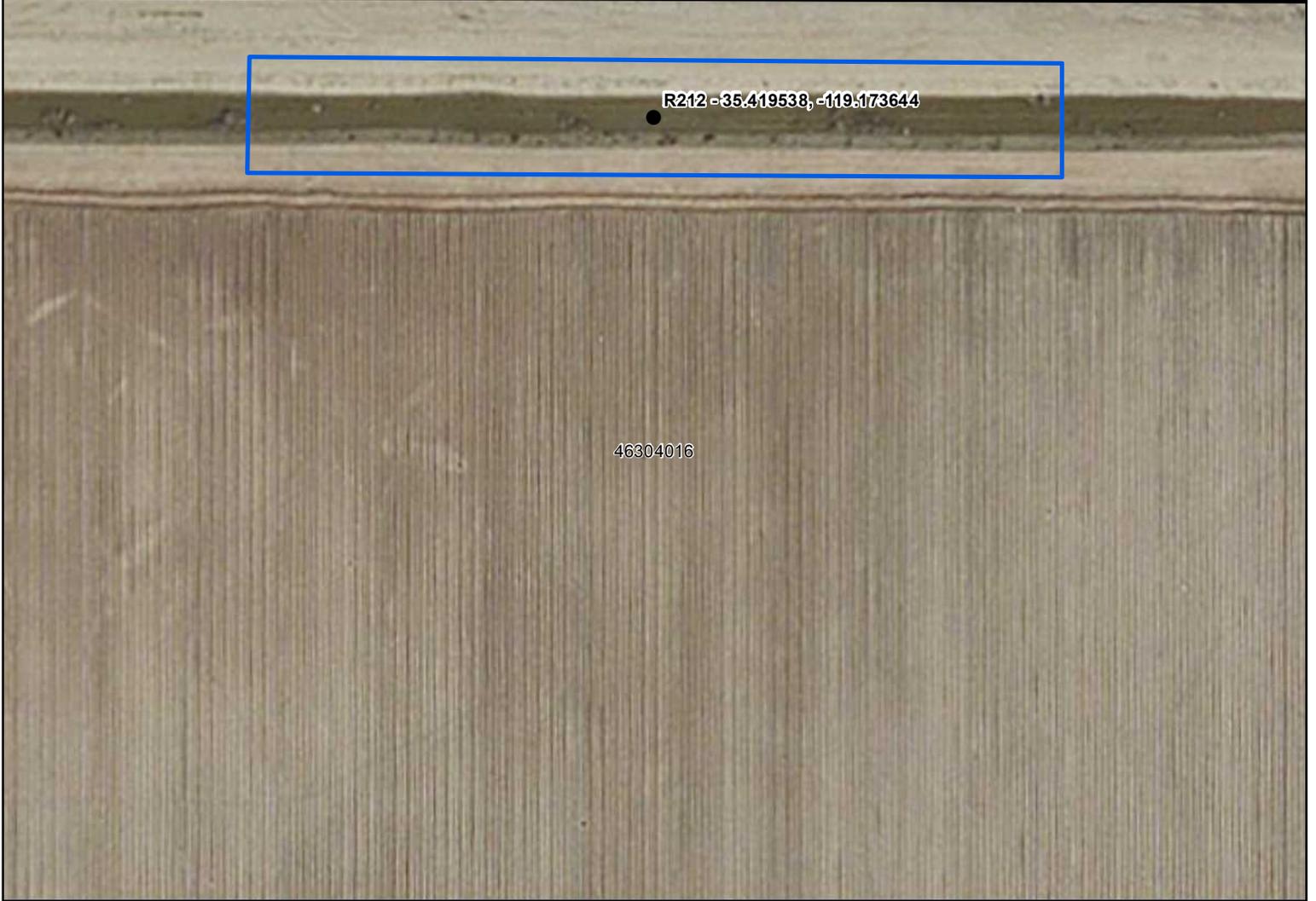
- Depressional (D)
- Lacustrine (L)
- Riverine (R)

● Assessment area centroid

⋯ Alignment alternatives

▭ Parcel

▭ Parcel PTE = Yes



Assessment area: R212



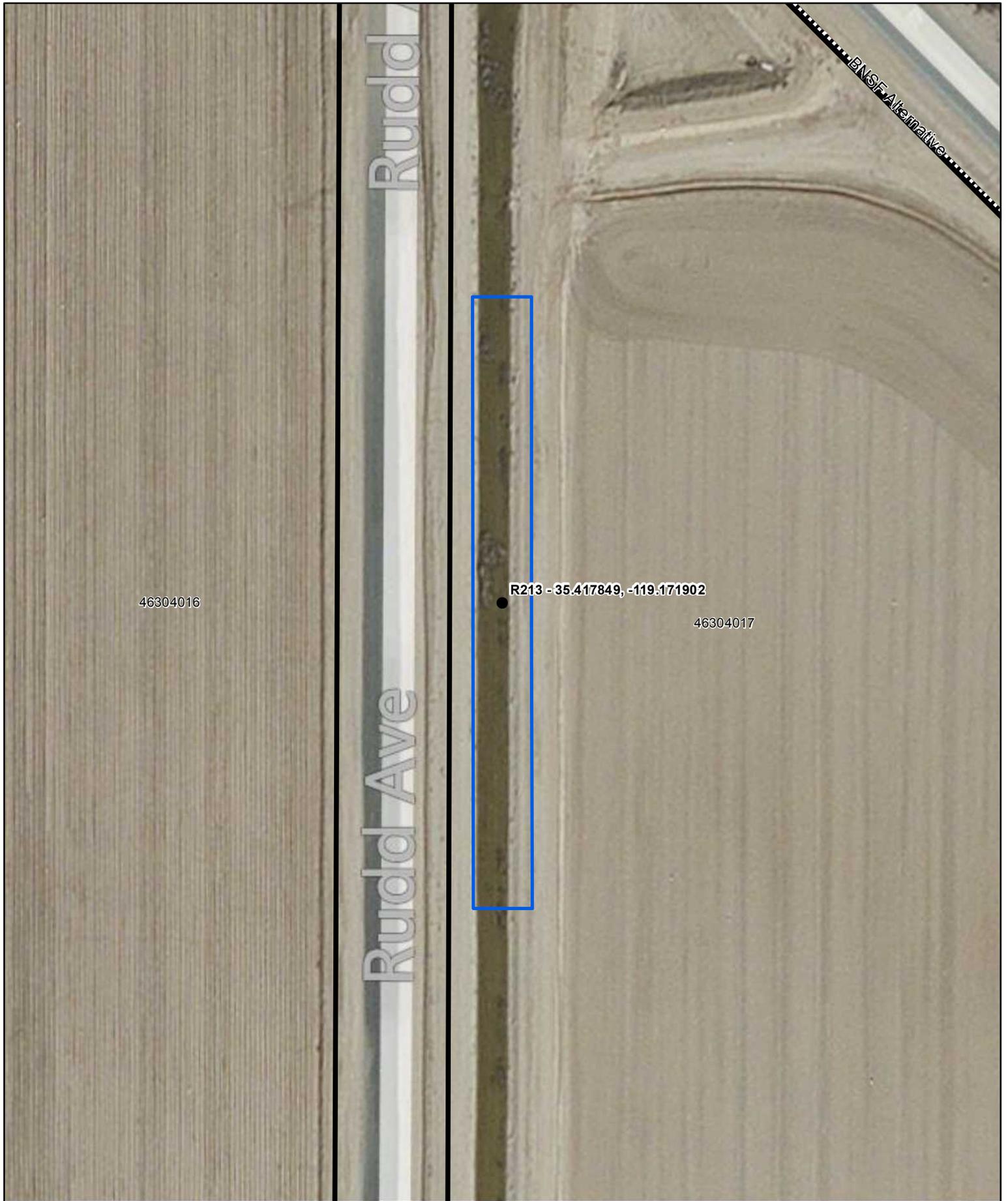
1 inch equals 20 meters



CRAM Assessment Area

- Depressional (D)
- Lacustrine (L)
- Riverine (R)

- Assessment area centroid
- Alignment alternatives
- Parcel
- Parcel PTE = Yes



46304016

Rudd

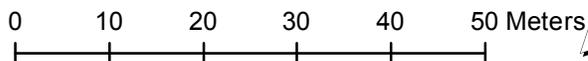
Rudd Ave

BNSF Alternative

R213 - 35.417849, -119.171902

46304017

Assessment area: R213



1 inch equals 20 meters



CRAM Assessment Area

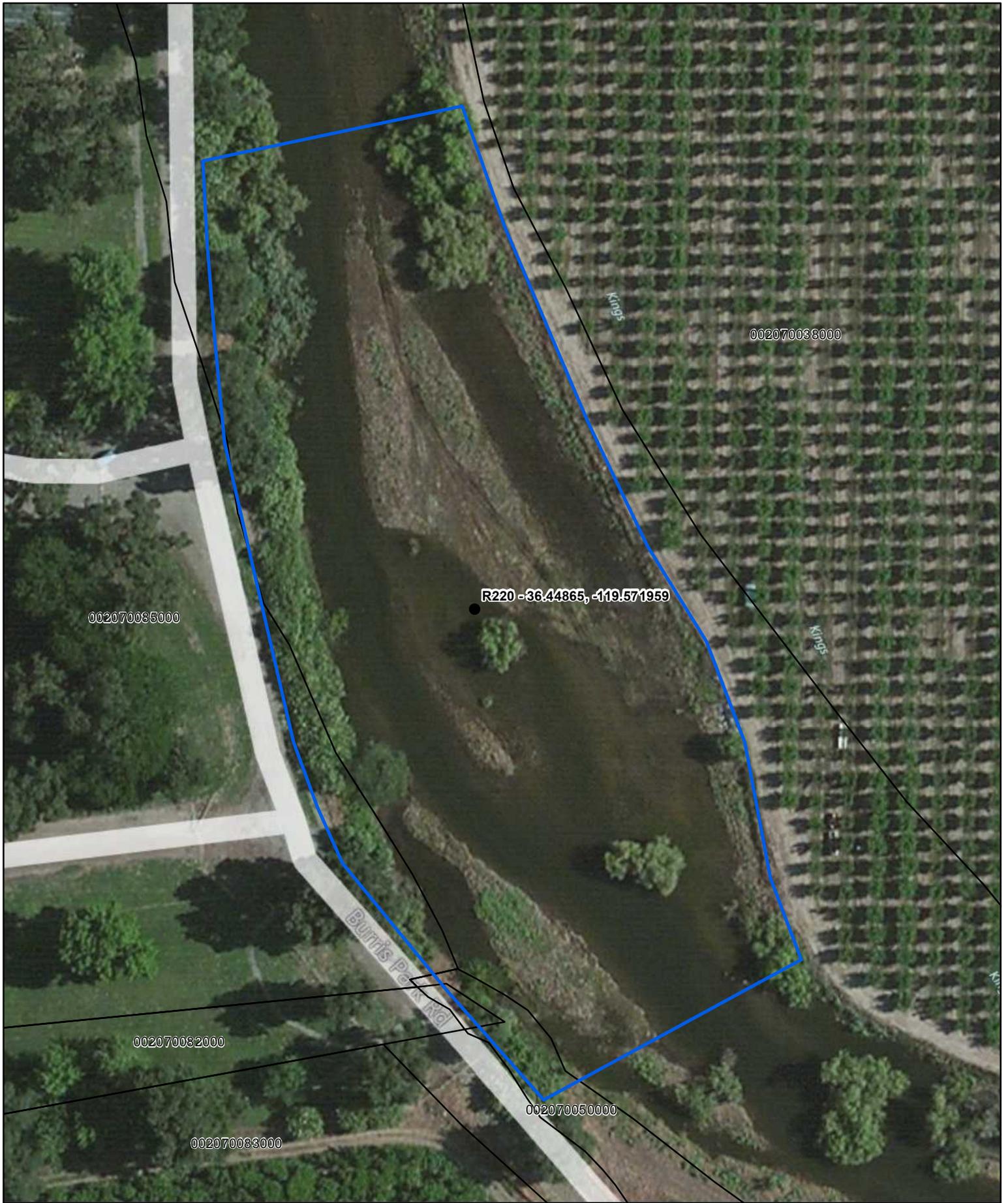
- Depressional (D)
- Lacustrine (L)
- Riverine (R)

● Assessment area centroid

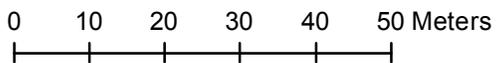
----- Alignment alternatives

▭ Parcel

▭ Parcel PTE = Yes



Assessment area: R220



1 inch equals 25 meters



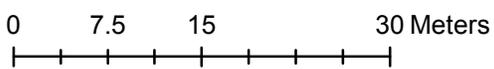
CRAM Assessment Area

- Depressional (D)
- Lacustrine (L)
- Riverine (R)

- Assessment area centroid
- Alignment alternatives
- Parcel
- Parcel PTE = Yes



Assessment area: V62A



1 inch equals 15 meters



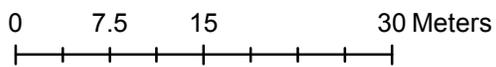
CRAM Assessment Area

- Depressional (D)
- Riverine (R)
- Vernal Pool (V)
- Vernal Pool System (VS)

- Assessment area centroid
- Alignment alternative
- Parcels



Assessment area: V65



1 inch equals 15 meters



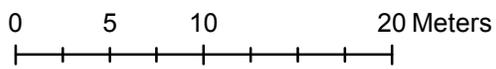
CRAM Assessment Area

-  Depressional (D)
-  Riverine (R)
-  Vernal Pool (V)
-  Vernal Pool System (VS)

-  Assessment area centroid
-  Alignment alternative
-  Parcels



Assessment area: V70



1 inch equals 10 meters



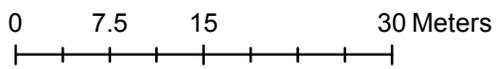
CRAM Assessment Area

-  Depressional (D)
-  Riverine (R)
-  Vernal Pool (V)
-  Vernal Pool System (VS)

-  Assessment area centroid
-  Alignment alternative
-  Parcels



Assessment area: V72



1 inch equals 15 meters



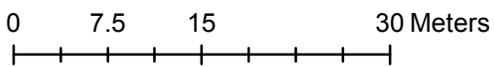
CRAM Assessment Area

- Depressional (D)
- Riverine (R)
- Vernal Pool (V)
- Vernal Pool System (VS)

- Assessment area centroid
- Alignment alternative
- Parcels



Assessment area: V74



1 inch equals 15 meters



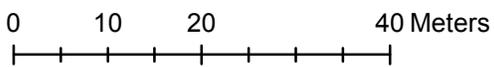
CRAM Assessment Area

- Depressional (D)
- Riverine (R)
- Vernal Pool (V)
- Vernal Pool System (VS)

- Assessment area centroid
- Alignment alternative
- Parcels



Assessment area: V75



1 inch equals 20 meters



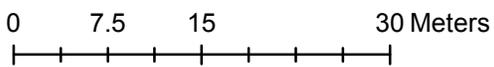
CRAM Assessment Area

- Depressional (D)
- Riverine (R)
- Vernal Pool (V)
- Vernal Pool System (VS)

- Assessment area centroid
- Alignment alternative
- Parcels



Assessment area: V76A



1 inch equals 15 meters



CRAM Assessment Area

- Depressional (D)
- Riverine (R)
- Vernal Pool (V)
- Vernal Pool System (VS)

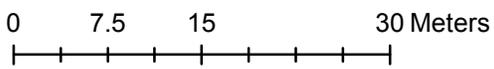
Assessment area centroid

Alignment alternative

Parcels



Assessment area: V76D



1 inch equals 15 meters



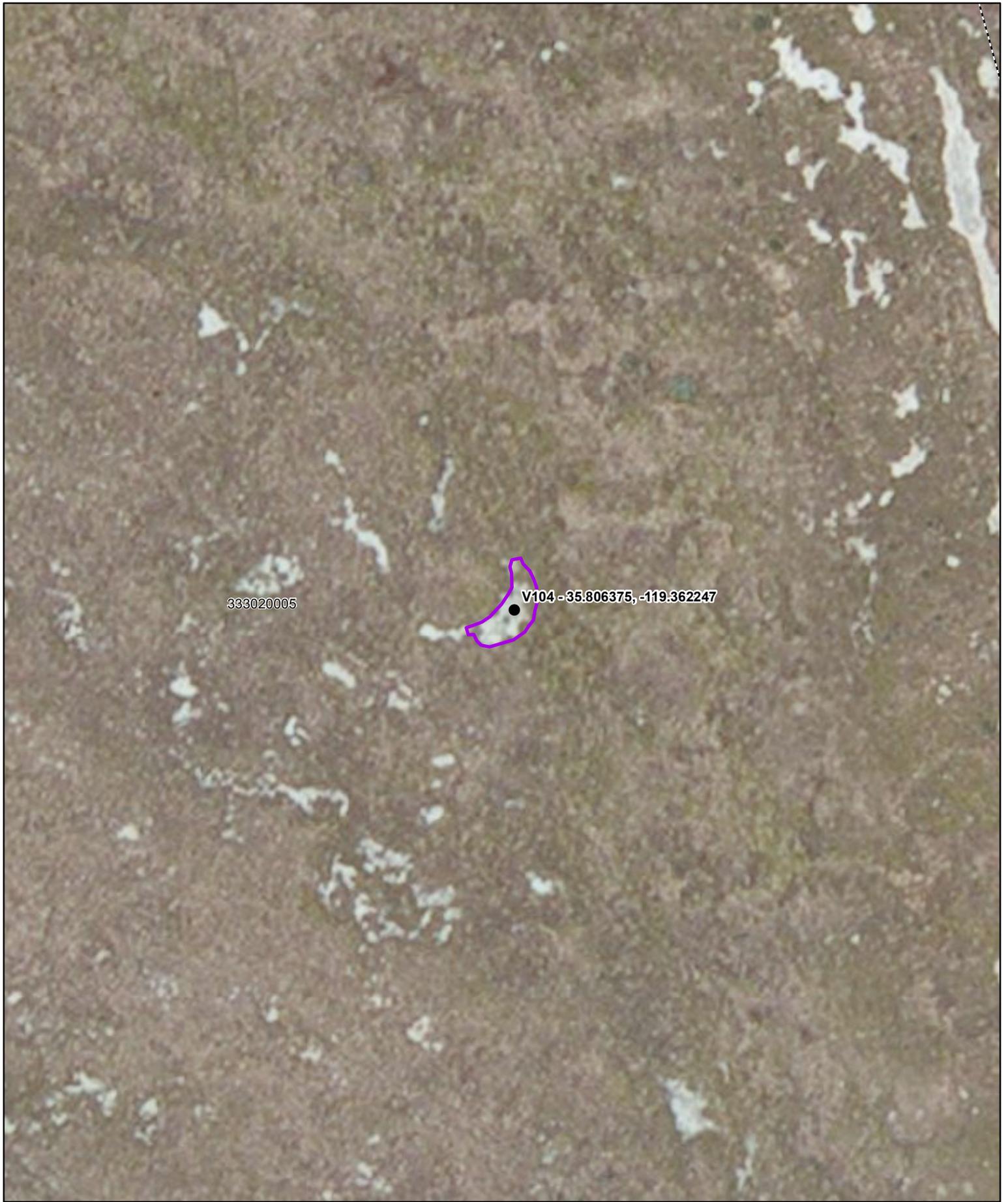
CRAM Assessment Area

- Depressional (D)
- Riverine (R)
- Vernal Pool (V)
- Vernal Pool System (VS)

Assessment area centroid

Alignment alternative

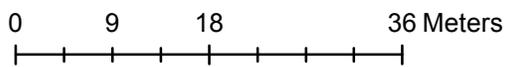
Parcels



333020005

V104 - 35.806375, -119.362247

Assessment area: V104



1 inch equals 18 meters



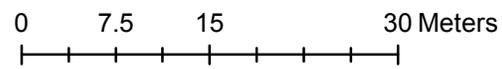
CRAM Assessment Area

-  Depressional (D)
-  Riverine (R)
-  Vernal Pool (V)
-  Vernal Pool System (VS)

-  Assessment area centroid
-  Alignment alternative
-  Parcels



Assessment area: V114



1 inch equals 15 meters



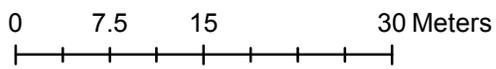
CRAM Assessment Area

- Depressional (D)
- Riverine (R)
- Vernal Pool (V)
- Vernal Pool System (VS)

- Assessment area centroid
- Alignment alternative
- Parcels



Assessment area: V115A



1 inch equals 15 meters



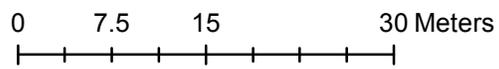
CRAM Assessment Area

-  Depressional (D)
-  Riverine (R)
-  Vernal Pool (V)
-  Vernal Pool System (VS)

-  Assessment area centroid
-  Alignment alternative
-  Parcels



Assessment area: VS97A



1 inch equals 15 meters



CRAM Assessment Area

- Depressional (D)
- Riverine (R)
- Vernal Pool (V)
- Vernal Pool System (VS)

● Assessment area centroid

----- Alignment alternative

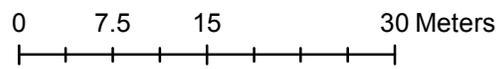
▭ Parcels



333020005

VS99A - 35.809456, -119.363181

Assessment area: VS99A



1 inch equals 15 meters



CRAM Assessment Area

 Depressional (D)

 Riverine (R)

 Vernal Pool (V)

 Vernal Pool System (VS)

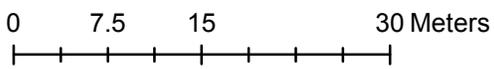
 Assessment area centroid

 Alignment alternative

 Parcels



Assessment area: VS104A



1 inch equals 15 meters



CRAM Assessment Area

-  Depressional (D)
-  Riverine (R)
-  Vernal Pool (V)
-  Vernal Pool System (VS)

 Assessment area centroid

 Alignment alternative

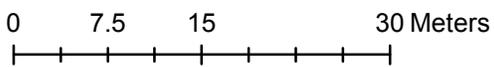
 Parcels



333020005

VS107A - 35.805597, -119.361988

Assessment area: VS107A



1 inch equals 15 meters



CRAM Assessment Area

 Depressional (D)

 Riverine (R)

 Vernal Pool (V)

 Vernal Pool System (VS)

 Assessment area centroid

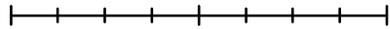
 Alignment alternative

 Parcels



Assessment area: VS112

0 7.5 15 30 Meters



1 inch equals 15 meters



CRAM Assessment Area

Depressional (D)

Riverine (R)

Vernal Pool (V)

Vernal Pool System (VS)

Assessment area centroid

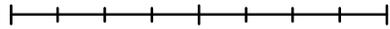
Alignment alternative

Parcels



Assessment area: VS114A

0 7.5 15 30 Meters



1 inch equals 15 meters



CRAM Assessment Area

 Depressional (D)

 Riverine (R)

 Vernal Pool (V)

 Vernal Pool System (VS)

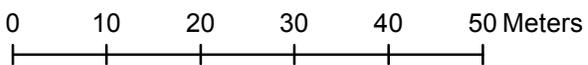
 Assessment area centroid

 Alignment alternative

 Parcels



Assessment area: D304



1 inch equals 20 meters



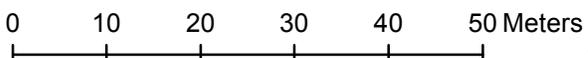
CRAM Assessment Area

- Depressional (D)
- Riverine (R)
- Vernal Pool (V)
- Vernal Pool System (VS)

- Assessment area centroid
- Alignment alternatives
- Parcel
- Parcel PTE = Yes



Assessment area: D305



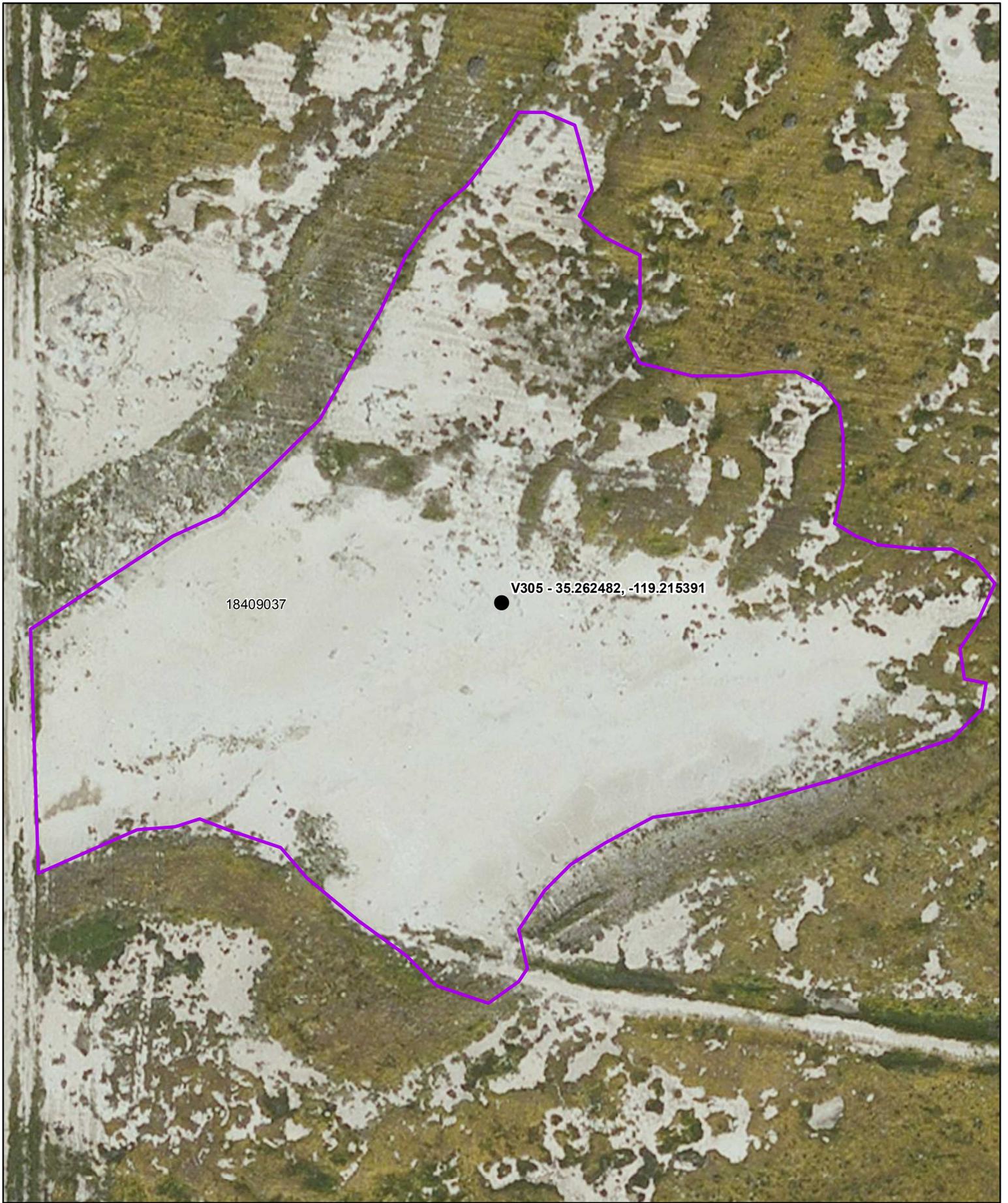
1 inch equals 20 meters



CRAM Assessment Area

- Depressional (D)
- Riverine (R)
- Vernal Pool (V)
- Vernal Pool System (VS)

- Assessment area centroid
- Alignment alternatives
- Parcel
- Parcel PTE = Yes



Assessment area: V305

0 15 30 45 60 75 Meters



1 inch equals 30 meters

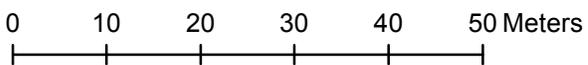
CRAM Assessment Area

- Depressional (D)
- Riverine (R)
- Vernal Pool (V)
- Vernal Pool System (VS)

- Assessment area centroid
- Alignment alternatives
- Parcel
- Parcel PTE = Yes



Assessment area: VS305



1 inch equals 20 meters



CRAM Assessment Area

- Depressional (D)
- Riverine (R)
- Vernal Pool (V)
- Vernal Pool System (VS)

- CRAM Centroid
- Alignment alternatives
- 250 meter Buffer
- Parcel
- Parcel PTE = Yes



18409037

VS307 -35.255689, -119.21021

Assessment area: VS307

0 10 20 30 40 50 Meters

1 inch equals 20 meters



CRAM Assessment Area

-  Depressional (D)
-  Riverine (R)
-  Vernal Pool (V)
-  Vernal Pool System (VS)

 Assessment area centroid

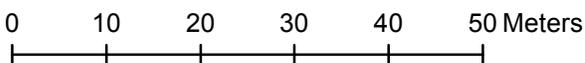
 Alignment alternatives

 Parcel

 Parcel PTE = Yes



Assessment area: D301



1 inch equals 20 meters



CRAM Assessment Area

- Depressional (D)
- Riverine (R)
- Vernal Pool (V)
- Vernal Pool System (VS)

- Assessment area centroid
- Alignment alternatives
- 250 meter Buffer
- Parcel
- Parcel PTE = Yes



Assessment area: D301A

0 10 20 30 40 50 Meters

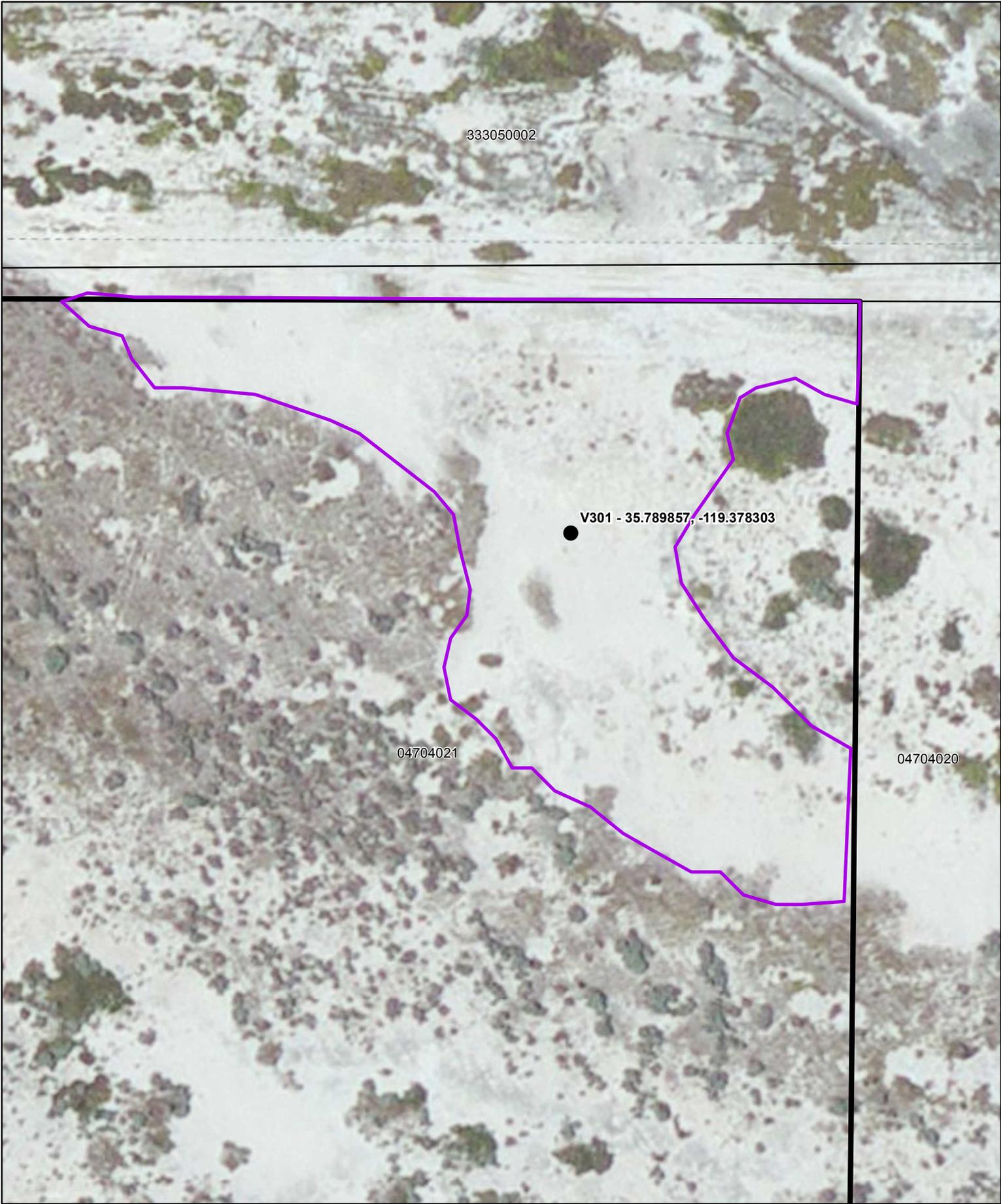
1 inch equals 20 meters



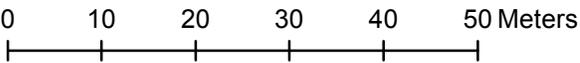
CRAM Assessment Area

- Depressional (D)
- Riverine (R)
- Vernal Pool (V)
- Vernal Pool System (VS)

- Assessment area centroid
- Alignment alternatives
- Parcel
- Parcel PTE = Yes



Assessment area: V301



1 inch equals 20 meters



CRAM Assessment Area

- Depressional (D)
- Riverine (R)
- Vernal Pool (V)
- Vernal Pool System (VS)

- Assessment area centroid
- Alignment alternatives
- Parcel
- Parcel PTE = Yes



Assessment area: V302

0 10 20 30 40 50 Meters

1 inch equals 20 meters



- CRAM Assessment Area**
-  Depressional (D)
 -  Riverine (R)
 -  Vernal Pool (V)
 -  Vernal Pool System (VS)
-  Assessment area centroid
-  Alignment alternatives
-  Parcel
-  Parcel PTE = Yes



Assessment area: R300

0 10 20 30 40 50 Meters

1 inch equals 25 meters



CRAM Assessment Area

- Depressional (D)
- Riverine (R)
- Vernal Pool (V)
- Vernal Pool System (VS)

- Assessment area centroid
- Alignment alternatives
- Parcel
- Parcel PTE = Yes



Assessment area: R302

0 10 20 30 40 50 Meters

1 inch equals 20 meters



CRAM Assessment Area

 Depressional (D)

 Riverine (R)

 Vernal Pool (V)

 Vernal Pool System (VS)

 Assessment area centroid

 Alignment alternatives

 Parcel

 Parcel PTE = Yes



Assessment area: D303

0 10 20 30 40 50 Meters

1 inch equals 20 meters



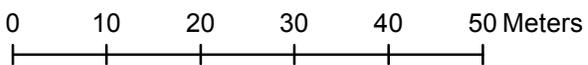
CRAM Assessment Area

-  Depressional (D)
-  Riverine (R)
-  Vernal Pool (V)
-  Vernal Pool System (VS)

-  Assessment area centroid
-  Alignment alternatives
-  Parcel
-  Parcel PTE = Yes



Assessment area: V303



1 inch equals 20 meters



CRAM Assessment Area

-  Depressional (D)
-  Riverine (R)
-  Vernal Pool (V)
-  Vernal Pool System (VS)

 Assessment area centroid

 Alignment alternatives

 Parcel

 Parcel PTE = Yes

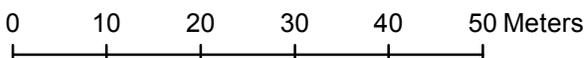


333050003

VS300 - 35.803816, -119.390143

333050004

Assessment area: VS300



1 inch equals 20 meters



CRAM Assessment Area

- Depressional (D)
- Riverine (R)
- Vernal Pool (V)
- Vernal Pool System (VS)

Assessment area centroid

Alignment alternatives

Parcel

Parcel PTE = Yes

333050004

VS301 - 35.8004, -119.390299

333050005

Assessment area: VS301

0 10 20 30 40 50 Meters

1 inch equals 20 meters



CRAM Assessment Area

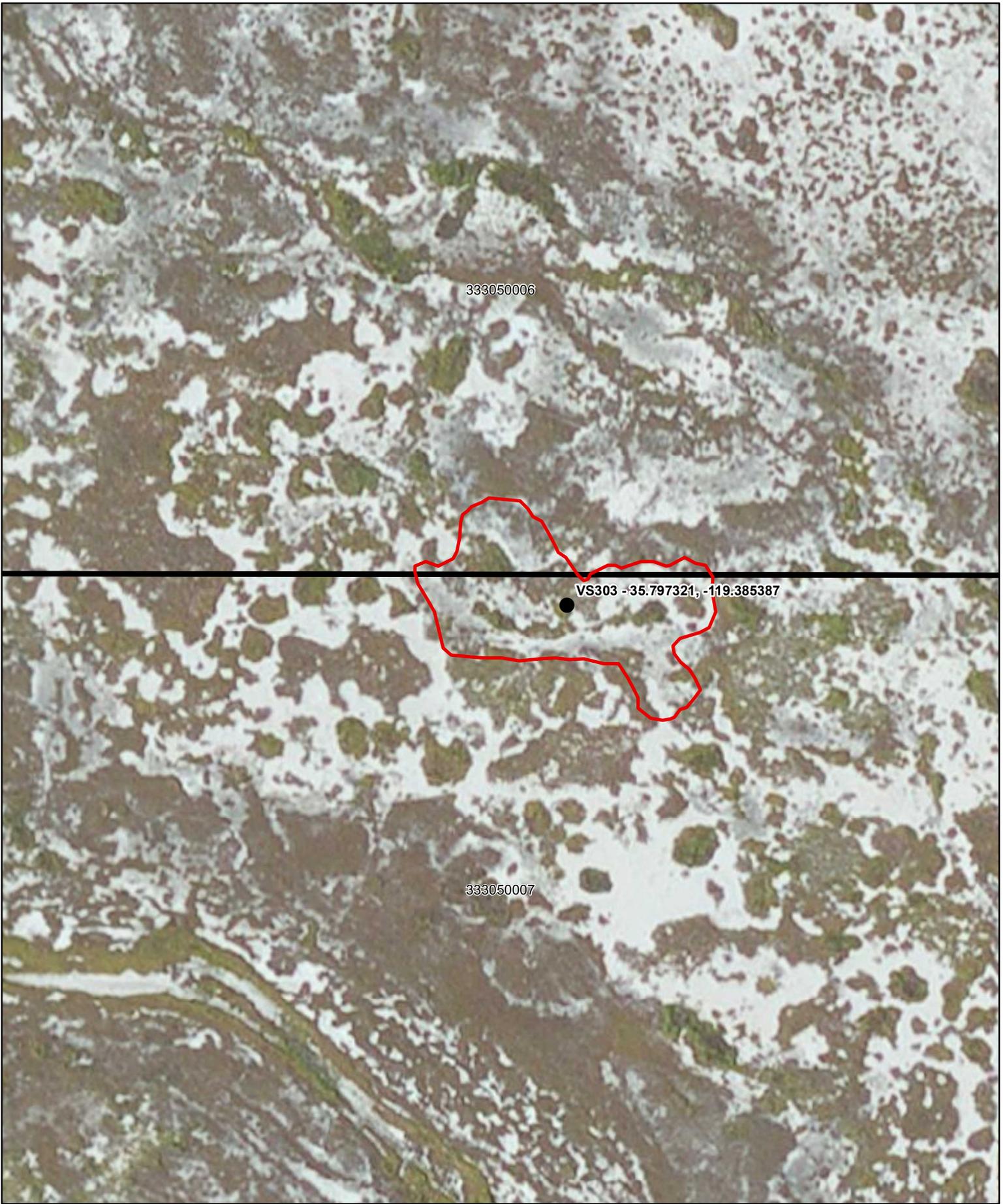
- Depressional (D)
- Riverine (R)
- Vernal Pool (V)
- Vernal Pool System (VS)

Assessment area centroid

Alignment alternatives

Parcel

Parcel PTE = Yes

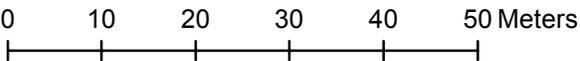


333050006

VS303 -35.797321, -119.385387

333050007

Assessment area: VS303



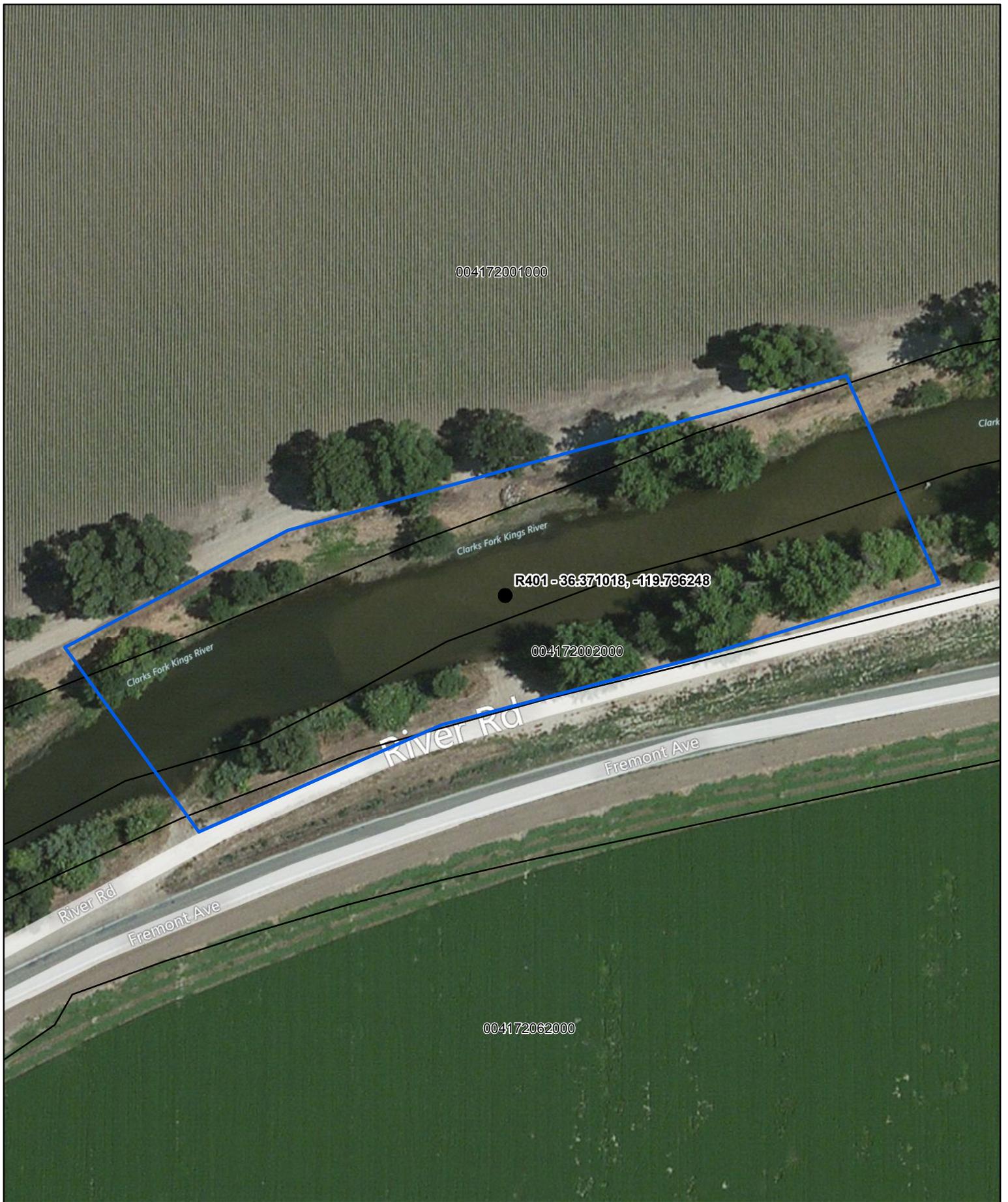
1 inch equals 20 meters



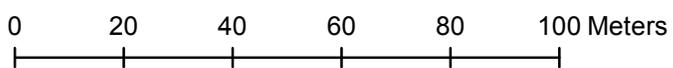
CRAM Assessment Area

- Depressional (D)
- Riverine (R)
- Vernal Pool (V)
- Vernal Pool System (VS)

- Assessment area centroid
- Alignment alternatives
- Parcel
- Parcel PTE = Yes



Assessment area: R401



1 inch equals 35 meters



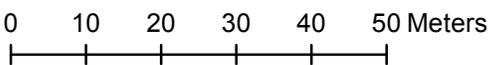
CRAM Assessment Area

- Depressional (D)
- Riverine (R)
- Vernal Pool (V)
- Vernal Pool System (VS)

- Assessment area centroid
- Parcel
- Parcel PTE = Yes



Assessment area: R402



1 inch equals 25 meters



CRAM Assessment Area

- Depressional (D)
- Riverine (R)
- Vernal Pool (V)
- Vernal Pool System (VS)

- Assessment area centroid
- Parcel
- Parcel PTE = Yes

Appendix B

Summary Table of CRAM Data

Table B-1
 Summary Table of CRAM Data

AA Code	CRAM Type	Wetland Type	Watershed	Index Score ^a	Attribute Scores				Number of Stressors	Attribute Stressors			
					Buffer and Landscape Context	Hydrology	Physical Structure	Biotic Structure		Buffer and Landscape Stressors	Hydrology Stressors	Physical Stressors	Biotic Stressors
D147	Depressional	Agricultural reservoir	Upper Deer-Upper White	31.5	30	33	38	25	9	2	4	2	1
D203	Depressional	Seasonal basin	Tulare-Buena Vista Lakes	55.1	45	67	50	58	5	2	1	1	1
D204	Depressional	Seasonal basin	Tulare-Buena Vista Lakes	66.2	45	67	75	78	3	1	0	1	1
D205	Depressional	Detention basin	Tulare-Buena Vista Lakes	41.2	29	58	25	53	2	1	1	0	0
D206	Depressional	Detention basin	Tulare-Buena Vista Lakes	43.4	38	58	25	53	1	1	0	0	0
D212	Depressional	Agricultural reservoir	Upper Poso	51.6	30	50	63	64	1	0	0	0	1
D213	Depressional	Agricultural reservoir	Upper Poso	44.4	33	50	25	69	1	0	0	0	1
D214	Depressional	Agricultural reservoir	Tulare-Buena Vista Lakes	34.6	30	50	25	33	4	3	0	0	1
R8	Riverine	Seasonal riverine	Tulare-Buena Vista Lakes	67.3	75	75	63	56	11	4	4	2	1
R63A	Riverine	Ditch	Upper Deer-Upper White	68.3	93	75	38	67	7	2	1	2	2
R66	Riverine	Ditch	Upper Deer-Upper White	67.0	90	67	50	61	7	2	2	2	1
R71A	Riverine	Ditch	Upper Deer-Upper White	61.3	93	83	38	31	6	1	3	2	0
R146	Riverine	Ditch	Upper Deer-Upper White	43.0	29	58	38	47	9	2	1	4	2
R149	Riverine	Seasonal riverine	Upper Poso	63.0	63	67	50	72	6	2	2	1	1
R150	Riverine	Seasonal riverine	Upper Poso	61.3	75	67	50	53	10	2	3	3	2
R157A	Riverine	Seasonal riverine	Middle Kern-Upper Tehachapi-Grapevine	65.3	59	67	63	72	8	6	0	1	1
R160	Riverine	Seasonal riverine	Middle Kern-Upper Tehachapi-Grapevine	60.5	75	50	50	67	10	6	1	3	0
R203	Riverine	Canal	Upper Dry	27.8	25	25	25	36	3	2	0	1	0
R205	Riverine	Canal	Upper Dry	37.9	63	33	25	31	5	1	2	2	0
R208	Riverine	Seasonal riverine	Upper Kaweah	67.2	68	67	63	72	2	2	0	0	0
R209	Riverine	Canal	Upper Kaweah	45.4	66	42	38	36	5	3	0	2	0
R211	Riverine	Ditch	Tulare-Buena Vista Lakes	45.7	43	42	63	36	9	3	3	2	1
R212	Riverine	Ditch	Tulare-Buena Vista Lakes	42.6	68	42	25	36	8	3	3	1	1
R213	Riverine	Ditch	Tulare-Buena Vista Lakes	42.3	66	42	25	36	7	3	2	1	1
R220	Riverine	Seasonal riverine	Tulare-Buena Vista Lakes	72.9	78	75	75	64	5	2	2	0	1
V62A	Individual Vernal Pool	Vernal swale and pool complex	Upper Deer-Upper White	72.6	78	92	50	71	7	2	1	2	2
V65	Individual Vernal Pool	Vernal swale and pool complex	Upper Deer-Upper White	76.4	93	92	50	71	4	2	1	1	0

Table B-1
 Summary Table of CRAM Data

AA Code	CRAM Type	Wetland Type	Watershed	Index Score ^a	Attribute Scores				Number of Stressors	Attribute Stressors			
					Buffer and Landscape Context	Hydrology	Physical Structure	Biotic Structure		Buffer and Landscape Stressors	Hydrology Stressors	Physical Stressors	Biotic Stressors
V70	Individual Vernal Pool	Vernal pool	Upper Deer-Upper White	56.7	56	75	38	58	5	1	2	2	0
V72	Individual Vernal Pool	Vernal pool	Upper Deer-Upper White	66.0	56	83	50	75	5	1	2	2	0
V74	Individual Vernal Pool	Vernal pool	Upper Deer-Upper White	72.3	56	83	75	75	6	1	2	2	1
V75	Individual Vernal Pool	Vernal pool	Upper Deer-Upper White	66.0	56	83	63	63	5	1	2	2	0
V76A	Individual Vernal Pool	Vernal pool	Upper Deer-Upper White	62.1	61	83	50	54	4	1	2	0	1
V76D	Individual Vernal Pool	Vernal pool	Upper Deer-Upper White	59.8	81	83	50	25	3	1	2	0	0
V104	Individual Vernal Pool	Vernal pool	Upper Deer-Upper White	77.5	93	100	50	67	3	2	1	0	0
V114	Individual Vernal Pool	Vernal pool	Upper Deer-Upper White	79.9	91	83	63	83	3	1	1	1	0
V115A	Individual Vernal Pool	Vernal pool	Upper Deer-Upper White	80.9	90	100	63	71	2	1	1	0	0
VS97A	Vernal Pool Systems	Vernal swale and pool complex	Upper Deer-Upper White	76.7	78	83	75	71	4	2	1	1	0
VS99A	Vernal Pool Systems	Vernal swale and pool complex	Upper Deer-Upper White	82.7	93	92	75	71	2	2	0	0	0
VS104A	Vernal Pool Systems	Vernal swale and pool complex	Upper Deer-Upper White	77.8	78	100	75	58	3	2	1	0	0
VS107A	Vernal Pool Systems	Vernal pool	Upper Deer-Upper White	80.6	81	100	75	67	2	2	0	0	0
VS112	Vernal Pool Systems	Vernal swale and pool complex	Upper Deer-Upper White	76.7	78	75	83	71	3	1	1	1	0
VS114A	Vernal Pool Systems	Vernal swale and pool complex	Upper Deer-Upper White	80.9	90	100	67	67	2	1	1	0	0
Potential Mitigation Sites													
Buena Vista Dairy													
D304	Depressional	Depressional wetland	Middle Kern-Upper Tehachapi-Grapevine	70.9	81	83	50	69	3	2	1	0	0
D305	Depressional	Depressional wetland	Middle Kern-Upper Tehachapi-Grapevine	70.5	93	83	50	56	3	2	1	0	0
V305	Individual Vernal Pool	Vernal pool	Middle Kern-Upper Tehachapi-Grapevine	75.4	93	92	63	54	2	1	1	0	0
VS305	Vernal Pool Systems	Vernal swale and pool complex	Middle Kern-Upper Tehachapi-Grapevine	80.6	93	92	75	63	2	1	1	0	0
VS307	Vernal Pool Systems	Vernal swale and pool complex	Middle Kern-Upper Tehachapi-Grapevine	81.7	93	92	75	67	2	1	1	0	0
Davis													
D301	Depressional	Seasonal wetland	Tulare-Buena Vista Lakes	70.7	84	83	38	78	3	2	1	0	0
D301A	Depressional	Seasonal wetland	Tulare-Buena Vista Lakes	68.6	84	83	38	69	3	2	1	0	0
Staffel													
V301	Individual Vernal Pool	Vernal pool	Upper Deer-Upper White	77.5	93	92	50	75	2	1	0	1	0

Table B-1
 Summary Table of CRAM Data

AA Code	CRAM Type	Wetland Type	Watershed	Index Score ^a	Attribute Scores				Number of Stressors	Attribute Stressors			
					Buffer and Landscape Context	Hydrology	Physical Structure	Biotic Structure		Buffer and Landscape Stressors	Hydrology Stressors	Physical Stressors	Biotic Stressors
V302	Individual Vernal Pool	Vernal pool	Upper Deer-Upper White	70.2	93	92	38	58	2	1	0	1	0
Te Velde													
R300	Riverine	Seasonal riverine	Upper Tule	54.1	68	58	38	53	6	1	2	3	0
R302	Riverine	Seasonal riverine	Upper Tule	61.7	68	75	38	68	6	1	2	3	0
Valadez													
D303	Depressional	Seasonal basin	Tulare-Buena Vista Lakes	58.5	48	67	50	69	3	2	0	1	0
V303	Individual Vernal Pool	Vernal pool	Tulare-Buena Vista Lakes	57.7	56	100	38	38	1	1	0	0	0
Yang													
VS300	Vernal Pool Systems	Vernal swale and pool complex	Upper Deer-Upper White	77.5	93	92	68	58	1	1	0	0	0
VS301	Vernal Pool Systems	Vernal swale and pool complex	Upper Deer-Upper White	84.8	93	92	83	71	1	1	0	0	0
VS303	Vernal Pool Systems	Vernal swale and pool complex	Upper Deer-Upper White	80.6	93	92	75	63	0	0	0	0	0
Clark River Ranch													
R401	Riverine	Seasonal riverine	Tulare-Buena Vista Lakes	58.7	75	67	38	56	7	2	2	3	0
R402	Riverine	Seasonal riverine	Tulare-Buena Vista Lakes	60.8	63	58	50	72	9	3	3	3	0

^a The averages of the Attribute scores may not exactly match the Index score due to rounding.

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Appendix C

Assessment Area of Data Forms

Basic Information Sheet: Perennial Depressional Wetlands

Your Name: C. Roberts					
Assessment Area Name: D147					
Assessment No.		Date (mm/dd/yyyy): 09/21/2011			
Assessment Team Members for This AA					
C. Roberts					
C. Julian					
A. Langston					
J. Love					
AA Category:					
<input type="checkbox"/> Restoration		<input type="checkbox"/> Mitigation		<input type="checkbox"/> Impacted	
<input checked="" type="checkbox"/> Other					
Which best describes the type of depressional wetland?					
<input type="checkbox"/> freshwater marsh		<input type="checkbox"/> alkaline marsh		<input type="checkbox"/> alkali flat	
<input checked="" type="checkbox"/> other (specify):					
Retention /detention basin					
Which best describes the hydrologic state of the wetland at the time of assessment?					
<input checked="" type="checkbox"/> ponded/inundated		<input type="checkbox"/> saturated soil, but no surface water		<input type="checkbox"/> dry	
What is the apparent hydrologic regime of the wetland?					
Long-duration depressional wetlands are defined as supporting surface water for > 9 months of the year (in > 5 out of 10 years.) Medium-duration depressional wetlands are defined as supporting surface water for between 4 and 9 months of the year. Short-duration wetlands possess surface water between 2 weeks and 4 months of the year.					
<input checked="" type="checkbox"/> long-duration		<input type="checkbox"/> medium-duration		<input type="checkbox"/> short-duration	
Does your wetland connect with the floodplain of a nearby stream? <input type="checkbox"/> yes <input checked="" type="checkbox"/> no					
Is the topographic basin of the wetland <input checked="" type="checkbox"/> distinct or <input type="checkbox"/> indistinct ?					
An indistinct, such as vernal pool complexes and large wet meadows, which may be intricately interspersed with uplands or seemingly homogeneous over very large areas, topographic basin is one that lacks obvious boundaries between wetland and upland. Examples of such features are seasonal, depressional wetlands in very low-gradient landscapes.					
Photo Identification Numbers and Description:					
	Photo ID No.	Description	Latitude	Longitude	Datum
1	1205	North			
2	1207	South			
3	1206	East			
4	1208	West			

Scoring Sheet: Perennial Depressional Wetlands

AA Name: D147		Date: 09/21/2011			
Attributes and Metrics		Scores		Comments	
Buffer and Landscape Context					
Landscape Connectivity (D)		3			
<i>Buffer submetric A: Percent of AA with Buffer</i>	12			Unpaved area > 5 m wide	
<i>Buffer submetric B: Average Buffer Width</i>	3			Avg=16	
<i>Buffer submetric C: Buffer Condition</i>	3				
$D + [C \times (A \times B)^{1/2}]^{1/2} = \text{Attribute Score}$		Raw 7	Final 30	Final Attribute Score = (Raw Score/24)100	30
Hydrology					
Water Source		6			
Hydroperiod or Channel Stability		3			
Hydrologic Connectivity		3			
Attribute Score		Raw 12	Final 33	Final Attribute Score = (Raw Score/36)100	33
Physical Structure					
Structural Patch Richness		3		2 patch types	
Topographic Complexity		6			
Attribute Score		Raw 9	Final 38	Final Attribute Score = (Raw Score/24)100	38
Biotic Structure					
<i>Plant Community submetric A: Number of Plant Layers</i>	3			Non-vegetated	
<i>Plant Community submetric B: Number of Co-dominant species</i>	3				
<i>Plant Community submetric C: Percent Invasion</i>	3				
Plant Community Metric <i>(average of submetrics A-C)</i>		3			
Horizontal Interspersion and Zonation		3			
Vertical Biotic Structure		3			
Attribute Score		Raw 9	Final 25	Final Attribute Score = (Raw Score/36)100	25
Overall AA Score (Average of Final Attribute Scores)				31.5	

Stressor Checklist Worksheet

HYDROLOGY ATTRIBUTE (WITHIN 50 M OF AA)	Present and likely to have negative effect on AA	Significant negative effect on AA
Point Source (PS) discharges (POTW, other non-stormwater discharge)		
Non-point Source (Non-PS) discharges (urban runoff, farm drainage)		
Flow diversions or unnatural inflows	X	X
Dams (reservoirs, detention basins, recharge basins)		
Flow obstructions (culverts, paved stream crossings)	X	X
Weir/drop structure, tide gates		
Dredged inlet/channel		
Engineered channel (riprap, armored channel bank, bed)		
Dike/levees	X	X
Groundwater extraction		
Ditches (borrow, agricultural drainage, mosquito control, etc.)		
Actively managed hydrology	X	X
Comments		
Pumped retention/detention basin		

PHYSICAL STRUCTURE ATTRIBUTE (WITHIN 50 M OF AA)	Present and likely to have negative effect on AA	Significant negative effect on AA
Filling or dumping of sediment or soils (N/A for restoration areas)		
Grading/ compaction (N/A for restoration areas)	X	X
Plowing/Discing (N/A for restoration areas)		
Resource extraction (sediment, gravel, oil and/or gas)		
Vegetation management		
Excessive sediment or organic debris from watershed		
Excessive runoff from watershed		
Nutrient impaired (PS or Non-PS pollution)	X	X
Heavy metal impaired (PS or Non-PS pollution)		
Pesticides or trace organics impaired (PS or Non-PS pollution)		
Bacteria and pathogens impaired (PS or Non-PS pollution)		
Trash or refuse		
Comments		
Surrounded by levee/dirt road; orchard (impairing nutrients)		

BIOTIC STRUCTURE ATTRIBUTE (WITHIN 50 M OF AA)	Present and likely to have negative effect on AA	Significant negative effect on AA
Mowing, grazing, excessive herbivory (within AA)		
Excessive human visitation		
Predation and habitat destruction by non-native vertebrates (e.g., <i>Virginia opossum</i> and domestic predators, such as feral pets)		
Tree cutting/sapling removal		
Removal of woody debris		
Treatment of non-native and nuisance plant species		
Pesticide application or vector control	X	
Biological resource extraction or stocking (fisheries, aquaculture)		
Excessive organic debris in matrix (for vernal pools)		
Lack of vegetation management to conserve natural resources		
Lack of treatment of invasive plants adjacent to AA or buffer		
Comments		
Likely mosquito control; pesticide for trees?		

BUFFER AND LANDSCAPE CONTEXT ATTRIBUTE (WITHIN 500 M OF AA)	Present and likely to have negative effect on AA	Significant negative effect on AA
Urban residential		
Industrial/commercial		
Military training/Air traffic		
Dams (or other major flow regulation or disruption)		
Dryland farming		
Intensive row-crop agriculture		
Orchards/nurseries	X	X
Commercial feedlots		
Dairies		
Ranching (enclosed livestock grazing or horse paddock or feedlot)		
Transportation corridor	X	X
Rangeland (livestock rangeland also managed for native vegetation)		
Sports fields and urban parklands (golf courses, soccer fields, etc.)		
Passive recreation (bird-watching, hiking, etc.)		
Active recreation (off-road vehicles, mountain biking, hunting, fishing)		
Physical resource extraction (rock, sediment, oil/gas)		
Biological resource extraction (aquaculture, commercial fisheries)		
Comments		
Surrounded by orchard, next to HWY 43 and BNSF		

Basic Information Sheet: Perennial Depressional Wetlands

Your Name: A. Langston					
Assessment Area Name: D203					
Assessment No.		Date (mm/dd/yyyy): 03/08/2012			
Assessment Team Members for This AA					
G. Peracca					
J. Whitfield					
C. Roberts					
A. Langston					
AA Category:					
<input type="checkbox"/> Restoration		<input type="checkbox"/> Mitigation		<input checked="" type="checkbox"/> Impacted	<input type="checkbox"/> Other
Which best describes the type of depressional wetland?					
<input type="checkbox"/> freshwater marsh		<input type="checkbox"/> alkaline marsh		<input type="checkbox"/> alkali flat	<input checked="" type="checkbox"/> other (specify):
Impounded historic riverine channel.					
Which best describes the hydrologic state of the wetland at the time of assessment?					
<input type="checkbox"/> ponded/inundated		<input type="checkbox"/> saturated soil, but no surface water		<input checked="" type="checkbox"/> dry	
What is the apparent hydrologic regime of the wetland?					
Long-duration depressional wetlands are defined as supporting surface water for > 9 months of the year (in > 5 out of 10 years.) Medium-duration depressional wetlands are defined as supporting surface water for between 4 and 9 months of the year. Short-duration wetlands possess surface water between 2 weeks and 4 months of the year.					
<input type="checkbox"/> long-duration		<input checked="" type="checkbox"/> medium-duration		<input type="checkbox"/> short-duration	
Does your wetland connect with the floodplain of a nearby stream? <input type="checkbox"/> yes <input checked="" type="checkbox"/> no					
Is the topographic basin of the wetland <input checked="" type="checkbox"/> distinct or <input type="checkbox"/> indistinct ?					
An indistinct, such as vernal pool complexes and large wet meadows, which may be intricately interspersed with uplands or seemingly homogeneous over very large areas, topographic basin is one that lacks obvious boundaries between wetland and upland. Examples of such features are seasonal, depressional wetlands in very low-gradient landscapes.					
Photo Identification Numbers and Description:					
	Photo ID No.	Description	Latitude	Longitude	Datum
1	1709	North			
2	1712	South			
3	1710	East			
4	1711	West			

Scoring Sheet: Perennial Depressional Wetlands

AA Name: D203		Date: 03/08/2012		
Attributes and Metrics		Scores		Comments
Buffer and Landscape Context				
Landscape Connectivity (D)		3		Avg=2.5%
<i>Buffer submetric A: Percent of AA with Buffer</i>	12			100% with buffer
<i>Buffer submetric B: Average Buffer Width</i>	9			Avg= 150.6 meters
<i>Buffer submetric C: Buffer Condition</i>	6			
$D + [C \times (A \times B)^{1/2}]^{1/2} = \text{Attribute Score}$		Raw	Final	Final Attribute Score = (Raw Score/24)100
		10.9	45.4	45.4
Hydrology				
Water Source		9		groundwater
Hydroperiod or Channel Stability		3		
Hydrologic Connectivity		12		
Attribute Score		Raw	Final	Final Attribute Score = (Raw Score/36)100
		24	66.7	66.7
Physical Structure				
Structural Patch Richness		6		7 Patches
Topographic Complexity		6		
Attribute Score		Raw	Final	Final Attribute Score = (Raw Score/24)100
		12	50	50
Biotic Structure				
<i>Plant Community submetric A: Number of Plant Layers</i>	6			2 Layers
<i>Plant Community submetric B: Number of Co-dominant species</i>	3			4 co-dominant spp.
<i>Plant Community submetric C: Percent Invasion</i>	9			25% non-native spp.
Plant Community Metric (average of submetrics A-C)		6		
Horizontal Interspersion and Zonation		12		
Vertical Biotic Structure		3		
Attribute Score		Raw	Final	Final Attribute Score = (Raw Score/36)100
		21	58.3	58.3
Overall AA Score (Average of Final Attribute Scores)				55.1

Stressor Checklist Worksheet

HYDROLOGY ATTRIBUTE (WITHIN 50 M OF AA)	Present and likely to have negative effect on AA	Significant negative effect on AA
Point Source (PS) discharges (POTW, other non-stormwater discharge)		
Non-point Source (Non-PS) discharges (urban runoff, farm drainage)		
Flow diversions or unnatural inflows		
Dams (reservoirs, detention basins, recharge basins)		
Flow obstructions (culverts, paved stream crossings)		
Weir/drop structure, tide gates		
Dredged inlet/channel		
Engineered channel (riprap, armored channel bank, bed)		
Dike/levees		
Groundwater extraction		
Ditches (borrow, agricultural drainage, mosquito control, etc.)		
Actively managed hydrology	X	
Comments		
Surrounding agricultural pumping within 50m draining into ending slope of AA.		

PHYSICAL STRUCTURE ATTRIBUTE (WITHIN 50 M OF AA)	Present and likely to have negative effect on AA	Significant negative effect on AA
Filling or dumping of sediment or soils (N/A for restoration areas)		
Grading/ compaction (N/A for restoration areas)		
Plowing/Discing (N/A for restoration areas)		
Resource extraction (sediment, gravel, oil and/or gas)		
Vegetation management		
Excessive sediment or organic debris from watershed		
Excessive runoff from watershed		
Nutrient impaired (PS or Non-PS pollution)		
Heavy metal impaired (PS or Non-PS pollution)		
Pesticides or trace organics impaired (PS or Non-PS pollution)		
Bacteria and pathogens impaired (PS or Non-PS pollution)		
Trash or refuse	X	
Comments		

BIOTIC STRUCTURE ATTRIBUTE (WITHIN 50 M OF AA)	Present and likely to have negative effect on AA	Significant negative effect on AA
Mowing, grazing, excessive herbivory (within AA)		
Excessive human visitation	X	
Predation and habitat destruction by non-native vertebrates (e.g., <i>Virginia opossum</i> and domestic predators, such as feral pets)		
Tree cutting/sapling removal		
Removal of woody debris		
Treatment of non-native and nuisance plant species		
Pesticide application or vector control		
Biological resource extraction or stocking (fisheries, aquaculture)		
Excessive organic debris in matrix (for vernal pools)		
Lack of vegetation management to conserve natural resources		
Lack of treatment of invasive plants adjacent to AA or buffer		
Comments		

BUFFER AND LANDSCAPE CONTEXT ATTRIBUTE (WITHIN 500 M OF AA)	Present and likely to have negative effect on AA	Significant negative effect on AA
Urban residential		
Industrial/commercial		
Military training/Air traffic		
Dams (or other major flow regulation or disruption)		
Dryland farming		
Intensive row-crop agriculture	X	
Orchards/nurseries	X	
Commercial feedlots		
Dairies		
Ranching (enclosed livestock grazing or horse paddock or feedlot)		
Transportation corridor		
Rangeland (livestock rangeland also managed for native vegetation)		
Sports fields and urban parklands (golf courses, soccer fields, etc.)		
Passive recreation (bird-watching, hiking, etc.)		
Active recreation (off-road vehicles, mountain biking, hunting, fishing)		
Physical resource extraction (rock, sediment, oil/gas)		
Biological resource extraction (aquaculture, commercial fisheries)		
Comments		

Basic Information Sheet: Perennial Depressional Wetlands

Your Name: G. Peracca					
Assessment Area Name: D204					
Assessment No.		Date (mm/dd/yyyy): 03/08/2012			
Assessment Team Members for This AA					
J. Whitfield					
C. Roberts					
G. Peracca					
A. Langston					
AA Category:					
<input type="checkbox"/> Restoration		<input type="checkbox"/> Mitigation		<input checked="" type="checkbox"/> Impacted	<input checked="" type="checkbox"/> Other
Which best describes the type of depressional wetland?					
<input type="checkbox"/> freshwater marsh		<input type="checkbox"/> alkaline marsh		<input type="checkbox"/> alkali flat	<input checked="" type="checkbox"/> other (specify):
Impounded portion of river system and retention / detention basin					
Which best describes the hydrologic state of the wetland at the time of assessment?					
<input type="checkbox"/> ponded/inundated		<input type="checkbox"/> saturated soil, but no surface water			<input checked="" type="checkbox"/> dry
What is the apparent hydrologic regime of the wetland?					
Long-duration depressional wetlands are defined as supporting surface water for > 9 months of the year (in > 5 out of 10 years.) Medium-duration depressional wetlands are defined as supporting surface water for between 4 and 9 months of the year. Short-duration wetlands possess surface water between 2 weeks and 4 months of the year.					
<input type="checkbox"/> long-duration		<input checked="" type="checkbox"/> medium-duration		<input type="checkbox"/> short-duration	
Does your wetland connect with the floodplain of a nearby stream? <input type="checkbox"/> yes <input checked="" type="checkbox"/> no					
Is the topographic basin of the wetland <input checked="" type="checkbox"/> distinct or <input type="checkbox"/> indistinct ?					
An indistinct, such as vernal pool complexes and large wet meadows, which may be intricately interspersed with uplands or seemingly homogeneous over very large areas, topographic basin is one that lacks obvious boundaries between wetland and upland. Examples of such features are seasonal, depressional wetlands in very low-gradient landscapes.					
Photo Identification Numbers and Description:					
	Photo ID No.	Description	Latitude	Longitude	Datum
1	1714	North			
2	1716	South			
3	1715	East			
4	1713	West			

Scoring Sheet: Perennial Depressional Wetlands

AA Name: D204		Date: 03/08/2012			
Attributes and Metrics		Scores		Comments	
Buffer and Landscape Context					
Landscape Connectivity (D)		3		Avg=9%	
<i>Buffer submetric A: Percent of AA with Buffer</i>	12			100% with buffer	
<i>Buffer submetric B: Average Buffer Width</i>	9			Avg=179.4 meters	
<i>Buffer submetric C: Buffer Condition</i>	6				
$D + [C \times (A \times B)^{1/2}]^{1/2} = \text{Attribute Score}$		Raw	Final	Final Attribute Score = (Raw Score/24)100	45.4
		10.9	45.4		
Hydrology					
Water Source		9		Ground water = dry season source	
Hydroperiod or Channel Stability		3			
Hydrologic Connectivity		12			
Attribute Score		Raw	Final	Final Attribute Score = (Raw Score/36)100	66.7
		24	66.7		
Physical Structure					
Structural Patch Richness		6		6 patch types	
Topographic Complexity		12			
Attribute Score		Raw	Final	Final Attribute Score = (Raw Score/24)100	75
		18	75		
Biotic Structure					
<i>Plant Community submetric A: Number of Plant Layers</i>	12			4 Layers	
<i>Plant Community submetric B: Number of Co-dominant species</i>	6			6 co-dominant spp.	
<i>Plant Community submetric C: Percent Invasion</i>	3			50% invasion	
Plant Community Metric (average of submetrics A-C)		7			
Horizontal Interspersion and Zonation		12			
Vertical Biotic Structure		9			
Attribute Score		Raw	Final	Final Attribute Score = (Raw Score/36)100	77.8
		28	77.8		
Overall AA Score (Average of Final Attribute Scores)				66.2	

Stressor Checklist Worksheet

HYDROLOGY ATTRIBUTE (WITHIN 50 M OF AA)	Present and likely to have negative effect on AA	Significant negative effect on AA
Point Source (PS) discharges (POTW, other non-stormwater discharge)		
Non-point Source (Non-PS) discharges (urban runoff, farm drainage)		
Flow diversions or unnatural inflows		
Dams (reservoirs, detention basins, recharge basins)		
Flow obstructions (culverts, paved stream crossings)		
Weir/drop structure, tide gates		
Dredged inlet/channel		
Engineered channel (riprap, armored channel bank, bed)		
Dike/levees		
Groundwater extraction		
Ditches (borrow, agricultural drainage, mosquito control, etc.)		
Actively managed hydrology		
Comments		

PHYSICAL STRUCTURE ATTRIBUTE (WITHIN 50 M OF AA)	Present and likely to have negative effect on AA	Significant negative effect on AA
Filling or dumping of sediment or soils (N/A for restoration areas)		
Grading/ compaction (N/A for restoration areas)		
Plowing/Discing (N/A for restoration areas)		
Resource extraction (sediment, gravel, oil and/or gas)		
Vegetation management		
Excessive sediment or organic debris from watershed		
Excessive runoff from watershed		
Nutrient impaired (PS or Non-PS pollution)		
Heavy metal impaired (PS or Non-PS pollution)		
Pesticides or trace organics impaired (PS or Non-PS pollution)		
Bacteria and pathogens impaired (PS or Non-PS pollution)		
Trash or refuse	X	
Comments		

BIOTIC STRUCTURE ATTRIBUTE (WITHIN 50 M OF AA)	Present and likely to have negative effect on AA	Significant negative effect on AA
Mowing, grazing, excessive herbivory (within AA)		
Excessive human visitation	X	
Predation and habitat destruction by non-native vertebrates (e.g., <i>Virginia opossum</i> and domestic predators, such as feral pets)		
Tree cutting/sapling removal		
Removal of woody debris		
Treatment of non-native and nuisance plant species		
Pesticide application or vector control		
Biological resource extraction or stocking (fisheries, aquaculture)		
Excessive organic debris in matrix (for vernal pools)		
Lack of vegetation management to conserve natural resources		
Lack of treatment of invasive plants adjacent to AA or buffer		
Comments		

BUFFER AND LANDSCAPE CONTEXT ATTRIBUTE (WITHIN 500 M OF AA)	Present and likely to have negative effect on AA	Significant negative effect on AA
Urban residential		
Industrial/commercial	X	
Military training/Air traffic		
Dams (or other major flow regulation or disruption)		
Dryland farming		
Intensive row-crop agriculture		
Orchards/nurseries		
Commercial feedlots		
Dairies		
Ranching (enclosed livestock grazing or horse paddock or feedlot)		
Transportation corridor		
Rangeland (livestock rangeland also managed for native vegetation)		
Sports fields and urban parklands (golf courses, soccer fields, etc.)		
Passive recreation (bird-watching, hiking, etc.)		
Active recreation (off-road vehicles, mountain biking, hunting, fishing)		
Physical resource extraction (rock, sediment, oil/gas)		
Biological resource extraction (aquaculture, commercial fisheries)		
Comments		

Basic Information Sheet: Perennial Depressional Wetlands

Your Name: G. Peracca					
Assessment Area Name: D205					
Assessment No.		Date (mm/dd/yyyy): 03/07/2012			
Assessment Team Members for This AA					
G. Peracca					
C. Roberts					
A. Langston					
AA Category:					
<input type="checkbox"/> Restoration <input type="checkbox"/> Mitigation <input type="checkbox"/> Impacted <input checked="" type="checkbox"/> Other					
Which best describes the type of depressional wetland?					
<input type="checkbox"/> freshwater marsh <input type="checkbox"/> alkaline marsh <input type="checkbox"/> alkali flat <input checked="" type="checkbox"/> other (specify): Retention / Detention Basin					
Which best describes the hydrologic state of the wetland at the time of assessment?					
<input type="checkbox"/> ponded/inundated <input type="checkbox"/> saturated soil, but no surface water <input checked="" type="checkbox"/> dry					
What is the apparent hydrologic regime of the wetland?					
Long-duration depressional wetlands are defined as supporting surface water for > 9 months of the year (in > 5 out of 10 years.) Medium-duration depressional wetlands are defined as supporting surface water for between 4 and 9 months of the year. Short-duration wetlands possess surface water between 2 weeks and 4 months of the year.					
<input type="checkbox"/> long-duration <input type="checkbox"/> medium-duration <input checked="" type="checkbox"/> short-duration					
Does your wetland connect with the floodplain of a nearby stream? <input type="checkbox"/> yes <input checked="" type="checkbox"/> no					
Is the topographic basin of the wetland <input checked="" type="checkbox"/> distinct or <input type="checkbox"/> indistinct ?					
An indistinct, such as vernal pool complexes and large wet meadows, which may be intricately interspersed with uplands or seemingly homogeneous over very large areas, topographic basin is one that lacks obvious boundaries between wetland and upland. Examples of such features are seasonal, depressional wetlands in very low-gradient landscapes.					
Photo Identification Numbers and Description:					
	Photo ID No.	Description	Latitude	Longitude	Datum
1	1707	North			
2	1705	South			
3	1708	East			
4	1706	West			

Scoring Sheet: Perennial Depressional Wetlands

AA Name: D205		Date: 03/07/2012		
Attributes and Metrics		Scores		Comments
Buffer and Landscape Context				
Landscape Connectivity (D)		3		Avg=2.5%
<i>Buffer submetric A: Percent of AA with Buffer</i>	9			60% with buffer
<i>Buffer submetric B: Average Buffer Width</i>	3			Avg=11.5 meters
<i>Buffer submetric C: Buffer Condition</i>	3			
$D + [C \times (A \times B)^{1/2}]^{1/2} = \text{Attribute Score}$		Raw 6.9	Final 28.8	Final Attribute Score = (Raw Score/24)100 28.8
Hydrology				
Water Source		6		
Hydroperiod or Channel Stability		3		
Hydrologic Connectivity		12		
Attribute Score		Raw 21	Final 58.3	Final Attribute Score = (Raw Score/36)100 58.3
Physical Structure				
Structural Patch Richness		3		2 patch types
Topographic Complexity		3		
Attribute Score		Raw 6	Final 25.0	Final Attribute Score = (Raw Score/24)100 25.0
Biotic Structure				
<i>Plant Community submetric A: Number of Plant Layers</i>	6			1 Layer
<i>Plant Community submetric B: Number of Co-dominant species</i>	3			4 Co-dominant spp.
<i>Plant Community submetric C: Percent Invasion</i>	2			75% non-native spp.
Plant Community Metric (average of submetrics A-C)		4		
Horizontal Interspersion and Zonation		6		
Vertical Biotic Structure		9		
Attribute Score		Raw 19	Final 52.7	Final Attribute Score = (Raw Score/36)100 52.7
Overall AA Score (Average of Final Attribute Scores)				41.2

Stressor Checklist Worksheet

HYDROLOGY ATTRIBUTE (WITHIN 50 M OF AA)	Present and likely to have negative effect on AA	Significant negative effect on AA
Point Source (PS) discharges (POTW, other non-stormwater discharge)		
Non-point Source (Non-PS) discharges (urban runoff, farm drainage)	X	
Flow diversions or unnatural inflows		
Dams (reservoirs, detention basins, recharge basins)		
Flow obstructions (culverts, paved stream crossings)		
Weir/drop structure, tide gates		
Dredged inlet/channel		
Engineered channel (riprap, armored channel bank, bed)		
Dike/levees		
Groundwater extraction		
Ditches (borrow, agricultural drainage, mosquito control, etc.)		
Actively managed hydrology		
Comments		

PHYSICAL STRUCTURE ATTRIBUTE (WITHIN 50 M OF AA)	Present and likely to have negative effect on AA	Significant negative effect on AA
Filling or dumping of sediment or soils (N/A for restoration areas)		
Grading/ compaction (N/A for restoration areas)		
Plowing/Discing (N/A for restoration areas)		
Resource extraction (sediment, gravel, oil and/or gas)		
Vegetation management		
Excessive sediment or organic debris from watershed		
Excessive runoff from watershed		
Nutrient impaired (PS or Non-PS pollution)		
Heavy metal impaired (PS or Non-PS pollution)		
Pesticides or trace organics impaired (PS or Non-PS pollution)		
Bacteria and pathogens impaired (PS or Non-PS pollution)		
Trash or refuse		
Comments		
Mowing AA but effected = not negative		

BIOTIC STRUCTURE ATTRIBUTE (WITHIN 50 M OF AA)	Present and likely to have negative effect on AA	Significant negative effect on AA
Mowing, grazing, excessive herbivory (within AA)		
Excessive human visitation		
Predation and habitat destruction by non-native vertebrates (e.g., <i>Virginia opossum</i> and domestic predators, such as feral pets)		
Tree cutting/sapling removal		
Removal of woody debris		
Treatment of non-native and nuisance plant species		
Pesticide application or vector control		
Biological resource extraction or stocking (fisheries, aquaculture)		
Excessive organic debris in matrix (for vernal pools)		
Lack of vegetation management to conserve natural resources		
Lack of treatment of invasive plants adjacent to AA or buffer		
Comments		

BUFFER AND LANDSCAPE CONTEXT ATTRIBUTE (WITHIN 500 M OF AA)	Present and likely to have negative effect on AA	Significant negative effect on AA
Urban residential		
Industrial/commercial	X	X
Military training/Air traffic		
Dams (or other major flow regulation or disruption)		
Dryland farming		
Intensive row-crop agriculture		
Orchards/nurseries		
Commercial feedlots		
Dairies		
Ranching (enclosed livestock grazing or horse paddock or feedlot)		
Transportation corridor		
Rangeland (livestock rangeland also managed for native vegetation)		
Sports fields and urban parklands (golf courses, soccer fields, etc.)		
Passive recreation (bird-watching, hiking, etc.)		
Active recreation (off-road vehicles, mountain biking, hunting, fishing)		
Physical resource extraction (rock, sediment, oil/gas)		
Biological resource extraction (aquaculture, commercial fisheries)		
Comments		
Poor drainage off adjacent commercial development visible sediment apron from failure in berm corner.		

Basic Information Sheet: Perennial Depressional Wetlands

Your Name: G. Peracca					
Assessment Area Name: D206					
Assessment No.		Date (mm/dd/yyyy): 03/07/2012			
Assessment Team Members for This AA					
A. Langston					
G. Peracca					
C. Roberts					
AA Category:					
<input type="checkbox"/> Restoration <input type="checkbox"/> Mitigation <input type="checkbox"/> Impacted <input checked="" type="checkbox"/> Other					
Which best describes the type of depressional wetland?					
<input type="checkbox"/> freshwater marsh <input type="checkbox"/> alkaline marsh <input type="checkbox"/> alkali flat <input checked="" type="checkbox"/> other (specify): Stormwater Retention/detention basin					
Which best describes the hydrologic state of the wetland at the time of assessment?					
<input type="checkbox"/> ponded/inundated <input type="checkbox"/> saturated soil, but no surface water <input checked="" type="checkbox"/> dry					
What is the apparent hydrologic regime of the wetland?					
Long-duration depressional wetlands are defined as supporting surface water for > 9 months of the year (in > 5 out of 10 years.) Medium-duration depressional wetlands are defined as supporting surface water for between 4 and 9 months of the year. Short-duration wetlands possess surface water between 2 weeks and 4 months of the year.					
<input type="checkbox"/> long-duration <input type="checkbox"/> medium-duration <input checked="" type="checkbox"/> short-duration					
Does your wetland connect with the floodplain of a nearby stream? <input type="checkbox"/> yes <input checked="" type="checkbox"/> no					
Is the topographic basin of the wetland <input checked="" type="checkbox"/> distinct or <input type="checkbox"/> indistinct ?					
An indistinct, such as vernal pool complexes and large wet meadows, which may be intricately interspersed with uplands or seemingly homogeneous over very large areas, topographic basin is one that lacks obvious boundaries between wetland and upland. Examples of such features are seasonal, depressional wetlands in very low-gradient landscapes.					
Photo Identification Numbers and Description:					
	Photo ID No.	Description	Latitude	Longitude	Datum
1	1703	North			
2	1701	South			
3	1704	East			
4	1702	West			

Scoring Sheet: Perennial Depressional Wetlands

AA Name: D206		Date: 03/07/2012			
Attributes and Metrics		Scores		Comments	
Buffer and Landscape Context					
Landscape Connectivity (D)		3		Avg=3.3%	
<i>Buffer submetric A: Percent of AA with Buffer</i>	12			92% with buffer	
<i>Buffer submetric B: Average Buffer Width</i>	3			Avg=28.5 meters	
<i>Buffer submetric C: Buffer Condition</i>	6				
D + [C x (A x B)^{1/2}]^{1/2} = Attribute Score		Raw 9	Final 37.5	Final Attribute Score = (Raw Score/24)100	37.5
Hydrology					
Water Source		6			
Hydroperiod or Channel Stability		3			
Hydrologic Connectivity		12			
Attribute Score		Raw 21	Final 58.3	Final Attribute Score = (Raw Score/36)100	58.3
Physical Structure					
Structural Patch Richness		3			
Topographic Complexity		3			
Attribute Score		Raw 6	Final 25	Final Attribute Score = (Raw Score/24)100	25
Biotic Structure					
<i>Plant Community submetric A: Number of Plant Layers</i>	6				
<i>Plant Community submetric B: Number of Co-dominant species</i>	3				
<i>Plant Community submetric C: Percent Invasion</i>	3				
Plant Community Metric <i>(average of submetrics A-C)</i>		4			
Horizontal Interspersion and Zonation		9			
Vertical Biotic Structure		6			
Attribute Score		Raw 19	Final 52.7	Final Attribute Score = (Raw Score/36)100	52.7
Overall AA Score (Average of Final Attribute Scores)				43.4	

Stressor Checklist Worksheet

HYDROLOGY ATTRIBUTE (WITHIN 50 M OF AA)	Present and likely to have negative effect on AA	Significant negative effect on AA
Point Source (PS) discharges (POTW, other non-stormwater discharge)		
Non-point Source (Non-PS) discharges (urban runoff, farm drainage)		
Flow diversions or unnatural inflows		
Dams (reservoirs, detention basins, recharge basins)		
Flow obstructions (culverts, paved stream crossings)		
Weir/drop structure, tide gates		
Dredged inlet/channel		
Engineered channel (riprap, armored channel bank, bed)		
Dike/levees		
Groundwater extraction		
Ditches (borrow, agricultural drainage, mosquito control, etc.)		
Actively managed hydrology		
Comments		

PHYSICAL STRUCTURE ATTRIBUTE (WITHIN 50 M OF AA)	Present and likely to have negative effect on AA	Significant negative effect on AA
Filling or dumping of sediment or soils (N/A for restoration areas)		
Grading/ compaction (N/A for restoration areas)		
Plowing/Discing (N/A for restoration areas)		
Resource extraction (sediment, gravel, oil and/or gas)		
Vegetation management		
Excessive sediment or organic debris from watershed		
Excessive runoff from watershed		
Nutrient impaired (PS or Non-PS pollution)		
Heavy metal impaired (PS or Non-PS pollution)		
Pesticides or trace organics impaired (PS or Non-PS pollution)		
Bacteria and pathogens impaired (PS or Non-PS pollution)		
Trash or refuse		
Comments		

BIOTIC STRUCTURE ATTRIBUTE (WITHIN 50 M OF AA)	Present and likely to have negative effect on AA	Significant negative effect on AA
Mowing, grazing, excessive herbivory (within AA)		
Excessive human visitation		
Predation and habitat destruction by non-native vertebrates (e.g., <i>Virginia opossum</i> and domestic predators, such as feral pets)		
Tree cutting/sapling removal		
Removal of woody debris		
Treatment of non-native and nuisance plant species		
Pesticide application or vector control		
Biological resource extraction or stocking (fisheries, aquaculture)		
Excessive organic debris in matrix (for vernal pools)		
Lack of vegetation management to conserve natural resources		
Lack of treatment of invasive plants adjacent to AA or buffer		
Comments		

BUFFER AND LANDSCAPE CONTEXT ATTRIBUTE (WITHIN 500 M OF AA)	Present and likely to have negative effect on AA	Significant negative effect on AA
Urban residential		
Industrial/commercial		
Military training/Air traffic		
Dams (or other major flow regulation or disruption)		
Dryland farming		
Intensive row-crop agriculture		
Orchards/nurseries		
Commercial feedlots		
Dairies		
Ranching (enclosed livestock grazing or horse paddock or feedlot)		
Transportation corridor		
Rangeland (livestock rangeland also managed for native vegetation)		
Sports fields and urban parklands (golf courses, soccer fields, etc.)		
Passive recreation (bird-watching, hiking, etc.)		
Active recreation (off-road vehicles, mountain biking, hunting, fishing)		
Physical resource extraction (rock, sediment, oil/gas)		
Biological resource extraction (aquaculture, commercial fisheries)		
Comments		

Basic Information Sheet: Perennial Depressional Wetlands

Your Name: G. Peracca					
Assessment Area Name: D212					
Assessment No.		Date (mm/dd/yyyy): 03/06/2012			
Assessment Team Members for This AA					
C. Roberts					
A. Langston					
G. Peracca					
AA Category:					
<input type="checkbox"/> Restoration		<input type="checkbox"/> Mitigation		<input type="checkbox"/> Impacted	
				<input checked="" type="checkbox"/> Other	
Which best describes the type of depressional wetland?					
<input type="checkbox"/> freshwater marsh		<input type="checkbox"/> alkaline marsh		<input type="checkbox"/> alkali flat	
				<input checked="" type="checkbox"/> other (specify): Retention/detention basin	
Which best describes the hydrologic state of the wetland at the time of assessment?					
<input checked="" type="checkbox"/> ponded/inundated		<input type="checkbox"/> saturated soil, but no surface water		<input type="checkbox"/> dry	
What is the apparent hydrologic regime of the wetland?					
<p>Long-duration depressional wetlands are defined as supporting surface water for > 9 months of the year (in > 5 out of 10 years.) Medium-duration depressional wetlands are defined as supporting surface water for between 4 and 9 months of the year. Short-duration wetlands possess surface water between 2 weeks and 4 months of the year.</p>					
<input checked="" type="checkbox"/> long-duration		<input type="checkbox"/> medium-duration		<input type="checkbox"/> short-duration	
Does your wetland connect with the floodplain of a nearby stream? <input type="checkbox"/> yes <input checked="" type="checkbox"/> no*					
*but obviously hydrologically connected to the regional irrigation system					
Is the topographic basin of the wetland <input checked="" type="checkbox"/> distinct or <input type="checkbox"/> indistinct ?					
<p>An indistinct, such as vernal pool complexes and large wet meadows, which may be intricately interspersed with uplands or seemingly homogeneous over very large areas, topographic basin is one that lacks obvious boundaries between wetland and upland. Examples of such features are seasonal, depressional wetlands in very low-gradient landscapes.</p>					
Photo Identification Numbers and Description:					
	Photo ID No.	Description	Latitude	Longitude	Datum
1	1689	North			
2	1687	South			
3	1690	East			
4	1688	West			

Scoring Sheet: Perennial Depressional Wetlands

AA Name: D212		Date: 03/06/2012			
Attributes and Metrics		Scores		Comments	
Buffer and Landscape Context					
Landscape Connectivity (D)		3		Avg=2%	
<i>Buffer submetric A: Percent of AA with Buffer</i>	12			100% with buffer	
<i>Buffer submetric B: Average Buffer Width</i>	3			Avg= 8.9 meters	
<i>Buffer submetric C: Buffer Condition</i>	3				
D + [C x (A x B)^{1/2}]^{1/2} = Attribute Score		Raw 7.2	Final 30	Final Attribute Score = (Raw Score/24)100	30
Hydrology					
Water Source		3			
Hydroperiod or Channel Stability		3			
Hydrologic Connectivity		12			
Attribute Score		Raw 18	Final 50	Final Attribute Score = (Raw Score/36)100	50
Physical Structure					
Structural Patch Richness		6			
Topographic Complexity		9			
Attribute Score		Raw 15	Final 62.5	Final Attribute Score = (Raw Score/24)100	62.5
Biotic Structure					
<i>Plant Community submetric A: Number of Plant Layers</i>	9			3 Layers	
<i>Plant Community submetric B: Number of Co-dominant species</i>	3			3 co-dominant spp.	
<i>Plant Community submetric C: Percent Invasion</i>	3			100% non-native spp.	
Plant Community Metric <i>(average of submetrics A-C)</i>		5			
Horizontal Interspersion and Zonation		12			
Vertical Biotic Structure		6			
Attribute Score		Raw 23	Final 63.9	Final Attribute Score = (Raw Score/36)100	63.9
Overall AA Score (Average of Final Attribute Scores)				51.6	

Stressor Checklist Worksheet

HYDROLOGY ATTRIBUTE (WITHIN 50 M OF AA)	Present and likely to have negative effect on AA	Significant negative effect on AA
Point Source (PS) discharges (POTW, other non-stormwater discharge)		
Non-point Source (Non-PS) discharges (urban runoff, farm drainage)		
Flow diversions or unnatural inflows		
Dams (reservoirs, detention basins, recharge basins)		
Flow obstructions (culverts, paved stream crossings)		
Weir/drop structure, tide gates		
Dredged inlet/channel		
Engineered channel (riprap, armored channel bank, bed)		
Dike/levees		
Groundwater extraction		
Ditches (borrow, agricultural drainage, mosquito control, etc.)		
Actively managed hydrology		
Comments		

PHYSICAL STRUCTURE ATTRIBUTE (WITHIN 50 M OF AA)	Present and likely to have negative effect on AA	Significant negative effect on AA
Filling or dumping of sediment or soils (N/A for restoration areas)		
Grading/ compaction (N/A for restoration areas)		
Plowing/Discing (N/A for restoration areas)		
Resource extraction (sediment, gravel, oil and/or gas)		
Vegetation management		
Excessive sediment or organic debris from watershed		
Excessive runoff from watershed		
Nutrient impaired (PS or Non-PS pollution)		
Heavy metal impaired (PS or Non-PS pollution)		
Pesticides or trace organics impaired (PS or Non-PS pollution)		
Bacteria and pathogens impaired (PS or Non-PS pollution)		
Trash or refuse		
Comments		

BIOTIC STRUCTURE ATTRIBUTE (WITHIN 50 M OF AA)	Present and likely to have negative effect on AA	Significant negative effect on AA
Mowing, grazing, excessive herbivory (within AA)		
Excessive human visitation		
Predation and habitat destruction by non-native vertebrates (e.g., <i>Virginia opossum</i> and domestic predators, such as feral pets)		
Tree cutting/sapling removal		
Removal of woody debris		
Treatment of non-native and nuisance plant species		
Pesticide application or vector control	X	
Biological resource extraction or stocking (fisheries, aquaculture)		
Excessive organic debris in matrix (for vernal pools)		
Lack of vegetation management to conserve natural resources		
Lack of treatment of invasive plants adjacent to AA or buffer		
Comments		

BUFFER AND LANDSCAPE CONTEXT ATTRIBUTE (WITHIN 500 M OF AA)	Present and likely to have negative effect on AA	Significant negative effect on AA
Urban residential		
Industrial/commercial		
Military training/Air traffic		
Dams (or other major flow regulation or disruption)		
Dryland farming		
Intensive row-crop agriculture		
Orchards/nurseries		
Commercial feedlots		
Dairies		
Ranching (enclosed livestock grazing or horse paddock or feedlot)		
Transportation corridor		
Rangeland (livestock rangeland also managed for native vegetation)		
Sports fields and urban parklands (golf courses, soccer fields, etc.)		
Passive recreation (bird-watching, hiking, etc.)		
Active recreation (off-road vehicles, mountain biking, hunting, fishing)		
Physical resource extraction (rock, sediment, oil/gas)		
Biological resource extraction (aquaculture, commercial fisheries)		
Comments		

Basic Information Sheet: Perennial Depressional Wetlands

Your Name: G. Peracca					
Assessment Area Name: D213					
Assessment No.		Date (mm/dd/yyyy): 03/06/2012			
Assessment Team Members for This AA					
A. Langston					
G. Peracca					
C. Roberts					
AA Category:					
<input type="checkbox"/> Restoration <input type="checkbox"/> Mitigation <input type="checkbox"/> Impacted <input checked="" type="checkbox"/> Other					
Which best describes the type of depressional wetland?					
<input type="checkbox"/> freshwater marsh <input type="checkbox"/> alkaline marsh <input type="checkbox"/> alkali flat <input checked="" type="checkbox"/> other (specify): Retention/detention basin					
Which best describes the hydrologic state of the wetland at the time of assessment?					
<input type="checkbox"/> ponded/inundated <input type="checkbox"/> saturated soil, but no surface water <input checked="" type="checkbox"/> dry					
What is the apparent hydrologic regime of the wetland?					
<p>Long-duration depressional wetlands are defined as supporting surface water for > 9 months of the year (in > 5 out of 10 years.) Medium-duration depressional wetlands are defined as supporting surface water for between 4 and 9 months of the year. Short-duration wetlands possess surface water between 2 weeks and 4 months of the year.</p>					
<input type="checkbox"/> long-duration <input type="checkbox"/> medium-duration <input checked="" type="checkbox"/> short-duration					
Does your wetland connect with the floodplain of a nearby stream? <input type="checkbox"/> yes <input checked="" type="checkbox"/> no					
Is the topographic basin of the wetland <input checked="" type="checkbox"/> distinct or <input type="checkbox"/> indistinct ?					
<p>An indistinct, such as vernal pool complexes and large wet meadows, which may be intricately interspersed with uplands or seemingly homogeneous over very large areas, topographic basin is one that lacks obvious boundaries between wetland and upland. Examples of such features are seasonal, depressional wetlands in very low-gradient landscapes.</p>					
Photo Identification Numbers and Description:					
	Photo ID No.	Description	Latitude	Longitude	Datum
1	1683	North			
2	1685	South			
3	1684	East			
4	1686	West			

Scoring Sheet: Perennial Depressional Wetlands

AA Name: D213			Date: 03/06/2012		
Attributes and Metrics		Scores		Comments	
Buffer and Landscape Context					
Landscape Connectivity (D)		3		Avg=1.25%	
<i>Buffer submetric A: Percent of AA with Buffer</i>	12			100% with buffer	
<i>Buffer submetric B: Average Buffer Width</i>	6			Avg=70.6 meters	
<i>Buffer submetric C: Buffer Condition</i>	3				
$D + [C \times (A \times B)^{1/2}]^{1/2} = \text{Attribute Score}$		Raw	Final	Final Attribute Score =	
		8	33.3	(Raw Score/24)100	
				33.3	
Hydrology					
Water Source		3		Receives surface water from rain	
Hydroperiod or Channel Stability		3			
Hydrologic Connectivity		12			
Attribute Score		Raw	Final	Final Attribute Score =	
		18	50	(Raw Score/36)100	
				50	
Physical Structure					
Structural Patch Richness		3		1 patch type	
Topographic Complexity		3			
Attribute Score		Raw	Final	Final Attribute Score =	
		6	25	(Raw Score/24)100	
				25	
Biotic Structure					
<i>Plant Community submetric A: Number of Plant Layers</i>	6			2 Layers	
<i>Plant Community submetric B: Number of Co-dominant species</i>	3			Co-dominant spp.	
<i>Plant Community submetric C: Percent Invasion</i>	3			66.7% non-native spp.	
Plant Community Metric (average of submetrics A-C)		4			
Horizontal Interspersion and Zonation		12			
Vertical Biotic Structure		9		Little to no entrained vegetation	
Attribute Score		Raw	Final	Final Attribute Score =	
		25	69.4	(Raw Score/36)100	
				69.4	
Overall AA Score (Average of Final Attribute Scores)				44.4	

Stressor Checklist Worksheet

HYDROLOGY ATTRIBUTE (WITHIN 50 M OF AA)	Present and likely to have negative effect on AA	Significant negative effect on AA
Point Source (PS) discharges (POTW, other non-stormwater discharge)		
Non-point Source (Non-PS) discharges (urban runoff, farm drainage)		
Flow diversions or unnatural inflows		
Dams (reservoirs, detention basins, recharge basins)		
Flow obstructions (culverts, paved stream crossings)		
Weir/drop structure, tide gates		
Dredged inlet/channel		
Engineered channel (riprap, armored channel bank, bed)		
Dike/levees		
Groundwater extraction		
Ditches (borrow, agricultural drainage, mosquito control, etc.)		
Actively managed hydrology		
Comments		

PHYSICAL STRUCTURE ATTRIBUTE (WITHIN 50 M OF AA)	Present and likely to have negative effect on AA	Significant negative effect on AA
Filling or dumping of sediment or soils (N/A for restoration areas)		
Grading/ compaction (N/A for restoration areas)		
Plowing/Discing (N/A for restoration areas)		
Resource extraction (sediment, gravel, oil and/or gas)		
Vegetation management		
Excessive sediment or organic debris from watershed		
Excessive runoff from watershed		
Nutrient impaired (PS or Non-PS pollution)		
Heavy metal impaired (PS or Non-PS pollution)		
Pesticides or trace organics impaired (PS or Non-PS pollution)		
Bacteria and pathogens impaired (PS or Non-PS pollution)		
Trash or refuse		
Comments		

BIOTIC STRUCTURE ATTRIBUTE (WITHIN 50 M OF AA)	Present and likely to have negative effect on AA	Significant negative effect on AA
Mowing, grazing, excessive herbivory (within AA)		
Excessive human visitation		
Predation and habitat destruction by non-native vertebrates (e.g., <i>Virginia opossum</i> and domestic predators, such as feral pets)		
Tree cutting/sapling removal		
Removal of woody debris		
Treatment of non-native and nuisance plant species		
Pesticide application or vector control	X	
Biological resource extraction or stocking (fisheries, aquaculture)		
Excessive organic debris in matrix (for vernal pools)		
Lack of vegetation management to conserve natural resources		
Lack of treatment of invasive plants adjacent to AA or buffer		
Comments		

BUFFER AND LANDSCAPE CONTEXT ATTRIBUTE (WITHIN 500 M OF AA)	Present and likely to have negative effect on AA	Significant negative effect on AA
Urban residential		
Industrial/commercial		
Military training/Air traffic		
Dams (or other major flow regulation or disruption)		
Dryland farming		
Intensive row-crop agriculture		
Orchards/nurseries		
Commercial feedlots		
Dairies		
Ranching (enclosed livestock grazing or horse paddock or feedlot)		
Transportation corridor		
Rangeland (livestock rangeland also managed for native vegetation)		
Sports fields and urban parklands (golf courses, soccer fields, etc.)		
Passive recreation (bird-watching, hiking, etc.)		
Active recreation (off-road vehicles, mountain biking, hunting, fishing)		
Physical resource extraction (rock, sediment, oil/gas)		
Biological resource extraction (aquaculture, commercial fisheries)		
Comments		

Basic Information Sheet: Perennial Depressional Wetlands

Your Name: A. Langston					
Assessment Area Name: D214					
Assessment No.		Date (mm/dd/yyyy): 03/06/2012			
Assessment Team Members for This AA					
C. Roberts					
A. Langston					
G. Peracca					
AA Category:					
<input type="checkbox"/> Restoration		<input type="checkbox"/> Mitigation		<input checked="" type="checkbox"/> Impacted	<input checked="" type="checkbox"/> Other
Which best describes the type of depressional wetland?					
<input type="checkbox"/> freshwater marsh		<input type="checkbox"/> alkaline marsh		<input type="checkbox"/> alkali flat	<input checked="" type="checkbox"/> other (specify): Retention/detention basin
Which best describes the hydrologic state of the wetland at the time of assessment?					
<input checked="" type="checkbox"/> ponded/inundated		<input type="checkbox"/> saturated soil, but no surface water		<input type="checkbox"/> dry	
What is the apparent hydrologic regime of the wetland?					
<p>Long-duration depressional wetlands are defined as supporting surface water for > 9 months of the year (in > 5 out of 10 years.) Medium-duration depressional wetlands are defined as supporting surface water for between 4 and 9 months of the year. Short-duration wetlands possess surface water between 2 weeks and 4 months of the year.</p>					
<input checked="" type="checkbox"/> long-duration		<input type="checkbox"/> medium-duration		<input type="checkbox"/> short-duration	
Does your wetland connect with the floodplain of a nearby stream? <input type="checkbox"/> yes <input checked="" type="checkbox"/> no					
Is the topographic basin of the wetland <input checked="" type="checkbox"/> distinct or <input type="checkbox"/> indistinct ?					
<p>An indistinct, such as vernal pool complexes and large wet meadows, which may be intricately interspersed with uplands or seemingly homogeneous over very large areas, topographic basin is one that lacks obvious boundaries between wetland and upland. Examples of such features are seasonal, depressional wetlands in very low-gradient landscapes.</p>					
Photo Identification Numbers and Description:					
	Photo ID No.	Description	Latitude	Longitude	Datum
1	1680, 1681	North			
2	1679	South			
3	1676	East			
4	1682	West			

Scoring Sheet: Perennial Depressional Wetlands

AA Name: D214		Date: 03/06/2012			
Attributes and Metrics		Scores		Comments	
Buffer and Landscape Context					
Landscape Connectivity (D)		3		Avg=0%	
<i>Buffer submetric A: Percent of AA with Buffer</i>	12			100% with buffer	
<i>Buffer submetric B: Average Buffer Width</i>	3			Avg=34.4 meters	
<i>Buffer submetric C: Buffer Condition</i>	3				
D + [C x (A x B)^{1/2}]^{1/2} = Attribute Score		Raw 7.2	Final 30	Final Attribute Score = (Raw Score/24)100	30
Hydrology					
Water Source		3			
Hydroperiod or Channel Stability		3			
Hydrologic Connectivity		12			
Attribute Score		Raw 18	Final 50	Final Attribute Score = (Raw Score/36)100	50
Physical Structure					
Structural Patch Richness		3			
Topographic Complexity		3			
Attribute Score		Raw 6	Final 25	Final Attribute Score = (Raw Score/24)100	25
Biotic Structure					
<i>Plant Community submetric A: Number of Plant Layers</i>	3				
<i>Plant Community submetric B: Number of Co-dominant species</i>	3				
<i>Plant Community submetric C: Percent Invasion</i>	12				
Plant Community Metric <i>(average of submetrics A-C)</i>		6			
Horizontal Interspersion and Zonation		3			
Vertical Biotic Structure		3			
Attribute Score		Raw 12	Final 33.3	Final Attribute Score = (Raw Score/36)100	33
Overall AA Score (Average of Final Attribute Scores)				34.6	

Stressor Checklist Worksheet

HYDROLOGY ATTRIBUTE (WITHIN 50 M OF AA)	Present and likely to have negative effect on AA	Significant negative effect on AA
Point Source (PS) discharges (POTW, other non-stormwater discharge)		
Non-point Source (Non-PS) discharges (urban runoff, farm drainage)		
Flow diversions or unnatural inflows		
Dams (reservoirs, detention basins, recharge basins)		
Flow obstructions (culverts, paved stream crossings)		
Weir/drop structure, tide gates		
Dredged inlet/channel		
Engineered channel (riprap, armored channel bank, bed)		
Dike/levees		
Groundwater extraction		
Ditches (borrow, agricultural drainage, mosquito control, etc.)		
Actively managed hydrology		
Comments		

PHYSICAL STRUCTURE ATTRIBUTE (WITHIN 50 M OF AA)	Present and likely to have negative effect on AA	Significant negative effect on AA
Filling or dumping of sediment or soils (N/A for restoration areas)		
Grading/ compaction (N/A for restoration areas)		
Plowing/Discing (N/A for restoration areas)		
Resource extraction (sediment, gravel, oil and/or gas)		
Vegetation management		
Excessive sediment or organic debris from watershed		
Excessive runoff from watershed		
Nutrient impaired (PS or Non-PS pollution)		
Heavy metal impaired (PS or Non-PS pollution)		
Pesticides or trace organics impaired (PS or Non-PS pollution)		
Bacteria and pathogens impaired (PS or Non-PS pollution)		
Trash or refuse		
Comments		

BIOTIC STRUCTURE ATTRIBUTE (WITHIN 50 M OF AA)	Present and likely to have negative effect on AA	Significant negative effect on AA
Mowing, grazing, excessive herbivory (within AA)		
Excessive human visitation		
Predation and habitat destruction by non-native vertebrates (e.g., <i>Virginia opossum</i> and domestic predators, such as feral pets)		
Tree cutting/sapling removal		
Removal of woody debris		
Treatment of non-native and nuisance plant species		
Pesticide application or vector control	X	
Biological resource extraction or stocking (fisheries, aquaculture)		
Excessive organic debris in matrix (for vernal pools)		
Lack of vegetation management to conserve natural resources		
Lack of treatment of invasive plants adjacent to AA or buffer		
Comments		

BUFFER AND LANDSCAPE CONTEXT ATTRIBUTE (WITHIN 500 M OF AA)	Present and likely to have negative effect on AA	Significant negative effect on AA
Urban residential		
Industrial/commercial		
Military training/Air traffic		
Dams (or other major flow regulation or disruption)		
Dryland farming		
Intensive row-crop agriculture	X	
Orchards/nurseries	X	X
Commercial feedlots		
Dairies		
Ranching (enclosed livestock grazing or horse paddock or feedlot)		
Transportation corridor	X	
Rangeland (livestock rangeland also managed for native vegetation)		
Sports fields and urban parklands (golf courses, soccer fields, etc.)		
Passive recreation (bird-watching, hiking, etc.)		
Active recreation (off-road vehicles, mountain biking, hunting, fishing)		
Physical resource extraction (rock, sediment, oil/gas)		
Biological resource extraction (aquaculture, commercial fisheries)		
Comments		

Basic Information Sheet: Riverine Wetlands

Your Name: C. Julian					
CRAM Site ID: FB HST					
Assessment Area Name: R8					
Date (mm/dd/yyyy): 09/23/2011					
Assessment Team Members for This AA					
C. Roberts, C. Julian, J. Love, A. Langston					
Average Bankfull Width: 9 meters					
Approximate Length of AA (10 times bankfull width, min 100 m, max 200 m): 100 meters					
Wetland Sub-type:					
<input type="checkbox"/> Confined <input checked="" type="checkbox"/> Non-confined					
AA Category:					
<input type="checkbox"/> Restoration <input type="checkbox"/> Mitigation <input type="checkbox"/> Impacted <input checked="" type="checkbox"/> Other					
Did the river/stream have flowing water at the time of the assessment? <input type="checkbox"/> yes <input checked="" type="checkbox"/> no					
What is the apparent hydrologic flow regime of the reach you are assessing?					
<p>The hydrologic flow regime of a stream describes the frequency with which the channel conducts water. Perennial streams conduct water all year long, whereas ephemeral streams conduct water only during and immediately following precipitation events. Intermittent streams are dry for part of the year, but conduct water for periods longer than ephemeral streams, as a function of watershed size and water source.</p>					
<input type="checkbox"/> perennial <input type="checkbox"/> ephemeral <input checked="" type="checkbox"/> intermittent					
Photo Identification Numbers and Description:					
	Photo ID No.	Description	Latitude	Longitude	Datum
1	1230	Northeast			
2	1231	Southeast			
3	1228	Southwest			
4	1229	Northwest			

Scoring Sheet: Riverine Wetlands

AA Name: R8		Date: 09/23/2011	
Attributes and Metrics	Scores	Comments	
Buffer and Landscape Context			
Landscape Connectivity	12		
<i>Buffer submetric A: Percent of AA with Buffer</i>	12		
<i>Buffer submetric B: Average Buffer Width</i>	3		
<i>Buffer submetric C: Buffer Condition</i>	6		Disturbed soils, mix of native and non-native vegetation
$D + [C \times (A \times B)^{1/2}]^{1/2} = \text{Attribute Score}$		Raw 18	Final 75
		Final Attribute Score = (Rawcore/24)100	
		75	
Hydrology			
Water Source	6		
Hydroperiod or Channel Stability	9		
Hydrologic Connectivity	12		
Attribute Score		Raw 27	Final 75
		Final Attribute Score = (Raw Score/36)100	
		75	
Physical Structure			
Structural Patch Richness	6		
Topographic Complexity	9		
Attribute Score		Raw 15	Final 63
		Final Attribute Score = (Raw Score/24)100	
		63	
Biotic Structure			
<i>Plant Community submetric A: Number of Plant Layers</i>	9		3 Layers
<i>Plant Community submetric B: Number of Co-dominant species</i>	6		6 co-dominants
<i>Plant Community submetric C: Percent Invasion</i>	9		17% invasion
Plant Community Metric (average of submetrics A-C)	8		
Horizontal Interspersion and Zonation	6		
Vertical Biotic Structure	6		
Attribute Score		Raw 20	Final 56
		Final Attribute Score = (Raw Score/36)100	
		56	
Overall AA Score (Average of Final Attribute Scores)			67.3

Stressor Checklist Worksheet

HYDROLOGY ATTRIBUTE (WITHIN 50 M OF AA)	Present and likely to have negative effect on AA	Significant negative effect on AA
Point Source (PS) discharges (POTW, other non-stormwater)		
Non-point Source (Non-PS) discharges (urban runoff, farm drainage)		
Flow diversions or unnatural inflows		
Dams (reservoirs, detention basins, recharge basins)	X	X
Flow obstructions (culverts, paved stream crossings)	X	X
Weir/drop structure, tide gates	X	X
Dredged inlet/channel		
Engineered channel (riprap, armored channel bank, bed)		
Dike/levees		
Groundwater extraction		
Ditches (borrow, agricultural drainage, mosquito control, etc.)		
Actively managed hydrology	X	X
Comments		

PHYSICAL STRUCTURE ATTRIBUTE (WITHIN 50 M OF AA)	Present and likely to have negative effect on AA	Significant negative effect on AA
Filling or dumping of sediment or soils (N/A for restoration areas)		
Grading/ compaction (N/A for restoration areas)		
Plowing/Discing (N/A for restoration areas)		
Resource extraction (sediment, gravel, oil and/or gas)		
Vegetation management	X	
Excessive sediment or organic debris from watershed	X	X
Excessive runoff from watershed		
Nutrient impaired (PS or Non-PS pollution)		
Heavy metal impaired (PS or Non-PS pollution)		
Pesticides or trace organics impaired (PS or Non-PS pollution)		
Bacteria and pathogens impaired (PS or Non-PS pollution)		
Trash or refuse		
Comments		

BIOTIC STRUCTURE ATTRIBUTE (WITHIN 50 M OF AA)	Present and likely to have negative effect on AA	Significant negative effect on AA
Mowing, grazing, excessive herbivory (within AA)		
Excessive human visitation	X	
Predation and habitat destruction by non-native vertebrates (e.g., Virginia opossum and domestic predators, such as feral pets)		
Tree cutting/sapling removal		
Removal of woody debris		
Treatment of non-native and nuisance plant species		
Pesticide application or vector control		
Biological resource extraction or stocking (fisheries, aquaculture)		
Excessive organic debris in matrix (for vernal pools)		
Lack of vegetation management to conserve natural resources		
Lack of treatment of invasive plants adjacent to AA or buffer		
Comments		

BUFFER AND LANDSCAPE CONTEXT ATTRIBUTE (WITHIN 500 M OF AA)	Present and likely to have negative effect on AA	Significant negative effect on AA
Urban residential		
Industrial/commercial		
Military training/Air traffic		
Dams (or other major flow regulation or disruption)	X	X
Dryland farming		
Intensive row-crop agriculture	X	X
Orchards/nurseries	X	X
Commercial feedlots		
Dairies		
Ranching (enclosed livestock grazing or horse paddock or feedlot)		
Transportation corridor		
Rangeland (livestock rangeland also managed for native vegetation)		
Sports fields and urban parklands (golf courses, soccer fields, etc.)		
Passive recreation (bird-watching, hiking, etc.)		
Active recreation (off-road vehicles, mountain biking, hunting, fishing)	X	
Physical resource extraction (rock, sediment, oil/gas)		
Biological resource extraction (aquaculture, commercial fisheries)		
Comments		

Basic Information Sheet: Riverine Wetlands

Your Name: C. Roberts					
CRAM Site ID: FB HST					
Assessment Area Name: R63A					
Date (mm/dd/yyyy): 09/29/2011					
Assessment Team Members for This AA					
C. Roberts, G. Peracca					
Average Bankfull Width: 6 meters					
Approximate Length of AA (10 times bankfull width, min 100 m, max 200 m): 100 meters					
Wetland Sub-type:					
<input checked="" type="checkbox"/> Confined <input type="checkbox"/> Non-confined					
AA Category:					
<input type="checkbox"/> Restoration <input type="checkbox"/> Mitigation <input type="checkbox"/> Impacted <input checked="" type="checkbox"/> Other					
Did the river/stream have flowing water at the time of the assessment? <input type="checkbox"/> yes <input checked="" type="checkbox"/> no					
What is the apparent hydrologic flow regime of the reach you are assessing?					
<p>The hydrologic flow regime of a stream describes the frequency with which the channel conducts water. Perennial streams conduct water all year long, whereas ephemeral streams conduct water only during and immediately following precipitation events. Intermittent streams are dry for part of the year, but conduct water for periods longer than ephemeral streams, as a function of watershed size and water source.</p>					
<input type="checkbox"/> perennial <input checked="" type="checkbox"/> ephemeral <input type="checkbox"/> intermittent					
Photo Identification Numbers and Description:					
	Photo ID No.	Description	Latitude	Longitude	Datum
1	1308	North			
2	1310	South			
3	1309	East			
4	1307	West			

Scoring Sheet: Riverine Wetlands

AA Name: R63A		Date: 09/29/2011	
Attributes and Metrics	Scores	Comments	
Buffer and Landscape Context			
Landscape Connectivity	12		
<i>Buffer submetric A: Percent of AA with Buffer</i>	12		
<i>Buffer submetric B: Average Buffer Width</i>	12		
<i>Buffer submetric C: Buffer Condition</i>	9		
D + [C x (A x B)^{1/2}]^{1/2} = Attribute Score		Raw 22	Final 93
		Final Attribute Score = (Rawcore/24)100	
		93	
Hydrology			
Water Source	9		
Hydroperiod or Channel Stability	12		
Hydrologic Connectivity	6		
Attribute Score		Raw 27	Final 75
		Final Attribute Score = (Raw Score/36)100	
		75	
Physical Structure			
Structural Patch Richness	3		
Topographic Complexity	6		
Attribute Score		Raw 9	Final 38
		Final Attribute Score = (Raw Score/24)100	
		38	
Biotic Structure			
<i>Plant Community submetric A: Number of Plant Layers</i>	9		3 layers
<i>Plant Community submetric B: Number of Co-dominant species</i>	6		7 co-dominants
<i>Plant Community submetric C: Percent Invasion</i>	3		57% non-native spp.
Plant Community Metric <i>(average of submetrics A-C)</i>	6		
Horizontal Interspersion and Zonation	6		
Vertical Biotic Structure	12		
Attribute Score		Raw 27	Final 67
		Final Attribute Score = (Raw Score/36)100	
		67	
Overall AA Score (Average of Final Attribute Scores)			68.3

Stressor Checklist Worksheet

HYDROLOGY ATTRIBUTE (WITHIN 50 M OF AA)	Present and likely to have negative effect on AA	Significant negative effect on AA
Point Source (PS) discharges (POTW, other non-stormwater)		
Non-point Source (Non-PS) discharges (urban runoff, farm drainage)		
Flow diversions or unnatural inflows		
Dams (reservoirs, detention basins, recharge basins)		
Flow obstructions (culverts, paved stream crossings)		
Weir/drop structure, tide gates		
Dredged inlet/channel		
Engineered channel (riprap, armored channel bank, bed)		
Dike/levees	X	
Groundwater extraction		
Ditches (borrow, agricultural drainage, mosquito control, etc.)		
Actively managed hydrology		
Comments		
RR levee; probably not very significant; AA seems to get adequate water		

PHYSICAL STRUCTURE ATTRIBUTE (WITHIN 50 M OF AA)	Present and likely to have negative effect on AA	Significant negative effect on AA
Filling or dumping of sediment or soils (N/A for restoration areas)		
Grading/ compaction (N/A for restoration areas)	X	
Plowing/Discing (N/A for restoration areas)		
Resource extraction (sediment, gravel, oil and/or gas)		
Vegetation management	X	
Excessive sediment or organic debris from watershed		
Excessive runoff from watershed		
Nutrient impaired (PS or Non-PS pollution)		
Heavy metal impaired (PS or Non-PS pollution)		
Pesticides or trace organics impaired (PS or Non-PS pollution)		
Bacteria and pathogens impaired (PS or Non-PS pollution)		
Trash or refuse		
Comments		
BNSF manages ROW		

BIOTIC STRUCTURE ATTRIBUTE (WITHIN 50 M OF AA)	Present and likely to have negative effect on AA	Significant negative effect on AA
Mowing, grazing, excessive herbivory (within AA)		
Excessive human visitation		
Predation and habitat destruction by non-native vertebrates (e.g., Virginia opossum and domestic predators, such as feral pets)		
Tree cutting/sapling removal		
Removal of woody debris		
Treatment of non-native and nuisance plant species	X	
Pesticide application or vector control	X	
Biological resource extraction or stocking (fisheries, aquaculture)		
Excessive organic debris in matrix (for vernal pools)		
Lack of vegetation management to conserve natural resources		
Lack of treatment of invasive plants adjacent to AA or buffer		
Comments		
BNSF manages veg. in ROW		

BUFFER AND LANDSCAPE CONTEXT ATTRIBUTE (WITHIN 500 M OF AA)	Present and likely to have negative effect on AA	Significant negative effect on AA
Urban residential		
Industrial/commercial		
Military training/Air traffic		
Dams (or other major flow regulation or disruption)		
Dryland farming		
Intensive row-crop agriculture		
Orchards/nurseries	X	
Commercial feedlots		
Dairies		
Ranching (enclosed livestock grazing or horse paddock or feedlot)		
Transportation corridor	X	X
Rangeland (livestock rangeland also managed for native vegetation)		
Sports fields and urban parklands (golf courses, soccer fields, etc.)		
Passive recreation (bird-watching, hiking, etc.)		
Active recreation (off-road vehicles, mountain biking, hunting, fishing)		
Physical resource extraction (rock, sediment, oil/gas)		
Biological resource extraction (aquaculture, commercial fisheries)		
Comments		

Basic Information Sheet: Riverine Wetlands

Your Name: G. Peracca					
CRAM Site ID: FB HST					
Assessment Area Name: R66					
Date (mm/dd/yyyy): 09/29/2011					
Assessment Team Members for This AA					
C. Roberts, G. Peracca					
Average Bankfull Width:					
Approximate Length of AA (10 times bankfull width, min 100 m, max 200 m): 100 meters					
Wetland Sub-type:					
<input checked="" type="checkbox"/> Confined <input type="checkbox"/> Non-confined					
AA Category:					
<input type="checkbox"/> Restoration <input type="checkbox"/> Mitigation <input type="checkbox"/> Impacted <input checked="" type="checkbox"/> Other					
Did the river/stream have flowing water at the time of the assessment? <input type="checkbox"/> yes <input checked="" type="checkbox"/> no					
What is the apparent hydrologic flow regime of the reach you are assessing?					
<p>The hydrologic flow regime of a stream describes the frequency with which the channel conducts water. Perennial streams conduct water all year long, whereas ephemeral streams conduct water only during and immediately following precipitation events. Intermittent streams are dry for part of the year, but conduct water for periods longer than ephemeral streams, as a function of watershed size and water source.</p>					
<input type="checkbox"/> perennial <input type="checkbox"/> ephemeral <input checked="" type="checkbox"/> intermittent					
Photo Identification Numbers and Description:					
	Photo ID No.	Description	Latitude	Longitude	Datum
1	1316	North			
2	1315	South			
3	1317, 1318	East			
4	1319, 1320	West			

Scoring Sheet: Riverine Wetlands

AA Name: R66			Date: 09/29/2011		
Attributes and Metrics		Scores		Comments	
Buffer and Landscape Context					
Landscape Connectivity		12			
<i>Buffer submetric A: Percent of AA with Buffer</i>	12			100%	
<i>Buffer submetric B: Average Buffer Width</i>	9			Avg =140 meters	
<i>Buffer submetric C: Buffer Condition</i>	9				
D + [C x (A x B)^{1/2}]^{1/2} = Attribute Score		Raw 22	Final 90	Final Attribute Score = (Rawcore/24)100	
				90	
Hydrology					
Water Source		9			
Hydroperiod or Channel Stability		9			
Hydrologic Connectivity		6			
Attribute Score		Raw 24	Final 67	Final Attribute Score = (Raw Score/36)100	
				67	
Physical Structure					
Structural Patch Richness		6			
Topographic Complexity		6			
Attribute Score		Raw 12	Final 50	Final Attribute Score = (Raw Score/24)100	
				50	
Biotic Structure					
<i>Plant Community submetric A: Number of Plant Layers</i>	B (9)			3 Layers	
<i>Plant Community submetric B: Number of Co-dominant species</i>	B (9)			8 co-dominants	
<i>Plant Community submetric C: Percent Invasion</i>	D (3)			57% invasion	
Plant Community Metric <i>(average of submetrics A-C)</i>		7			
Horizontal Interspersion and Zonation		9			
Vertical Biotic Structure		6			
Attribute Score		Raw 22	Final 67	Final Attribute Score = (Raw Score/36)100	
				61	
Overall AA Score (Average of Final Attribute Scores)				67	

Stressor Checklist Worksheet

HYDROLOGY ATTRIBUTE (WITHIN 50 M OF AA)	Present and likely to have negative effect on AA	Significant negative effect on AA
Point Source (PS) discharges (POTW, other non-stormwater)		
Non-point Source (Non-PS) discharges (urban runoff, farm drainage)	X	
Flow diversions or unnatural inflows		
Dams (reservoirs, detention basins, recharge basins)		
Flow obstructions (culverts, paved stream crossings)		
Weir/drop structure, tide gates		
Dredged inlet/channel		
Engineered channel (riprap, armored channel bank, bed)		
Dike/levees	X	
Groundwater extraction		
Ditches (borrow, agricultural drainage, mosquito control, etc.)		
Actively managed hydrology		
Comments		

PHYSICAL STRUCTURE ATTRIBUTE (WITHIN 50 M OF AA)	Present and likely to have negative effect on AA	Significant negative effect on AA
Filling or dumping of sediment or soils (N/A for restoration areas)		
Grading/ compaction (N/A for restoration areas)	X	
Plowing/Discing (N/A for restoration areas)		
Resource extraction (sediment, gravel, oil and/or gas)		
Vegetation management	X	
Excessive sediment or organic debris from watershed		
Excessive runoff from watershed		
Nutrient impaired (PS or Non-PS pollution)		
Heavy metal impaired (PS or Non-PS pollution)		
Pesticides or trace organics impaired (PS or Non-PS pollution)		
Bacteria and pathogens impaired (PS or Non-PS pollution)		
Trash or refuse		
Comments		
RR ROW veg. management = removal of plants along railroad berm using herbicides.		

BIOTIC STRUCTURE ATTRIBUTE (WITHIN 50 M OF AA)	Present and likely to have negative effect on AA	Significant negative effect on AA
Mowing, grazing, excessive herbivory (within AA)		
Excessive human visitation		
Predation and habitat destruction by non-native vertebrates (e.g., Virginia opossum and domestic predators, such as feral pets)		
Tree cutting/sapling removal		
Removal of woody debris		
Treatment of non-native and nuisance plant species		
Pesticide application or vector control	X	
Biological resource extraction or stocking (fisheries, aquaculture)		
Excessive organic debris in matrix (for vernal pools)		
Lack of vegetation management to conserve natural resources		
Lack of treatment of invasive plants adjacent to AA or buffer		
Comments		
See physical structure attribute discussion re: herbicides in RR ROW		

BUFFER AND LANDSCAPE CONTEXT ATTRIBUTE (WITHIN 500 M OF AA)	Present and likely to have negative effect on AA	Significant negative effect on AA
Urban residential		
Industrial/commercial		
Military training/Air traffic		
Dams (or other major flow regulation or disruption)		
Dryland farming		
Intensive row-crop agriculture		
Orchards/nurseries	X	
Commercial feedlots		
Dairies		
Ranching (enclosed livestock grazing or horse paddock or feedlot)		
Transportation corridor	X	X
Rangeland (livestock rangeland also managed for native vegetation)		
Sports fields and urban parklands (golf courses, soccer fields, etc.)		
Passive recreation (bird-watching, hiking, etc.)		
Active recreation (off-road vehicles, mountain biking, hunting, fishing)		
Physical resource extraction (rock, sediment, oil/gas)		
Biological resource extraction (aquaculture, commercial fisheries)		
Comments		

Basic Information Sheet: Riverine Wetlands

Your Name: C. Roberts					
CRAM Site ID: FB HST					
Assessment Area Name: R71A					
Date (mm/dd/yyyy): 09/20/2011					
Assessment Team Members for This AA					
C. Roberts, C. Julian, J. Love, A. Langston					
Average Bankfull Width: 4 meters					
Approximate Length of AA (10 times bankfull width, min 100 m, max 200 m): 100 meters					
Wetland Sub-type:					
<input checked="" type="checkbox"/> Confined <input type="checkbox"/> Non-confined					
AA Category:					
<input type="checkbox"/> Restoration <input type="checkbox"/> Mitigation <input type="checkbox"/> Impacted <input checked="" type="checkbox"/> Other					
Did the river/stream have flowing water at the time of the assessment? <input type="checkbox"/> yes <input checked="" type="checkbox"/> no					
What is the apparent hydrologic flow regime of the reach you are assessing?					
<p>The hydrologic flow regime of a stream describes the frequency with which the channel conducts water. Perennial streams conduct water all year long, whereas ephemeral streams conduct water only during and immediately following precipitation events. Intermittent streams are dry for part of the year, but conduct water for periods longer than ephemeral streams, as a function of watershed size and water source.</p>					
<input type="checkbox"/> perennial <input type="checkbox"/> ephemeral <input checked="" type="checkbox"/> intermittent					
Photo Identification Numbers and Description:					
	Photo ID No.	Description	Latitude	Longitude	Datum
1	1189	North			
2	1191	South			
3	1190	East			
4	1192	West			

Scoring Sheet: Riverine Wetlands

AA Name: R71A		Date: 09/20/2011			
Attributes and Metrics		Scores		Comments	
Buffer and Landscape Context					
Landscape Connectivity		12		No Breaks	
<i>Buffer submetric A: Percent of AA with Buffer</i>	12				
<i>Buffer submetric B: Average Buffer Width</i>	12				
<i>Buffer submetric C: Buffer Condition</i>	9				
D + [C x (A x B)^{1/2}]^{1/2} = Attribute Score		Raw 22	Final 93	Final Attribute Score = (Rawcore/24)100	93
Hydrology					
Water Source		12			
Hydroperiod or Channel Stability		9			
Hydrologic Connectivity		9			
Attribute Score		Raw 30	Final 83	Final Attribute Score = (Raw Score/36)100	83
Physical Structure					
Structural Patch Richness		3			
Topographic Complexity		6			
Attribute Score		Raw 9	Final 38	Final Attribute Score = (Raw Score/24)100	38
Biotic Structure					
<i>Plant Community submetric A: Number of Plant Layers</i>	6			2 layers	
<i>Plant Community submetric B: Number of Co-dominant species</i>	3			3 co-dominants	
<i>Plant Community submetric C: Percent Invasion</i>	6			33% non-native spp.	
Plant Community Metric5 (average of submetrics A-C)					
Horizontal Interspersion and Zonation		3			
Vertical Biotic Structure		3			
Attribute Score		Raw 11	Final 31	Final Attribute Score = (Raw Score/36)100	31
Overall AA Score (Average of Final Attribute Scores)				61.3	

Stressor Checklist Worksheet

HYDROLOGY ATTRIBUTE (WITHIN 50 M OF AA)	Present and likely to have negative effect on AA	Significant negative effect on AA
Point Source (PS) discharges (POTW, other non-stormwater)		
Non-point Source (Non-PS) discharges (urban runoff, farm drainage)		
Flow diversions or unnatural inflows		
Dams (reservoirs, detention basins, recharge basins)		
Flow obstructions (culverts, paved stream crossings)	X	
Weir/drop structure, tide gates		
Dredged inlet/channel		
Engineered channel (riprap, armored channel bank, bed)		
Dike/levees	X	
Groundwater extraction		
Ditches (borrow, agricultural drainage, mosquito control, etc.)		
Actively managed hydrology	X	
Comments		

PHYSICAL STRUCTURE ATTRIBUTE (WITHIN 50 M OF AA)	Present and likely to have negative effect on AA	Significant negative effect on AA
Filling or dumping of sediment or soils (N/A for restoration areas)		
Grading/ compaction (N/A for restoration areas)	X	
Plowing/Discing (N/A for restoration areas)		
Resource extraction (sediment, gravel, oil and/or gas)		
Vegetation management		
Excessive sediment or organic debris from watershed		
Excessive runoff from watershed		
Nutrient impaired (PS or Non-PS pollution)		
Heavy metal impaired (PS or Non-PS pollution)		
Pesticides or trace organics impaired (PS or Non-PS pollution)		
Bacteria and pathogens impaired (PS or Non-PS pollution)		
Trash or refuse	X	
Comments		

BIOTIC STRUCTURE ATTRIBUTE (WITHIN 50 M OF AA)	Present and likely to have negative effect on AA	Significant negative effect on AA
Mowing, grazing, excessive herbivory (within AA)		
Excessive human visitation		
Predation and habitat destruction by non-native vertebrates (e.g., Virginia opossum and domestic predators, such as feral pets)		
Tree cutting/sapling removal		
Removal of woody debris		
Treatment of non-native and nuisance plant species		
Pesticide application or vector control		
Biological resource extraction or stocking (fisheries, aquaculture)		
Excessive organic debris in matrix (for vernal pools)		
Lack of vegetation management to conserve natural resources		
Lack of treatment of invasive plants adjacent to AA or buffer		
Comments		

BUFFER AND LANDSCAPE CONTEXT ATTRIBUTE (WITHIN 500 M OF AA)	Present and likely to have negative effect on AA	Significant negative effect on AA
Urban residential		
Industrial/commercial		
Military training/Air traffic		
Dams (or other major flow regulation or disruption)		
Dryland farming	X	
Intensive row-crop agriculture		
Orchards/nurseries		
Commercial feedlots		
Dairies		
Ranching (enclosed livestock grazing or horse paddock or feedlot)		
Transportation corridor		
Rangeland (livestock rangeland also managed for native vegetation)		
Sports fields and urban parklands (golf courses, soccer fields, etc.)		
Passive recreation (bird-watching, hiking, etc.)		
Active recreation (off-road vehicles, mountain biking, hunting, fishing)		
Physical resource extraction (rock, sediment, oil/gas)		
Biological resource extraction (aquaculture, commercial fisheries)		
Comments		

Basic Information Sheet: Riverine Wetlands

Your Name: J. Love					
CRAM Site ID: FB HST					
Assessment Area Name: R146					
Date (mm/dd/yyyy): 09/22/2011					
Assessment Team Members for This AA					
C. Roberts, C. Julian, J. Love, A. Langston					
Average Bankfull Width:					
Approximate Length of AA (10 times bankfull width, min 100 m, max 200 m): 100 meters					
Wetland Sub-type:					
<input checked="" type="checkbox"/> Confined <input type="checkbox"/> Non-confined					
AA Category:					
<input type="checkbox"/> Restoration <input type="checkbox"/> Mitigation <input type="checkbox"/> Impacted <input checked="" type="checkbox"/> Other					
Did the river/stream have flowing water at the time of the assessment? <input type="checkbox"/> yes <input checked="" type="checkbox"/> no					
What is the apparent hydrologic flow regime of the reach you are assessing?					
<p>The hydrologic flow regime of a stream describes the frequency with which the channel conducts water. Perennial streams conduct water all year long, whereas ephemeral streams conduct water only during and immediately following precipitation events. Intermittent streams are dry for part of the year, but conduct water for periods longer than ephemeral streams, as a function of watershed size and water source.</p>					
<input type="checkbox"/> perennial <input type="checkbox"/> ephemeral <input checked="" type="checkbox"/> intermittent					
Photo Identification Numbers and Description:					
	Photo ID No.	Description	Latitude	Longitude	Datum
1	1213	North			
2	1215	South			
3	1214	East			
4	NO ACCESS	West			

Scoring Sheet: Riverine Wetlands

AA Name: R146		Date: 09/22/2011		
Attributes and Metrics	Scores	Comments		
Buffer and Landscape Context				
Landscape Connectivity	3			
<i>Buffer submetric A: Percent of AA with Buffer</i>	9		RR on W is a main line with w/ riprap which we didn't count as buffer. E side is dirt road	
<i>Buffer submetric B: Average Buffer Width</i>	3			
<i>Buffer submetric C: Buffer Condition</i>	3			
$D + [C \times (A \times B)^{1/2}]^{1/2} = \text{Attribute Score}$	Raw 7	Final 29	Final Attribute Score = (Rawcore/24)100	29
Hydrology				
Water Source	9			
Hydroperiod or Channel Stability	6			
Hydrologic Connectivity	6			
Attribute Score	Raw 21	Final 58	Final Attribute Score = (Raw Score/36)100	58
Physical Structure				
Structural Patch Richness	3			
Topographic Complexity	6			
Attribute Score	Raw 9	Final 38	Final Attribute Score = (Raw Score/24)100	38
Biotic Structure				
<i>Plant Community submetric A: Number of Plant Layers</i>	9		3 Layers	
<i>Plant Community submetric B: Number of Co-dominant species</i>	3		4 co-dominants	
<i>Plant Community submetric C: Percent Invasion</i>	3		50% invasion	
Plant Community Metric <i>(average of submetrics A-C)</i>	5			
Horizontal Interspersion and Zonation	6			
Vertical Biotic Structure	6			
Attribute Score	Raw 17	Final 47	Final Attribute Score = (Raw Score/36)100	47
Overall AA Score (Average of Final Attribute Scores)			43	

Stressor Checklist Worksheet

HYDROLOGY ATTRIBUTE (WITHIN 50 M OF AA)	Present and likely to have negative effect on AA	Significant negative effect on AA
Point Source (PS) discharges (POTW, other non-stormwater)		
Non-point Source (Non-PS) discharges (urban runoff, farm drainage)		
Flow diversions or unnatural inflows		
Dams (reservoirs, detention basins, recharge basins)		
Flow obstructions (culverts, paved stream crossings)		
Weir/drop structure, tide gates		
Dredged inlet/channel		
Engineered channel (riprap, armored channel bank, bed)		
Dike/levees	X	X
Groundwater extraction		
Ditches (borrow, agricultural drainage, mosquito control, etc.)		
Actively managed hydrology		
Comments		
RR is built on a levee		

PHYSICAL STRUCTURE ATTRIBUTE (WITHIN 50 M OF AA)	Present and likely to have negative effect on AA	Significant negative effect on AA
Filling or dumping of sediment or soils (N/A for restoration areas)		
Grading/ compaction (N/A for restoration areas)	X	X
Plowing/Discing (N/A for restoration areas)		
Resource extraction (sediment, gravel, oil and/or gas)		
Vegetation management	X	X
Excessive sediment or organic debris from watershed		
Excessive runoff from watershed		
Nutrient impaired (PS or Non-PS pollution)		
Heavy metal impaired (PS or Non-PS pollution)		
Pesticides or trace organics impaired (PS or Non-PS pollution)	X	X
Bacteria and pathogens impaired (PS or Non-PS pollution)		
Trash or refuse	X	
Comments		
Grading/compaction due to roads adjacent; veg removal seen on site; herbicides from orchards trash		

BIOTIC STRUCTURE ATTRIBUTE (WITHIN 50 M OF AA)	Present and likely to have negative effect on AA	Significant negative effect on AA
Mowing, grazing, excessive herbivory (within AA)		
Excessive human visitation		
Predation and habitat destruction by non-native vertebrates (e.g., Virginia opossum and domestic predators, such as feral pets)		
Tree cutting/sapling removal		
Removal of woody debris		
Treatment of non-native and nuisance plant species	X	
Pesticide application or vector control	X	X
Biological resource extraction or stocking (fisheries, aquaculture)		
Excessive organic debris in matrix (for vernal pools)		
Lack of vegetation management to conserve natural resources		
Lack of treatment of invasive plants adjacent to AA or buffer		
Comments		
Herbicides from orchards; veg removal seen on-site		

BUFFER AND LANDSCAPE CONTEXT ATTRIBUTE (WITHIN 500 M OF AA)	Present and likely to have negative effect on AA	Significant negative effect on AA
Urban residential		
Industrial/commercial		
Military training/Air traffic		
Dams (or other major flow regulation or disruption)		
Dryland farming		
Intensive row-crop agriculture		
Orchards/nurseries	X	X
Commercial feedlots		
Dairies		
Ranching (enclosed livestock grazing or horse paddock or feedlot)		
Transportation corridor	X	X
Rangeland (livestock rangeland also managed for native vegetation)		
Sports fields and urban parklands (golf courses, soccer fields, etc.)		
Passive recreation (bird-watching, hiking, etc.)		
Active recreation (off-road vehicles, mountain biking, hunting, fishing)		
Physical resource extraction (rock, sediment, oil/gas)		
Biological resource extraction (aquaculture, commercial fisheries)		
Comments		
Orchards; RR adjacent to AA and SR 43 nearby		

Basic Information Sheet: Riverine Wetlands

Your Name: C. Roberts					
CRAM Site ID: FB HST					
Assessment Area Name: R149					
Date (mm/dd/yyyy): 09/20/2011					
Assessment Team Members for This AA					
C. Roberts, C. Julian, J. Love, A. Langston					
Average Bankfull Width: 9 meters					
Approximate Length of AA (10 times bankfull width, min 100 m, max 200 m): 100 meters					
Wetland Sub-type:					
<input type="checkbox"/> Confined <input checked="" type="checkbox"/> Non-confined					
AA Category:					
<input type="checkbox"/> Restoration <input type="checkbox"/> Mitigation <input type="checkbox"/> Impacted <input checked="" type="checkbox"/> Other					
Did the river/stream have flowing water at the time of the assessment? <input type="checkbox"/> yes <input checked="" type="checkbox"/> no					
What is the apparent hydrologic flow regime of the reach you are assessing?					
<p>The hydrologic flow regime of a stream describes the frequency with which the channel conducts water. Perennial streams conduct water all year long, whereas ephemeral streams conduct water only during and immediately following precipitation events. Intermittent streams are dry for part of the year, but conduct water for periods longer than ephemeral streams, as a function of watershed size and water source.</p>					
<input type="checkbox"/> perennial <input type="checkbox"/> ephemeral <input checked="" type="checkbox"/> intermittent					
Photo Identification Numbers and Description:					
	Photo ID No.	Description	Latitude	Longitude	Datum
1	1193	North			
2	1194	South			
3	1195	East			
4	1196	West			

Scoring Sheet: Riverine Wetlands

AA Name: R149			Date: 09/20/2011		
Attributes and Metrics		Scores		Comments	
Buffer and Landscape Context					
Landscape Connectivity		12		70m break upstream	
<i>Buffer submetric A: Percent of AA with Buffer</i>	3			functionally no buffer	
<i>Buffer submetric B: Average Buffer Width</i>	3				
<i>Buffer submetric C: Buffer Condition</i>	3				
D + [C x (A x B)^{1/2}]^{1/2} = Attribute Score		Raw 15	Final 63	Final Attribute Score = (Rawcore/24)100	63
Hydrology					
Water Source		6			
Hydroperiod or Channel Stability		9			
Hydrologic Connectivity		9			
Attribute Score		Raw 24	Final 67	Final Attribute Score = (Raw Score/36)100	67
Physical Structure					
Structural Patch Richness		3			
Topographic Complexity		9			
Attribute Score		Raw 12	Final 50	Final Attribute Score = (Raw Score/24)100	50
Biotic Structure					
<i>Plant Community submetric A: Number of Plant Layers</i>	9			3 layers	
<i>Plant Community submetric B: Number of Co-dominant species</i>	6			6 co-dominants	
<i>Plant Community submetric C: Percent Invasion</i>	9			17% invasion	
Plant Community Metric <i>(average of submetrics A-C)</i>		8			
Horizontal Interspersion and Zonation		9			
Vertical Biotic Structure		9			
Attribute Score		Raw 26	Final 72	Final Attribute Score = (Raw Score/36)100	72
Overall AA Score (Average of Final Attribute Scores)				63	

Stressor Checklist Worksheet

HYDROLOGY ATTRIBUTE (WITHIN 50 M OF AA)	Present and likely to have negative effect on AA	Significant negative effect on AA
Point Source (PS) discharges (POTW, other non-stormwater)		
Non-point Source (Non-PS) discharges (urban runoff, farm drainage)		
Flow diversions or unnatural inflows		
Dams (reservoirs, detention basins, recharge basins)		
Flow obstructions (culverts, paved stream crossings)		
Weir/drop structure, tide gates		
Dredged inlet/channel		
Engineered channel (riprap, armored channel bank, bed)	X	
Dike/levees	X	
Groundwater extraction		
Ditches (borrow, agricultural drainage, mosquito control, etc.)		
Actively managed hydrology		
Comments		
Channel modified for drainage, but still relatively natural		

PHYSICAL STRUCTURE ATTRIBUTE (WITHIN 50 M OF AA)	Present and likely to have negative effect on AA	Significant negative effect on AA
Filling or dumping of sediment or soils (N/A for restoration areas)		
Grading/ compaction (N/A for restoration areas)		
Plowing/Discing (N/A for restoration areas)		
Resource extraction (sediment, gravel, oil and/or gas)		
Vegetation management	X	
Excessive sediment or organic debris from watershed		
Excessive runoff from watershed		
Nutrient impaired (PS or Non-PS pollution)		
Heavy metal impaired (PS or Non-PS pollution)		
Pesticides or trace organics impaired (PS or Non-PS pollution)		
Bacteria and pathogens impaired (PS or Non-PS pollution)		
Trash or refuse		
Comments		
Managing vegetation on levees		

BIOTIC STRUCTURE ATTRIBUTE (WITHIN 50 M OF AA)	Present and likely to have negative effect on AA	Significant negative effect on AA
Mowing, grazing, excessive herbivory (within AA)		
Excessive human visitation		
Predation and habitat destruction by non-native vertebrates (e.g., Virginia opossum and domestic predators, such as feral pets)		
Tree cutting/sapling removal		
Removal of woody debris	X	
Treatment of non-native and nuisance plant species		
Pesticide application or vector control		
Biological resource extraction or stocking (fisheries, aquaculture)		
Excessive organic debris in matrix (for vernal pools)		
Lack of vegetation management to conserve natural resources		
Lack of treatment of invasive plants adjacent to AA or buffer		
Comments		

BUFFER AND LANDSCAPE CONTEXT ATTRIBUTE (WITHIN 500 M OF AA)	Present and likely to have negative effect on AA	Significant negative effect on AA
Urban residential		
Industrial/commercial		
Military training/Air traffic		
Dams (or other major flow regulation or disruption)		
Dryland farming		
Intensive row-crop agriculture		
Orchards/nurseries	X	X
Commercial feedlots		
Dairies		
Ranching (enclosed livestock grazing or horse paddock or feedlot)		
Transportation corridor	X	
Rangeland (livestock rangeland also managed for native vegetation)		
Sports fields and urban parklands (golf courses, soccer fields, etc.)		
Passive recreation (bird-watching, hiking, etc.)		
Active recreation (off-road vehicles, mountain biking, hunting, fishing)		
Physical resource extraction (rock, sediment, oil/gas)		
Biological resource extraction (aquaculture, commercial fisheries)		
Comments		

Basic Information Sheet: Riverine Wetlands

Your Name: C. Roberts					
CRAM Site ID: FB HST					
Assessment Area Name: R150					
Date (mm/dd/yyyy): 09/26/2011					
Assessment Team Members for This AA					
J. Whitfield, A. Langston, G. Peracca					
Average Bankfull Width: 9.5 meters					
Approximate Length of AA (10 times bankfull width, min 100 m, max 200 m): 100 meters					
Wetland Sub-type:					
<input checked="" type="checkbox"/> Confined <input type="checkbox"/> Non-confined					
AA Category:					
<input type="checkbox"/> Restoration <input type="checkbox"/> Mitigation <input type="checkbox"/> Impacted <input checked="" type="checkbox"/> Other					
Did the river/stream have flowing water at the time of the assessment? <input type="checkbox"/> yes <input checked="" type="checkbox"/> no					
What is the apparent hydrologic flow regime of the reach you are assessing?					
The hydrologic flow regime of a stream describes the frequency with which the channel conducts water. Perennial streams conduct water all year long, whereas ephemeral streams conduct water only during and immediately following precipitation events. Intermittent streams are dry for part of the year, but conduct water for periods longer than ephemeral streams, as a function of watershed size and water source.					
<input type="checkbox"/> perennial <input type="checkbox"/> ephemeral <input checked="" type="checkbox"/> intermittent					
Photo Identification Numbers and Description:					
	Photo ID No.	Description	Latitude	Longitude	Datum
1	1241	NE			
2	1242	NW			
3	1246	SE			
4	1244	SW			

Scoring Sheet: Riverine Wetlands

AA Name: R150		Date: 09/26/2011	
Attributes and Metrics	Scores	Comments	
Buffer and Landscape Context			
Landscape Connectivity	12		
<i>Buffer submetric A: Percent of AA with Buffer</i>	12		
<i>Buffer submetric B: Average Buffer Width</i>	3		
<i>Buffer submetric C: Buffer Condition</i>	6		
D + [C x (A x B)^{1/2}]^{1/2} = Attribute Score		Raw 18	Final 75
		Final Attribute Score = (Rawcore/24)100	
		75	
Hydrology			
Water Source	6		
Hydroperiod or Channel Stability	9		
Hydrologic Connectivity	9		
Attribute Score		Raw 24	Final 67
		Final Attribute Score = (Raw Score/36)100	
		67	
Physical Structure			
Structural Patch Richness	3		
Topographic Complexity	9		
Attribute Score		Raw 12	Final 50
		Final Attribute Score = (Raw Score/24)100	
		50	
Biotic Structure			
<i>Plant Community submetric A: Number of Plant Layers</i>	9		3 Layers
<i>Plant Community submetric B: Number of Co-dominant species</i>	3		6 co-dominants
<i>Plant Community submetric C: Percent Invasion</i>	9		16% invasion
Plant Community Metric <i>(average of submetrics A-C)</i>	7		
Horizontal Interspersion and Zonation	6		
Vertical Biotic Structure	6		
Attribute Score		Raw 19	Final 53
		Final Attribute Score = (Raw Score/36)100	
		53	
Overall AA Score (Average of Final Attribute Scores)			61.3

Stressor Checklist Worksheet

HYDROLOGY ATTRIBUTE (WITHIN 50 M OF AA)	Present and likely to have negative effect on AA	Significant negative effect on AA
Point Source (PS) discharges (POTW, other non-stormwater)		
Non-point Source (Non-PS) discharges (urban runoff, farm drainage)	X	
Flow diversions or unnatural inflows		
Dams (reservoirs, detention basins, recharge basins)		
Flow obstructions (culverts, paved stream crossings)		
Weir/drop structure, tide gates		
Dredged inlet/channel		
Engineered channel (riprap, armored channel bank, bed)	X	
Dike/levees	X	X
Groundwater extraction		
Ditches (borrow, agricultural drainage, mosquito control, etc.)		
Actively managed hydrology		
Comments		
Leveed AA		

PHYSICAL STRUCTURE ATTRIBUTE (WITHIN 50 M OF AA)	Present and likely to have negative effect on AA	Significant negative effect on AA
Filling or dumping of sediment or soils (N/A for restoration areas)		
Grading/ compaction (N/A for restoration areas)		
Plowing/Discing (N/A for restoration areas)		
Resource extraction (sediment, gravel, oil and/or gas)		
Vegetation management	X	
Excessive sediment or organic debris from watershed	X	X
Excessive runoff from watershed		
Nutrient impaired (PS or Non-PS pollution)		
Heavy metal impaired (PS or Non-PS pollution)		
Pesticides or trace organics impaired (PS or Non-PS pollution)		
Bacteria and pathogens impaired (PS or Non-PS pollution)		
Trash or refuse	X	
Comments		
Tree cutting see biotic structures		

BIOTIC STRUCTURE ATTRIBUTE (WITHIN 50 M OF AA)	Present and likely to have negative effect on AA	Significant negative effect on AA
Mowing, grazing, excessive herbivory (within AA)		
Excessive human visitation		
Predation and habitat destruction by non-native vertebrates (e.g., Virginia opossum and domestic predators, such as feral pets)		
Tree cutting/sapling removal	X	
Removal of woody debris	X	
Treatment of non-native and nuisance plant species		
Pesticide application or vector control		
Biological resource extraction or stocking (fisheries, aquaculture)		
Excessive organic debris in matrix (for vernal pools)		
Lack of vegetation management to conserve natural resources		
Lack of treatment of invasive plants adjacent to AA or buffer		
Comments		
Vegetation management		

BUFFER AND LANDSCAPE CONTEXT ATTRIBUTE (WITHIN 500 M OF AA)	Present and likely to have negative effect on AA	Significant negative effect on AA
Urban residential		
Industrial/commercial		
Military training/Air traffic		
Dams (or other major flow regulation or disruption)		
Dryland farming		
Intensive row-crop agriculture		
Orchards/nurseries	X	
Commercial feedlots		
Dairies		
Ranching (enclosed livestock grazing or horse paddock or feedlot)		
Transportation corridor	X	
Rangeland (livestock rangeland also managed for native vegetation)		
Sports fields and urban parklands (golf courses, soccer fields, etc.)		
Passive recreation (bird-watching, hiking, etc.)		
Active recreation (off-road vehicles, mountain biking, hunting, fishing)		
Physical resource extraction (rock, sediment, oil/gas)		
Biological resource extraction (aquaculture, commercial fisheries)		
Comments		

Basic Information Sheet: Riverine Wetlands

Your Name: G. Peracca					
CRAM Site ID: FB HST					
Assessment Area Name: R157A					
Date (mm/dd/yyyy): 09/28/2011					
Assessment Team Members for This AA					
C. Roberts, A. Langston, G. Peracca					
Average Bankfull Width: 140 meters					
Approximate Length of AA (10 times bankfull width, min 100 m, max 200 m): 200 meters					
Wetland Sub-type:					
<input checked="" type="checkbox"/> Confined <input type="checkbox"/> Non-confined					
AA Category:					
<input type="checkbox"/> Restoration <input type="checkbox"/> Mitigation <input type="checkbox"/> Impacted <input checked="" type="checkbox"/> Other					
Did the river/stream have flowing water at the time of the assessment? <input checked="" type="checkbox"/> yes <input type="checkbox"/> no					
What is the apparent hydrologic flow regime of the reach you are assessing?					
<p>The hydrologic flow regime of a stream describes the frequency with which the channel conducts water. Perennial streams conduct water all year long, whereas ephemeral streams conduct water only during and immediately following precipitation events. Intermittent streams are dry for part of the year, but conduct water for periods longer than ephemeral streams, as a function of watershed size and water source.</p>					
<input checked="" type="checkbox"/> perennial <input type="checkbox"/> ephemeral <input type="checkbox"/> intermittent					
Photo Identification Numbers and Description:					
	Photo ID No.	Description	Latitude	Longitude	Datum
1	1288	North			
2	n/a	South			
3	1290	East			
4	1287	West			

Scoring Sheet: Riverine Wetlands

AA Name: R157A		Date: 09/28/2011	
Attributes and Metrics	Scores	Comments	
Buffer and Landscape Context			
Landscape Connectivity	9		
<i>Buffer submetric A: Percent of AA with Buffer</i>	12		
<i>Buffer submetric B: Average Buffer Width</i>	6		
<i>Buffer submetric C: Buffer Condition</i>	3		Urban park landscape
$D + [C \times (A \times B)^{1/2}]^{1/2} = \text{Attribute Score}$		Raw 14	Final 59
		Final Attribute Score = (Rawcore/24)100	
		59	
Hydrology			
Water Source	6		
Hydroperiod or Channel Stability	9		
Hydrologic Connectivity	9		
Attribute Score		Raw 24	Final 67
		Final Attribute Score = (Raw Score/36)100	
		67	
Physical Structure			
Structural Patch Richness	3		
Topographic Complexity	12		
Attribute Score		Raw 15	Final 63
		Final Attribute Score = (Raw Score/24)100	
		63	
Biotic Structure			
<i>Plant Community submetric A: Number of Plant Layers</i>	12		4 layers
<i>Plant Community submetric B: Number of Co-dominant species</i>	9		9 co-dominant spp.
<i>Plant Community submetric C: Percent Invasion</i>	12		0% non-native spp.
Plant Community Metric (average of submetrics A-C)		11	
Horizontal Interspersion and Zonation	9		
Vertical Biotic Structure	6		
Attribute Score		Raw 26	Final 72
		Final Attribute Score = (Raw Score/36)100	
		72	
Overall AA Score (Average of Final Attribute Scores)			65.3

Stressor Checklist Worksheet

HYDROLOGY ATTRIBUTE (WITHIN 50 M OF AA)	Present and likely to have negative effect on AA	Significant negative effect on AA
Point Source (PS) discharges (POTW, other non-stormwater)		
Non-point Source (Non-PS) discharges (urban runoff, farm drainage)		
Flow diversions or unnatural inflows		
Dams (reservoirs, detention basins, recharge basins)		
Flow obstructions (culverts, paved stream crossings)		
Weir/drop structure, tide gates		
Dredged inlet/channel		
Engineered channel (riprap, armored channel bank, bed)		
Dike/levees		
Groundwater extraction		
Ditches (borrow, agricultural drainage, mosquito control, etc.)		
Actively managed hydrology		
Comments		

PHYSICAL STRUCTURE ATTRIBUTE (WITHIN 50 M OF AA)	Present and likely to have negative effect on AA	Significant negative effect on AA
Filling or dumping of sediment or soils (N/A for restoration areas)		
Grading/ compaction (N/A for restoration areas)		
Plowing/Discing (N/A for restoration areas)		
Resource extraction (sediment, gravel, oil and/or gas)		
Vegetation management		
Excessive sediment or organic debris from watershed		
Excessive runoff from watershed		
Nutrient impaired (PS or Non-PS pollution)		
Heavy metal impaired (PS or Non-PS pollution)		
Pesticides or trace organics impaired (PS or Non-PS pollution)		
Bacteria and pathogens impaired (PS or Non-PS pollution)		
Trash or refuse	X	
Comments		

BIOTIC STRUCTURE ATTRIBUTE (WITHIN 50 M OF AA)	Present and likely to have negative effect on AA	Significant negative effect on AA
Mowing, grazing, excessive herbivory (within AA)		
Excessive human visitation	X	X
Predation and habitat destruction by non-native vertebrates (e.g., Virginia opossum and domestic predators, such as feral pets)		
Tree cutting/sapling removal		
Removal of woody debris		
Treatment of non-native and nuisance plant species		
Pesticide application or vector control		
Biological resource extraction or stocking (fisheries, aquaculture)		
Excessive organic debris in matrix (for vernal pools)		
Lack of vegetation management to conserve natural resources		
Lack of treatment of invasive plants adjacent to AA or buffer		
Comments		
Human visitation impact is related to adjacent urban park.		

BUFFER AND LANDSCAPE CONTEXT ATTRIBUTE (WITHIN 500 M OF AA)	Present and likely to have negative effect on AA	Significant negative effect on AA
Urban residential	X	
Industrial/commercial	X	
Military training/Air traffic		
Dams (or other major flow regulation or disruption)		
Dryland farming		
Intensive row-crop agriculture		
Orchards/nurseries		
Commercial feedlots		
Dairies		
Ranching (enclosed livestock grazing or horse paddock or feedlot)		
Transportation corridor	X	
Rangeland (livestock rangeland also managed for native vegetation)		
Sports fields and urban parklands (golf courses, soccer fields, etc.)	X	X
Passive recreation (bird-watching, hiking, etc.)	X	
Active recreation (off-road vehicles, mountain biking, hunting, fishing)		
Physical resource extraction (rock, sediment, oil/gas)	X	
Biological resource extraction (aquaculture, commercial fisheries)		
Comments		
Urban park is related to human visitation above in Biotic Structure Attribute.		

Basic Information Sheet: Riverine Wetlands

Your Name: C. Roberts					
CRAM Site ID: FB HST					
Assessment Area Name: R160					
Date (mm/dd/yyyy): 09/29/2011					
Assessment Team Members for This AA					
C. Roberts, A. Langston, G. Peracca					
Average Bankfull Width: 130 meters					
Approximate Length of AA (10 times bankfull width, min 100 m, max 200 m): 300 meters					
Wetland Sub-type:					
<input checked="" type="checkbox"/> Confined <input type="checkbox"/> Non-confined					
AA Category:					
<input type="checkbox"/> Restoration <input type="checkbox"/> Mitigation <input type="checkbox"/> Impacted <input checked="" type="checkbox"/> Other					
Did the river/stream have flowing water at the time of the assessment? <input checked="" type="checkbox"/> yes <input type="checkbox"/> no					
What is the apparent hydrologic flow regime of the reach you are assessing?					
<p>The hydrologic flow regime of a stream describes the frequency with which the channel conducts water. Perennial streams conduct water all year long, whereas ephemeral streams conduct water only during and immediately following precipitation events. Intermittent streams are dry for part of the year, but conduct water for periods longer than ephemeral streams, as a function of watershed size and water source.</p>					
<input checked="" type="checkbox"/> perennial <input type="checkbox"/> ephemeral <input type="checkbox"/> intermittent					
Photo Identification Numbers and Description:					
	Photo ID No.	Description	Latitude	Longitude	Datum
1	N/A	North			
2	N/A	South			
3	1291	East			
4	1292	West			
5	1293	General			
6	1294	General			

Scoring Sheet: Riverine Wetlands

AA Name: R160		Date: 09/28/2011	
Attributes and Metrics	Scores	Comments	
Buffer and Landscape Context			
Landscape Connectivity	12		
<i>Buffer submetric A: Percent of AA with Buffer</i>	12		
<i>Buffer submetric B: Average Buffer Width</i>	3		Average = 45m
<i>Buffer submetric C: Buffer Condition</i>	6		
$D + [C \times (A \times B)^{1/2}]^{1/2} = \text{Attribute Score}$	Raw 18	Final 75	Final Attribute Score = (Rawcore/24)100 75
Hydrology			
Water Source	6		
Hydroperiod or Channel Stability	6		
Hydrologic Connectivity	6		
Attribute Score	Raw 18	Final 50	Final Attribute Score = (Raw Score/36)100 50
Physical Structure			
Structural Patch Richness	3		
Topographic Complexity	9		
Attribute Score	Raw 12	Final 50	Final Attribute Score = (Raw Score/24)100 50
Biotic Structure			
<i>Plant Community submetric A: Number of Plant Layers</i>	9		3 layers
<i>Plant Community submetric B: Number of Co-dominant species</i>	6		6 co-dominant spp.
<i>Plant Community submetric C: Percent Invasion</i>	12		0% non-native spp.
Plant Community Metric <i>(average of submetrics A-C)</i>	9		
Horizontal Interspersion and Zonation	6		
Vertical Biotic Structure	9		
Attribute Score	Raw 24	Final	Final Attribute Score = (Raw Score/36)100 67
Overall AA Score (Average of Final Attribute Scores)			60.5

Stressor Checklist Worksheet

HYDROLOGY ATTRIBUTE (WITHIN 50 M OF AA)	Present and likely to have negative effect on AA	Significant negative effect on AA
Point Source (PS) discharges (POTW, other non-stormwater)		
Non-point Source (Non-PS) discharges (urban runoff, farm drainage)		
Flow diversions or unnatural inflows		
Dams (reservoirs, detention basins, recharge basins)		
Flow obstructions (culverts, paved stream crossings)		
Weir/drop structure, tide gates		
Dredged inlet/channel		
Engineered channel (riprap, armored channel bank, bed)		
Dike/levees	X	
Groundwater extraction		
Ditches (borrow, agricultural drainage, mosquito control, etc.)		
Actively managed hydrology		
Comments		
Leveed		

PHYSICAL STRUCTURE ATTRIBUTE (WITHIN 50 M OF AA)	Present and likely to have negative effect on AA	Significant negative effect on AA
Filling or dumping of sediment or soils (N/A for restoration areas)		
Grading/ compaction (N/A for restoration areas)	X	X
Plowing/Discing (N/A for restoration areas)		
Resource extraction (sediment, gravel, oil and/or gas)		
Vegetation management		
Excessive sediment or organic debris from watershed		
Excessive runoff from watershed	X	
Nutrient impaired (PS or Non-PS pollution)		
Heavy metal impaired (PS or Non-PS pollution)		
Pesticides or trace organics impaired (PS or Non-PS pollution)		
Bacteria and pathogens impaired (PS or Non-PS pollution)		
Trash or refuse	X	
Comments		
Grading active on opposite bank. Oil wells in vicinity.		

BIOTIC STRUCTURE ATTRIBUTE (WITHIN 50 M OF AA)	Present and likely to have negative effect on AA	Significant negative effect on AA
Mowing, grazing, excessive herbivory (within AA)		
Excessive human visitation		
Predation and habitat destruction by non-native vertebrates (e.g., Virginia opossum and domestic predators, such as feral pets)		
Tree cutting/sapling removal		
Removal of woody debris		
Treatment of non-native and nuisance plant species		
Pesticide application or vector control		
Biological resource extraction or stocking (fisheries, aquaculture)		
Excessive organic debris in matrix (for vernal pools)		
Lack of vegetation management to conserve natural resources		
Lack of treatment of invasive plants adjacent to AA or buffer		
Comments		

BUFFER AND LANDSCAPE CONTEXT ATTRIBUTE (WITHIN 500 M OF AA)	Present and likely to have negative effect on AA	Significant negative effect on AA
Urban residential	X	X
Industrial/commercial	X	X
Military training/Air traffic		
Dams (or other major flow regulation or disruption)		
Dryland farming		
Intensive row-crop agriculture		
Orchards/nurseries		
Commercial feedlots		
Dairies		
Ranching (enclosed livestock grazing or horse paddock or feedlot)		
Transportation corridor	X	X
Rangeland (livestock rangeland also managed for native vegetation)		
Sports fields and urban parklands (golf courses, soccer fields, etc.)	X	
Passive recreation (bird-watching, hiking, etc.)	X	
Active recreation (off-road vehicles, mountain biking, hunting, fishing)		
Physical resource extraction (rock, sediment, oil/gas)	X	
Biological resource extraction (aquaculture, commercial fisheries)		
Comments		

Basic Information Sheet: Riverine Wetlands

Your Name: A. Langston					
CRAM Site ID: FB HST					
Assessment Area Name: R203					
Date (mm/dd/yyyy): 03/08/2012					
Assessment Team Members for This AA					
A. Langston, G. Peracca, C. Roberts, J. Whitfield					
Average Bankfull Width: 2.7m					
Approximate Length of AA (10 times bankfull width, min 100 m, max 200 m): 100 m					
Wetland Sub-type:					
<input checked="" type="checkbox"/> Confined <input type="checkbox"/> Non-confined					
AA Category:					
<input type="checkbox"/> Restoration <input type="checkbox"/> Mitigation <input type="checkbox"/> Impacted <input checked="" type="checkbox"/> Other					
Did the river/stream have flowing water at the time of the assessment? <input type="checkbox"/> yes <input checked="" type="checkbox"/> no					
What is the apparent hydrologic flow regime of the reach you are assessing?					
<p>The hydrologic flow regime of a stream describes the frequency with which the channel conducts water. Perennial streams conduct water all year long, whereas ephemeral streams conduct water only during and immediately following precipitation events. Intermittent streams are dry for part of the year, but conduct water for periods longer than ephemeral streams, as a function of watershed size and water source.</p>					
<input type="checkbox"/> perennial <input type="checkbox"/> ephemeral <input checked="" type="checkbox"/> intermittent					
Photo Identification Numbers and Description:					
	Photo ID No.	Description	Latitude	Longitude	Datum
1	1721	South/East			
2	1722	North/East			
3	1723	South/West			
4	1724	North/West			

Scoring Sheet: Riverine Wetlands

AA Name: R203		Date: 03/08/2012			
Attributes and Metrics		Scores		Comments	
Buffer and Landscape Context					
Landscape Connectivity		3			
<i>Buffer submetric A: Percent of AA with Buffer</i>	3			No buffer	
<i>Buffer submetric B: Average Buffer Width</i>	3			Avg=4 meters	
<i>Buffer submetric C: Buffer Condition</i>	3				
D + [C x (A x B)^{1/2}]^{1/2} = Attribute Score		Raw 6	Final 25	Final Attribute Score = (Raw score/24)100	25
Hydrology					
Water Source		3			
Hydroperiod or Channel Stability		3			
Hydrologic Connectivity		3		Entrenchment ratio =1.20	
Attribute Score		Raw 9	Final 25	Final Attribute Score = (Raw Score/36)100	25
Physical Structure					
Structural Patch Richness		3		1 patch type	
Topographic Complexity		3			
Attribute Score		Raw 6	Final 25	Final Attribute Score = (Raw Score/24)100	25
Biotic Structure					
<i>Plant Community submetric A: Number of Plant Layers</i>	6			1 layer	
<i>Plant Community submetric B: Number of Co-dominant species</i>	3			4 co-dominant spp.	
<i>Plant Community submetric C: Percent Invasion</i>	12			0% invasive spp.	
Plant Community Metric <i>(average of submetrics A-C)</i>		7			
Horizontal Interspersion and Zonation		3			
Vertical Biotic Structure		3			
Attribute Score		Raw 13	Final 36.1	Final Attribute Score = (Raw Score/36)100	36.1
Overall AA Score (Average of Final Attribute Scores)				27.8	

Stressor Checklist Worksheet

HYDROLOGY ATTRIBUTE (WITHIN 50 M OF AA)	Present and likely to have negative effect on AA	Significant negative effect on AA
Point Source (PS) discharges (POTW, other non-stormwater)		
Non-point Source (Non-PS) discharges (urban runoff, farm drainage)		
Flow diversions or unnatural inflows		
Dams (reservoirs, detention basins, recharge basins)		
Flow obstructions (culverts, paved stream crossings)		
Weir/drop structure, tide gates		
Dredged inlet/channel		
Engineered channel (riprap, armored channel bank, bed)		
Dike/levees		
Groundwater extraction		
Ditches (borrow, agricultural drainage, mosquito control, etc.)		
Actively managed hydrology		
Comments		
Man-made feature built and managed by the stressors highlighted in bold, which don't have a negative effect on AA but define features.		

PHYSICAL STRUCTURE ATTRIBUTE (WITHIN 50 M OF AA)	Present and likely to have negative effect on AA	Significant negative effect on AA
Filling or dumping of sediment or soils (N/A for restoration areas)		
Grading/ compaction (N/A for restoration areas)		
Plowing/Discing (N/A for restoration areas)	X	
Resource extraction (sediment, gravel, oil and/or gas)		
Vegetation management		
Excessive sediment or organic debris from watershed		
Excessive runoff from watershed		
Nutrient impaired (PS or Non-PS pollution)		
Heavy metal impaired (PS or Non-PS pollution)		
Pesticides or trace organics impaired (PS or Non-PS pollution)		
Bacteria and pathogens impaired (PS or Non-PS pollution)		
Trash or refuse		
Comments		
Located in heavy agricultural area with no buffer, but direct impacts of physical structure Stressors not evident.		

BIOTIC STRUCTURE ATTRIBUTE (WITHIN 50 M OF AA)	Present and likely to have negative effect on AA	Significant negative effect on AA
Mowing, grazing, excessive herbivory (within AA)		
Excessive human visitation		
Predation and habitat destruction by non-native vertebrates (e.g., Virginia opossum and domestic predators, such as feral pets)		
Tree cutting/sapling removal		
Removal of woody debris		
Treatment of non-native and nuisance plant species		
Pesticide application or vector control		
Biological resource extraction or stocking (fisheries, aquaculture)		
Excessive organic debris in matrix (for vernal pools)		
Lack of vegetation management to conserve natural resources		
Lack of treatment of invasive plants adjacent to AA or buffer		
Comments		

BUFFER AND LANDSCAPE CONTEXT ATTRIBUTE (WITHIN 500 M OF AA)	Present and likely to have negative effect on AA	Significant negative effect on AA
Urban residential		
Industrial/commercial		
Military training/Air traffic		
Dams (or other major flow regulation or disruption)		
Dryland farming		
Intensive row-crop agriculture		
Orchards/nurseries	X	
Commercial feedlots		
Dairies		
Ranching (enclosed livestock grazing or horse paddock or feedlot)		
Transportation corridor	X	
Rangeland (livestock rangeland also managed for native vegetation)		
Sports fields and urban parklands (golf courses, soccer fields, etc.)		
Passive recreation (bird-watching, hiking, etc.)		
Active recreation (off-road vehicles, mountain biking, hunting, fishing)		
Physical resource extraction (rock, sediment, oil/gas)		
Biological resource extraction (aquaculture, commercial fisheries)		
Comments		
Adjacent to BNSF railroad.		

Basic Information Sheet: Riverine Wetlands

Your Name: G. Peracca					
CRAM Site ID: FB HST					
Assessment Area Name: R205					
Date (mm/dd/yyyy): 03/08/2012					
Assessment Team Members for This AA					
A. Langston, G. Peracca, C. Roberts, J. Whitfield					
Average Bankfull Width: 9m					
Approximate Length of AA (10 times bankfull width, min 100 m, max 200 m): 100 m					
Wetland Sub-type:					
<input checked="" type="checkbox"/> Confined <input type="checkbox"/> Non-confined					
AA Category:					
<input type="checkbox"/> Restoration <input type="checkbox"/> Mitigation <input type="checkbox"/> Impacted <input checked="" type="checkbox"/> Other					
Did the river/stream have flowing water at the time of the assessment? <input type="checkbox"/> yes <input checked="" type="checkbox"/> no					
What is the apparent hydrologic flow regime of the reach you are assessing?					
<p>The hydrologic flow regime of a stream describes the frequency with which the channel conducts water. Perennial streams conduct water all year long, whereas ephemeral streams conduct water only during and immediately following precipitation events. Intermittent streams are dry for part of the year, but conduct water for periods longer than ephemeral streams, as a function of watershed size and water source.</p>					
<input type="checkbox"/> perennial <input type="checkbox"/> ephemeral <input checked="" type="checkbox"/> intermittent					
Photo Identification Numbers and Description:					
	Photo ID No.	Description	Latitude	Longitude	Datum
1	1717	South/West			
2	1718	North/West			
3	1720	South/East			
4	1719	North/East			

Scoring Sheet: Riverine Wetlands

AA Name: R205		Date: 03/08/2012			
Attributes and Metrics		Scores		Comments	
Buffer and Landscape Context					
Landscape Connectivity		12			
<i>Buffer submetric A: Percent of AA with Buffer</i>	3			No buffer. Road too narrow	
<i>Buffer submetric B: Average Buffer Width</i>	3			Avg=4 meters	
<i>Buffer submetric C: Buffer Condition</i>	3				
D + [C x (A x B)^{1/2}]^{1/2} = Attribute Score		Raw 15	Final 62.5	Final Attribute Score = (Raw score/24)100	62.5
Hydrology					
Water Source		6			
Hydroperiod or Channel Stability		3			
Hydrologic Connectivity		3		Entrenchment Ratio=1.20	
Attribute Score		Raw 12	Final 33.3	Final Attribute Score = (Raw Score/36)100	33.3
Physical Structure					
Structural Patch Richness		3		1 patch type	
Topographic Complexity		3			
Attribute Score		Raw 6	Final 25	Final Attribute Score = (Raw Score/24)100	25
Biotic Structure					
<i>Plant Community submetric A: Number of Plant Layers</i>	6				
<i>Plant Community submetric B: Number of Co-dominant species</i>	3			3 co-dominant spp.	
<i>Plant Community submetric C: Percent Invasion</i>	6			33% invasive spp.	
Plant Community Metric <i>(average of submetrics A-C)</i>		5			
Horizontal Interspersion and Zonation		3			
Vertical Biotic Structure		3			
Attribute Score		Raw 11	Final 30.6	Final Attribute Score = (Raw Score/36)100	30.6
Overall AA Score (Average of Final Attribute Scores)				37.9	

Stressor Checklist Worksheet

HYDROLOGY ATTRIBUTE (WITHIN 50 M OF AA)	Present and likely to have negative effect on AA	Significant negative effect on AA
Point Source (PS) discharges (POTW, other non-stormwater)		
Non-point Source (Non-PS) discharges (urban runoff, farm drainage)		
Flow diversions or unnatural inflows		
Dams (reservoirs, detention basins, recharge basins)	X	
Flow obstructions (culverts, paved stream crossings)	X	
Weir/drop structure, tide gates		
Dredged inlet/channel		
Engineered channel (riprap, armored channel bank, bed)		
Dike/levees		
Groundwater extraction		
Ditches (borrow, agricultural drainage, mosquito control, etc.)		
Actively managed hydrology		
Comments		

PHYSICAL STRUCTURE ATTRIBUTE (WITHIN 50 M OF AA)	Present and likely to have negative effect on AA	Significant negative effect on AA
Filling or dumping of sediment or soils (N/A for restoration areas)		
Grading/ compaction (N/A for restoration areas)		
Plowing/Discing (N/A for restoration areas)	X	
Resource extraction (sediment, gravel, oil and/or gas)		
Vegetation management		
Excessive sediment or organic debris from watershed	X	
Excessive runoff from watershed		
Nutrient impaired (PS or Non-PS pollution)		
Heavy metal impaired (PS or Non-PS pollution)		
Pesticides or trace organics impaired (PS or Non-PS pollution)		
Bacteria and pathogens impaired (PS or Non-PS pollution)		
Trash or refuse		
Comments		

BIOTIC STRUCTURE ATTRIBUTE (WITHIN 50 M OF AA)	Present and likely to have negative effect on AA	Significant negative effect on AA
Mowing, grazing, excessive herbivory (within AA)		
Excessive human visitation		
Predation and habitat destruction by non-native vertebrates (e.g., Virginia opossum and domestic predators, such as feral pets)		
Tree cutting/sapling removal		
Removal of woody debris		
Treatment of non-native and nuisance plant species		
Pesticide application or vector control		
Biological resource extraction or stocking (fisheries, aquaculture)		
Excessive organic debris in matrix (for vernal pools)		
Lack of vegetation management to conserve natural resources		
Lack of treatment of invasive plants adjacent to AA or buffer		
Comments		

BUFFER AND LANDSCAPE CONTEXT ATTRIBUTE (WITHIN 500 M OF AA)	Present and likely to have negative effect on AA	Significant negative effect on AA
Urban residential		
Industrial/commercial		
Military training/Air traffic		
Dams (or other major flow regulation or disruption)		
Dryland farming		
Intensive row-crop agriculture		
Orchards/nurseries	X	
Commercial feedlots		
Dairies		
Ranching (enclosed livestock grazing or horse paddock or feedlot)		
Transportation corridor		
Rangeland (livestock rangeland also managed for native vegetation)		
Sports fields and urban parklands (golf courses, soccer fields, etc.)		
Passive recreation (bird-watching, hiking, etc.)		
Active recreation (off-road vehicles, mountain biking, hunting, fishing)		
Physical resource extraction (rock, sediment, oil/gas)		
Biological resource extraction (aquaculture, commercial fisheries)		
Comments		

Basic Information Sheet: Riverine Wetlands

Your Name: A. Langston					
CRAM Site ID: FB HST					
Assessment Area Name: R208					
Date (mm/dd/yyyy): 03/07/2012					
Assessment Team Members for This AA					
A. Langston, G. Peracca, C. Roberts					
Average Bankfull Width: 12m					
Approximate Length of AA (10 times bankfull width, min 100 m, max 200 m): 120m					
Wetland Sub-type:					
<input checked="" type="checkbox"/> Confined <input type="checkbox"/> Non-confined					
AA Category:					
<input type="checkbox"/> Restoration <input type="checkbox"/> Mitigation <input checked="" type="checkbox"/> Impacted <input type="checkbox"/> Other					
Did the river/stream have flowing water at the time of the assessment? <input type="checkbox"/> yes <input checked="" type="checkbox"/> no					
What is the apparent hydrologic flow regime of the reach you are assessing?					
<p>The hydrologic flow regime of a stream describes the frequency with which the channel conducts water. Perennial streams conduct water all year long, whereas ephemeral streams conduct water only during and immediately following precipitation events. Intermittent streams are dry for part of the year, but conduct water for periods longer than ephemeral streams, as a function of watershed size and water source.</p>					
<input type="checkbox"/> perennial <input type="checkbox"/> ephemeral <input checked="" type="checkbox"/> intermittent					
Photo Identification Numbers and Description:					
	Photo ID No.	Description	Latitude	Longitude	Datum
1	1695	North/West			
2	1696	North/East			
3	1698,1699	South/West			
4	1697	South/East			

Scoring Sheet: Riverine Wetlands

AA Name: R208		Date: 03/07/2012			
Attributes and Metrics		Scores		Comments	
Buffer and Landscape Context					
Landscape Connectivity		12			
<i>Buffer submetric A: Percent of AA with Buffer</i>	12		100% with buffer		
<i>Buffer submetric B: Average Buffer Width</i>	3		Avg=9.6m		
<i>Buffer submetric C: Buffer Condition</i>	3				
D + [C x (A x B)^{1/2}]^{1/2} = Attribute Score		Raw 16.2	Final 67.5	Final Attribute Score = (Raw score/24)100	67.5
Hydrology					
Water Source		6			
Hydroperiod or Channel Stability		9			
Hydrologic Connectivity		9		Entrenchment Ratio=1.98	
Attribute Score		Raw 24	Final 66.7	Final Attribute Score = (Raw Score/36)100	66.7
Physical Structure					
Structural Patch Richness		6		1 patch type	
Topographic Complexity		9			
Attribute Score		Raw 15	Final 62.5	Final Attribute Score = (Raw Score/24)100	62.5
Biotic Structure					
<i>Plant Community submetric A: Number of Plant Layers</i>	9		1 layer		
<i>Plant Community submetric B: Number of Co-dominant species</i>	6		1 co-dominant sp.		
<i>Plant Community submetric C: Percent Invasion</i>	9		0% non-native spp.		
Plant Community Metric <i>(average of submetrics A-C)</i>		8			
Horizontal Interspersion and Zonation		9			
Vertical Biotic Structure		9			
Attribute Score		Raw 26	Final 72.2	Final Attribute Score = (Raw Score/36)100	72.2
Overall AA Score (Average of Final Attribute Scores)				67.2	

Stressor Checklist Worksheet

HYDROLOGY ATTRIBUTE (WITHIN 50 M OF AA)	Present and likely to have negative effect on AA	Significant negative effect on AA
Point Source (PS) discharges (POTW, other non-stormwater)		
Non-point Source (Non-PS) discharges (urban runoff, farm drainage)		
Flow diversions or unnatural inflows		
Dams (reservoirs, detention basins, recharge basins)		
Flow obstructions (culverts, paved stream crossings)		
Weir/drop structure, tide gates		
Dredged inlet/channel		
Engineered channel (riprap, armored channel bank, bed)		
Dike/levees		
Groundwater extraction		
Ditches (borrow, agricultural drainage, mosquito control, etc.)		
Actively managed hydrology		
Comments		

PHYSICAL STRUCTURE ATTRIBUTE (WITHIN 50 M OF AA)	Present and likely to have negative effect on AA	Significant negative effect on AA
Filling or dumping of sediment or soils (N/A for restoration areas)		
Grading/ compaction (N/A for restoration areas)		
Plowing/Discing (N/A for restoration areas)		
Resource extraction (sediment, gravel, oil and/or gas)		
Vegetation management		
Excessive sediment or organic debris from watershed		
Excessive runoff from watershed		
Nutrient impaired (PS or Non-PS pollution)		
Heavy metal impaired (PS or Non-PS pollution)		
Pesticides or trace organics impaired (PS or Non-PS pollution)		
Bacteria and pathogens impaired (PS or Non-PS pollution)		
Trash or refuse		
Comments		

BIOTIC STRUCTURE ATTRIBUTE (WITHIN 50 M OF AA)	Present and likely to have negative effect on AA	Significant negative effect on AA
Mowing, grazing, excessive herbivory (within AA)		
Excessive human visitation		
Predation and habitat destruction by non-native vertebrates (e.g., Virginia opossum and domestic predators, such as feral pets)		
Tree cutting/sapling removal		
Removal of woody debris		
Treatment of non-native and nuisance plant species		
Pesticide application or vector control		
Biological resource extraction or stocking (fisheries, aquaculture)		
Excessive organic debris in matrix (for vernal pools)		
Lack of vegetation management to conserve natural resources		
Lack of treatment of invasive plants adjacent to AA or buffer		
Comments		

BUFFER AND LANDSCAPE CONTEXT ATTRIBUTE (WITHIN 500 M OF AA)	Present and likely to have negative effect on AA	Significant negative effect on AA
Urban residential		
Industrial/commercial		
Military training/Air traffic		
Dams (or other major flow regulation or disruption)		
Dryland farming		
Intensive row-crop agriculture		
Orchards/nurseries		
Commercial feedlots		
Dairies		
Ranching (enclosed livestock grazing or horse paddock or feedlot)		
Transportation corridor		
Rangeland (livestock rangeland also managed for native vegetation)		
Sports fields and urban parklands (golf courses, soccer fields, etc.)		
Passive recreation (bird-watching, hiking, etc.)		
Active recreation (off-road vehicles, mountain biking, hunting, fishing)		
Physical resource extraction (rock, sediment, oil/gas)		
Biological resource extraction (aquaculture, commercial fisheries)		
Comments		

Basic Information Sheet: Riverine Wetlands

Your Name: A. Langston					
CRAM Site ID: FB HST					
Assessment Area Name: R209					
Date (mm/dd/yyyy): 03/07/2012					
Assessment Team Members for This AA					
A. Langston, G. Peracca, C. Roberts					
Average Bankfull Width: 6m					
Approximate Length of AA (10 times bankfull width, min 100 m, max 200 m): 100 m					
Wetland Sub-type:					
<input checked="" type="checkbox"/> Confined <input type="checkbox"/> Non-confined					
AA Category:					
<input type="checkbox"/> Restoration <input type="checkbox"/> Mitigation <input checked="" type="checkbox"/> Impacted <input type="checkbox"/> Other					
Did the river/stream have flowing water at the time of the assessment? <input checked="" type="checkbox"/> yes <input type="checkbox"/> no					
What is the apparent hydrologic flow regime of the reach you are assessing?					
<p>The hydrologic flow regime of a stream describes the frequency with which the channel conducts water. Perennial streams conduct water all year long, whereas ephemeral streams conduct water only during and immediately following precipitation events. Intermittent streams are dry for part of the year, but conduct water for periods longer than ephemeral streams, as a function of watershed size and water source.</p>					
<input checked="" type="checkbox"/> perennial <input type="checkbox"/> ephemeral <input type="checkbox"/> intermittent					
Photo Identification Numbers and Description:					
	Photo ID No.	Description	Latitude	Longitude	Datum
1	N/A	North			
2	N/A	South			
3	1694	East			
4	1693	West			

Scoring Sheet: Riverine Wetlands

AA Name: R209		Date: 03/07/2012			
Attributes and Metrics		Scores		Comments	
Buffer and Landscape Context					
Landscape Connectivity		12			
<i>Buffer submetric A: Percent of AA with Buffer</i>	9		50% with buffer		
<i>Buffer submetric B: Average Buffer Width</i>	3		Avg=8 meters		
<i>Buffer submetric C: Buffer Condition</i>	3				
D + [C x (A x B)^{1/2}]^{1/2} = Attribute Score		Raw 15.9	Final 66.3	Final Attribute Score = (Raw score/24)100	66.3
Hydrology					
Water Source		6		Isolated from surrounding canals	
Hydroperiod or Channel Stability		3		Fed by pumped groundwater.	
Hydrologic Connectivity		6		Entrenchment Ratio=1.39	
Attribute Score		Raw 15	Final 41.7	Final Attribute Score = (Raw Score/36)100	41.7
Physical Structure					
Structural Patch Richness		3		1 patch type	
Topographic Complexity		6			
Attribute Score		Raw 9	Final 37.5	Final Attribute Score = (Raw Score/24)100	37.5
Biotic Structure					
<i>Plant Community submetric A: Number of Plant Layers</i>	6		1 layer		
<i>Plant Community submetric B: Number of Co-dominant species</i>	3		1 co-dominant sp.		
<i>Plant Community submetric C: Percent Invasion</i>	12		0% invasion		
Plant Community Metric <i>(average of submetrics A-C)</i>		7			
Horizontal Interspersion and Zonation		3			
Vertical Biotic Structure		3			
Attribute Score		Raw 13	Final 36.1	Final Attribute Score = (Raw Score/36)100	36.1
Overall AA Score (Average of Final Attribute Scores)				45.4	

Stressor Checklist Worksheet

HYDROLOGY ATTRIBUTE (WITHIN 50 M OF AA)	Present and likely to have negative effect on AA	Significant negative effect on AA
Point Source (PS) discharges (POTW, other non-stormwater)		
Non-point Source (Non-PS) discharges (urban runoff, farm drainage)		
Flow diversions or unnatural inflows		
Dams (reservoirs, detention basins, recharge basins)		
Flow obstructions (culverts, paved stream crossings)		
Weir/drop structure, tide gates		
Dredged inlet/channel		
Engineered channel (riprap, armored channel bank, bed)		
Dike/levees		
Groundwater extraction		
Ditches (borrow, agricultural drainage, mosquito control, etc.)		
Actively managed hydrology		
Comments		

PHYSICAL STRUCTURE ATTRIBUTE (WITHIN 50 M OF AA)	Present and likely to have negative effect on AA	Significant negative effect on AA
Filling or dumping of sediment or soils (N/A for restoration areas)		
Grading/ compaction (N/A for restoration areas)		
Plowing/Discing (N/A for restoration areas)		
Resource extraction (sediment, gravel, oil and/or gas)		
Vegetation management		
Excessive sediment or organic debris from watershed		
Excessive runoff from watershed		
Nutrient impaired (PS or Non-PS pollution)		
Heavy metal impaired (PS or Non-PS pollution)	X	
Pesticides or trace organics impaired (PS or Non-PS pollution)		
Bacteria and pathogens impaired (PS or Non-PS pollution)	X	
Trash or refuse		
Comments		
Nutrient impaired (sulfur smell within feature) potential inputs picked up from adjacent feedlot.		

BIOTIC STRUCTURE ATTRIBUTE (WITHIN 50 M OF AA)	Present and likely to have negative effect on AA	Significant negative effect on AA
Mowing, grazing, excessive herbivory (within AA)		
Excessive human visitation		
Predation and habitat destruction by non-native vertebrates (e.g., Virginia opossum and domestic predators, such as feral pets)		
Tree cutting/sapling removal		
Removal of woody debris		
Treatment of non-native and nuisance plant species		
Pesticide application or vector control		
Biological resource extraction or stocking (fisheries, aquaculture)		
Excessive organic debris in matrix (for vernal pools)		
Lack of vegetation management to conserve natural resources		
Lack of treatment of invasive plants adjacent to AA or buffer		
Comments		

BUFFER AND LANDSCAPE CONTEXT ATTRIBUTE (WITHIN 500 M OF AA)	Present and likely to have negative effect on AA	Significant negative effect on AA
Urban residential		
Industrial/commercial		
Military training/Air traffic		
Dams (or other major flow regulation or disruption)		
Dryland farming		
Intensive row-crop agriculture	X	X
Orchards/nurseries		
Commercial feedlots	X	
Dairies		
Ranching (enclosed livestock grazing or horse paddock or feedlot)	X	
Transportation corridor		
Rangeland (livestock rangeland also managed for native vegetation)		
Sports fields and urban parklands (golf courses, soccer fields, etc.)		
Passive recreation (bird-watching, hiking, etc.)		
Active recreation (off-road vehicles, mountain biking, hunting, fishing)		
Physical resource extraction (rock, sediment, oil/gas)		
Biological resource extraction (aquaculture, commercial fisheries)		
Comments		
Agriculture occupies 100% of surrounding land uses. Even though the feature was created for agriculture it is significantly negatively affected by the Intensive row-crop agriculture, specifically.		

Basic Information Sheet: Riverine Wetlands

Your Name: A. Langston					
CRAM Site ID: FB HST					
Assessment Area Name: R211					
Date (mm/dd/yyyy): 03/05/2012					
Assessment Team Members for This AA					
A. Langston, G. Peracca, C. Roberts					
Average Bankfull Width: 8 meters					
Approximate Length of AA (10 times bankfull width, min 100 m, max 200 m): 100 m					
Wetland Sub-type:					
<input checked="" type="checkbox"/> Confined <input type="checkbox"/> Non-confined					
AA Category:					
<input type="checkbox"/> Restoration <input type="checkbox"/> Mitigation <input checked="" type="checkbox"/> Impacted <input type="checkbox"/> Other					
Did the river/stream have flowing water at the time of the assessment? <input type="checkbox"/> yes <input checked="" type="checkbox"/> no					
What is the apparent hydrologic flow regime of the reach you are assessing?					
<p>The hydrologic flow regime of a stream describes the frequency with which the channel conducts water. Perennial streams conduct water all year long, whereas ephemeral streams conduct water only during and immediately following precipitation events. Intermittent streams are dry for part of the year, but conduct water for periods longer than ephemeral streams, as a function of watershed size and water source.</p>					
<input type="checkbox"/> perennial <input type="checkbox"/> ephemeral <input checked="" type="checkbox"/> intermittent					
Photo Identification Numbers and Description:					
	Photo ID No.	Description	Latitude	Longitude	Datum
1	1674	Southeast			
2	1675	Northeast			
3	N/A	East			
4	N/A	West			

Scoring Sheet: Riverine Wetlands

AA Name: R211		Date: 03/05/2012		
Attributes and Metrics		Scores		Comments
Buffer and Landscape Context				
Landscape Connectivity		6		
<i>Buffer submetric A: Percent of AA with Buffer</i>	12		100% with buffer	
<i>Buffer submetric B: Average Buffer Width</i>	3		Avg =5.4 meters	
<i>Buffer submetric C: Buffer Condition</i>	3			
D + [C x (A x B)^{1/2}]^{1/2} = Attribute Score		Raw 10.2	Final 42.5	Final Attribute Score = (Rawcore/24)100 42.5
Hydrology				
Water Source		6		
Hydroperiod or Channel Stability		3		Not a natural feature
Hydrologic Connectivity		6		Entrenchment Ratio=1.45
Attribute Score		Raw 15	Final 41.7	Final Attribute Score = (Raw Score/36)100 41.7
Physical Structure				
Structural Patch Richness		6		4 patch types
Topographic Complexity		9		
Attribute Score		Raw 15	Final 62.5	Final Attribute Score = (Raw Score/24)100 62.5
Biotic Structure				
<i>Plant Community submetric A: Number of Plant Layers</i>	6		1 layer	
<i>Plant Community submetric B: Number of Co-dominant species</i>	3		1 dominant sp.	
<i>Plant Community submetric C: Percent Invasion</i>	12		0% invasion	
Plant Community Metric <i>(average of submetrics A-C)</i>		7		
Horizontal Interspersion and Zonation		3		
Vertical Biotic Structure		3		
Attribute Score		Raw 13	Final 36.1	Final Attribute Score = (Raw Score/36)100 36.1
Overall AA Score (Average of Final Attribute Scores)				45.7

Stressor Checklist Worksheet

HYDROLOGY ATTRIBUTE (WITHIN 50 M OF AA)	Present and likely to have negative effect on AA	Significant negative effect on AA
Point Source (PS) discharges (POTW, other non-stormwater)		
Non-point Source (Non-PS) discharges (urban runoff, farm drainage)	X	
Flow diversions or unnatural inflows		
Dams (reservoirs, detention basins, recharge basins)		
Flow obstructions (culverts, paved stream crossings)		
Weir/drop structure, tide gates		
Dredged inlet/channel		
Engineered channel (riprap, armored channel bank, bed)		
Dike/levees	X	
Groundwater extraction		
Ditches (borrow, agricultural drainage, mosquito control, etc.)		
Actively managed hydrology	X	
Comments		

PHYSICAL STRUCTURE ATTRIBUTE (WITHIN 50 M OF AA)	Present and likely to have negative effect on AA	Significant negative effect on AA
Filling or dumping of sediment or soils (N/A for restoration areas)		
Grading/ compaction (N/A for restoration areas)		
Plowing/Discing (N/A for restoration areas)	X	
Resource extraction (sediment, gravel, oil and/or gas)		
Vegetation management		
Excessive sediment or organic debris from watershed		
Excessive runoff from watershed		
Nutrient impaired (PS or Non-PS pollution)		
Heavy metal impaired (PS or Non-PS pollution)		
Pesticides or trace organics impaired (PS or Non-PS pollution)		
Bacteria and pathogens impaired (PS or Non-PS pollution)		
Trash or refuse	X	
Comments		

BIOTIC STRUCTURE ATTRIBUTE (WITHIN 50 M OF AA)	Present and likely to have negative effect on AA	Significant negative effect on AA
Mowing, grazing, excessive herbivory (within AA)		
Excessive human visitation		
Predation and habitat destruction by non-native vertebrates (e.g., Virginia opossum and domestic predators, such as feral pets)		
Tree cutting/sapling removal		
Removal of woody debris		
Treatment of non-native and nuisance plant species		
Pesticide application or vector control	X	
Biological resource extraction or stocking (fisheries, aquaculture)		
Excessive organic debris in matrix (for vernal pools)		
Lack of vegetation management to conserve natural resources		
Lack of treatment of invasive plants adjacent to AA or buffer		
Comments		

BUFFER AND LANDSCAPE CONTEXT ATTRIBUTE (WITHIN 500 M OF AA)	Present and likely to have negative effect on AA	Significant negative effect on AA
Urban residential		
Industrial/commercial		
Military training/Air traffic		
Dams (or other major flow regulation or disruption)		
Dryland farming		
Intensive row-crop agriculture		
Orchards/nurseries	X	
Commercial feedlots	X	
Dairies		
Ranching (enclosed livestock grazing or horse paddock or feedlot)		
Transportation corridor	X	
Rangeland (livestock rangeland also managed for native vegetation)		
Sports fields and urban parklands (golf courses, soccer fields, etc.)		
Passive recreation (bird-watching, hiking, etc.)		
Active recreation (off-road vehicles, mountain biking, hunting, fishing)		
Physical resource extraction (rock, sediment, oil/gas)		
Biological resource extraction (aquaculture, commercial fisheries)		
Comments		

Basic Information Sheet: Riverine Wetlands

Your Name: G. Peracca					
CRAM Site ID: FB HST					
Assessment Area Name: R212					
Date (mm/dd/yyyy): 03/05/2012					
Assessment Team Members for This AA					
C. Roberts, A. Langston, G. Peracca					
Average Bankfull Width: 8 meters					
Approximate Length of AA (10 times bankfull width, min 100 m, max 200 m): 100 m					
Wetland Sub-type:					
<input checked="" type="checkbox"/> Confined <input type="checkbox"/> Non-confined					
AA Category:					
<input type="checkbox"/> Restoration <input type="checkbox"/> Mitigation <input checked="" type="checkbox"/> Impacted <input type="checkbox"/> Other					
Did the river/stream have flowing water at the time of the assessment? <input type="checkbox"/> yes <input checked="" type="checkbox"/> no					
What is the apparent hydrologic flow regime of the reach you are assessing?					
<p>The hydrologic flow regime of a stream describes the frequency with which the channel conducts water. Perennial streams conduct water all year long, whereas ephemeral streams conduct water only during and immediately following precipitation events. Intermittent streams are dry for part of the year, but conduct water for periods longer than ephemeral streams, as a function of watershed size and water source.</p>					
<input type="checkbox"/> perennial <input type="checkbox"/> ephemeral <input checked="" type="checkbox"/> intermittent <small>*artificially filled for ag.</small>					
Photo Identification Numbers and Description:					
	Photo ID No.	Description (facing)	Latitude	Longitude	Datum
1	1670	SE			
2	1671	NE			
3	1672	SW			
4	1673	NW			

Scoring Sheet: Riverine Wetlands

AA Name: R212		Date: 03/05/2012			
Attributes and Metrics	Scores	Comments			
Buffer and Landscape Context					
Landscape Connectivity	12				
<i>Buffer submetric A: Percent of AA with Buffer</i>	12		100% with buffer		
<i>Buffer submetric B: Average Buffer Width</i>	3		Avg=10.6 meters		
<i>Buffer submetric C: Buffer Condition</i>	3		Buffer = unvegetated		
D + [C x (A x B)^{1/2}]^{1/2} = Attribute Score		Raw	Final	Final Attribute Score = (Rawcore/24)100	67.5
		16.2	67.5		
Hydrology					
Water Source	6	20% of AA adjacent to active ag			
Hydroperiod or Channel Stability	3				
Hydrologic Connectivity	6	Entrenchment Ratio=1.4			
Attribute Score		Raw	Final	Final Attribute Score = (Raw Score/36)100	41.7
		15	41.7		
Physical Structure					
Structural Patch Richness	3				
Topographic Complexity	3				
Attribute Score		Raw	Final	Final Attribute Score = (Raw Score/24)100	25
		6	25		
Biotic Structure					
<i>Plant Community submetric A: Number of Plant Layers</i>	6		1 Layer		
<i>Plant Community submetric B: Number of Co-dominant species</i>	3		1 co-dominant sp.		
<i>Plant Community submetric C: Percent Invasion</i>	12		0% invasion		
Plant Community Metric <i>(average of submetrics A-C)</i>	7				
Horizontal Interspersion and Zonation	3				
Vertical Biotic Structure	3				
Attribute Score		Raw	Final	Final Attribute Score = (Raw Score/36)100	36.1
		13	36.1		
Overall AA Score (Average of Final Attribute Scores)			42.6		

Stressor Checklist Worksheet

HYDROLOGY ATTRIBUTE (WITHIN 50 M OF AA)	Present and likely to have negative effect on AA	Significant negative effect on AA
Point Source (PS) discharges (POTW, other non-stormwater)		
Non-point Source (Non-PS) discharges (urban runoff, farm drainage)	X	
Flow diversions or unnatural inflows		
Dams (reservoirs, detention basins, recharge basins)		
Flow obstructions (culverts, paved stream crossings)		
Weir/drop structure, tide gates		
Dredged inlet/channel		
Engineered channel (riprap, armored channel bank, bed)		
Dike/levees	X	
Groundwater extraction		
Ditches (borrow, agricultural drainage, mosquito control, etc.)		
Actively managed hydrology	X	X
Comments		

PHYSICAL STRUCTURE ATTRIBUTE (WITHIN 50 M OF AA)	Present and likely to have negative effect on AA	Significant negative effect on AA
Filling or dumping of sediment or soils (N/A for restoration areas)		
Grading/ compaction (N/A for restoration areas)		
Plowing/Discing (N/A for restoration areas)		
Resource extraction (sediment, gravel, oil and/or gas)	X	
Vegetation management		
Excessive sediment or organic debris from watershed		
Excessive runoff from watershed		
Nutrient impaired (PS or Non-PS pollution)		
Heavy metal impaired (PS or Non-PS pollution)		
Pesticides or trace organics impaired (PS or Non-PS pollution)		
Bacteria and pathogens impaired (PS or Non-PS pollution)		
Trash or refuse		
Comments		

BIOTIC STRUCTURE ATTRIBUTE (WITHIN 50 M OF AA)	Present and likely to have negative effect on AA	Significant negative effect on AA
Mowing, grazing, excessive herbivory (within AA)		
Excessive human visitation		
Predation and habitat destruction by non-native vertebrates (e.g., Virginia opossum and domestic predators, such as feral pets)		
Tree cutting/sapling removal		
Removal of woody debris		
Treatment of non-native and nuisance plant species		
Pesticide application or vector control	X	
Biological resource extraction or stocking (fisheries, aquaculture)		
Excessive organic debris in matrix (for vernal pools)		
Lack of vegetation management to conserve natural resources		
Lack of treatment of invasive plants adjacent to AA or buffer		
Comments		

BUFFER AND LANDSCAPE CONTEXT ATTRIBUTE (WITHIN 500 M OF AA)	Present and likely to have negative effect on AA	Significant negative effect on AA
Urban residential		
Industrial/commercial		
Military training/Air traffic		
Dams (or other major flow regulation or disruption)		
Dryland farming		
Intensive row-crop agriculture	X	
Orchards/nurseries	X	
Commercial feedlots		
Dairies		
Ranching (enclosed livestock grazing or horse paddock or feedlot)		
Transportation corridor	X	
Rangeland (livestock rangeland also managed for native vegetation)		
Sports fields and urban parklands (golf courses, soccer fields, etc.)		
Passive recreation (bird-watching, hiking, etc.)		
Active recreation (off-road vehicles, mountain biking, hunting, fishing)		
Physical resource extraction (rock, sediment, oil/gas)		
Biological resource extraction (aquaculture, commercial fisheries)		
Comments		

Basic Information Sheet: Riverine Wetlands

Your Name: A. Langston					
CRAM Site ID: FB HST					
Assessment Area Name: R213					
Date (mm/dd/yyyy): 03/05/2012					
Assessment Team Members for This AA					
C. Roberts, A. Langston, G. Peracca					
Average Bankfull Width: 6 m					
Approximate Length of AA (10 times bankfull width, min 100 m, max 200 m): 100 m					
Wetland Sub-type:					
<input checked="" type="checkbox"/> Confined <input type="checkbox"/> Non-confined					
AA Category:					
<input type="checkbox"/> Restoration <input type="checkbox"/> Mitigation <input checked="" type="checkbox"/> Impacted <input type="checkbox"/> Other					
Did the river/stream have flowing water at the time of the assessment? <input type="checkbox"/> yes <input checked="" type="checkbox"/> no					
What is the apparent hydrologic flow regime of the reach you are assessing?					
<p>The hydrologic flow regime of a stream describes the frequency with which the channel conducts water. Perennial streams conduct water all year long, whereas ephemeral streams conduct water only during and immediately following precipitation events. Intermittent streams are dry for part of the year, but conduct water for periods longer than ephemeral streams, as a function of watershed size and water source.</p>					
<input type="checkbox"/> perennial <input type="checkbox"/> ephemeral <input checked="" type="checkbox"/> intermittent					
Photo Identification Numbers and Description:					
	Photo ID No.	Description (facing)	Latitude	Longitude	Datum
1	1665	NE			
2	1666	NW			
3	1667	SW			
4	1668	SE			

Scoring Sheet: Riverine Wetlands

AA Name: R213		Date: 03/05/2012			
Attributes and Metrics		Scores		Comments	
Buffer and Landscape Context					
Landscape Connectivity		12			
<i>Buffer submetric A: Percent of AA with Buffer</i>	9			50% with buffer	
<i>Buffer submetric B: Average Buffer Width</i>	3			Avg=11 meter	
<i>Buffer submetric C: Buffer Condition</i>	3				
D + [C x (A x B)^{1/2}]^{1/2} = Attribute Score		Raw 15.9	Final 66.3	Final Attribute Score = (Rawcore/24)100	66.3
Hydrology					
Water Source		6			
Hydroperiod or Channel Stability		3		Hydromodification	
Hydrologic Connectivity		6		Entrenchment Ratio=1.46	
Attribute Score		Raw 15	Final 41.7	Final Attribute Score = (Raw Score/36)100	41.7
Physical Structure					
Structural Patch Richness		3			
Topographic Complexity		3			
Attribute Score		Raw 6	Final 25	Final Attribute Score = (Raw Score/24)100	25
Biotic Structure					
<i>Plant Community submetric A: Number of Plant Layers</i>	6			1 Layer	
<i>Plant Community submetric B: Number of Co-dominant species</i>	3			2 co-dominant spp.	
<i>Plant Community submetric C: Percent Invasion</i>	12			0% invasion	
Plant Community Metric <i>(average of submetrics A-C)</i>		7			
Horizontal Interspersion and Zonation		3			
Vertical Biotic Structure		3			
Attribute Score		Raw 13	Final 36.1	Final Attribute Score = (Raw Score/36)100	36.1
Overall AA Score (Average of Final Attribute Scores)				42.3	

Stressor Checklist Worksheet

HYDROLOGY ATTRIBUTE (WITHIN 50 M OF AA)	Present and likely to have negative effect on AA	Significant negative effect on AA
Point Source (PS) discharges (POTW, other non-stormwater)		
Non-point Source (Non-PS) discharges (urban runoff, farm drainage)		
Flow diversions or unnatural inflows		
Dams (reservoirs, detention basins, recharge basins)		
Flow obstructions (culverts, paved stream crossings)		
Weir/drop structure, tide gates		
Dredged inlet/channel		
Engineered channel (riprap, armored channel bank, bed)		
Dike/levees	X	
Groundwater extraction		
Ditches (borrow, agricultural drainage, mosquito control, etc.)		
Actively managed hydrology	X	
Comments		

PHYSICAL STRUCTURE ATTRIBUTE (WITHIN 50 M OF AA)	Present and likely to have negative effect on AA	Significant negative effect on AA
Filling or dumping of sediment or soils (N/A for restoration areas)		
Grading/ compaction (N/A for restoration areas)		
Plowing/Discing (N/A for restoration areas)	X	
Resource extraction (sediment, gravel, oil and/or gas)		
Vegetation management		
Excessive sediment or organic debris from watershed		
Excessive runoff from watershed		
Nutrient impaired (PS or Non-PS pollution)		
Heavy metal impaired (PS or Non-PS pollution)		
Pesticides or trace organics impaired (PS or Non-PS pollution)		
Bacteria and pathogens impaired (PS or Non-PS pollution)		
Trash or refuse		
Comments		

BIOTIC STRUCTURE ATTRIBUTE (WITHIN 50 M OF AA)	Present and likely to have negative effect on AA	Significant negative effect on AA
Mowing, grazing, excessive herbivory (within AA)		
Excessive human visitation		
Predation and habitat destruction by non-native vertebrates (e.g., Virginia opossum and domestic predators, such as feral pets)		
Tree cutting/sapling removal		
Removal of woody debris		
Treatment of non-native and nuisance plant species		
Pesticide application or vector control	X	
Biological resource extraction or stocking (fisheries, aquaculture)		
Excessive organic debris in matrix (for vernal pools)		
Lack of vegetation management to conserve natural resources		
Lack of treatment of invasive plants adjacent to AA or buffer		
Comments		

BUFFER AND LANDSCAPE CONTEXT ATTRIBUTE (WITHIN 500 M OF AA)	Present and likely to have negative effect on AA	Significant negative effect on AA
Urban residential		
Industrial/commercial		
Military training/Air traffic		
Dams (or other major flow regulation or disruption)		
Dryland farming		
Intensive row-crop agriculture	X	
Orchards/nurseries	X	
Commercial feedlots		
Dairies		
Ranching (enclosed livestock grazing or horse paddock or feedlot)		
Transportation corridor	X	
Rangeland (livestock rangeland also managed for native vegetation)		
Sports fields and urban parklands (golf courses, soccer fields, etc.)		
Passive recreation (bird-watching, hiking, etc.)		
Active recreation (off-road vehicles, mountain biking, hunting, fishing)		
Physical resource extraction (rock, sediment, oil/gas)		
Biological resource extraction (aquaculture, commercial fisheries)		
Comments		

Basic Information Sheet: Riverine Wetlands

Your Name: J.n Whitfield					
CRAM Site ID: FB HST					
Assessment Area Name: R220					
Date (mm/dd/yyyy): 03/09/2012					
Assessment Team Members for This AA					
A. Langston, G. Peracca, C. Roberts, J. Whitfield					
Average Bankfull Width: varies; approximately 13 m - 20 m					
Approximate Length of AA (10 times bankfull width, min 100 m, max 200 m): 200 m					
Wetland Sub-type:					
<input type="checkbox"/> Confined <input checked="" type="checkbox"/> Non-confined					
AA Category:					
<input type="checkbox"/> Restoration <input type="checkbox"/> Mitigation <input type="checkbox"/> Impacted <input checked="" type="checkbox"/> Other					
Did the river/stream have flowing water at the time of the assessment? <input type="checkbox"/> yes <input checked="" type="checkbox"/> no					
What is the apparent hydrologic flow regime of the reach you are assessing?					
<p>The hydrologic flow regime of a stream describes the frequency with which the channel conducts water. Perennial streams conduct water all year long, whereas ephemeral streams conduct water only during and immediately following precipitation events. Intermittent streams are dry for part of the year, but conduct water for periods longer than ephemeral streams, as a function of watershed size and water source.</p>					
<input type="checkbox"/> perennial <input type="checkbox"/> ephemeral <input checked="" type="checkbox"/> intermittent					
Photo Identification Numbers and Description:					
	Photo ID No.	Description	Latitude	Longitude	Datum
1	1725	North			
2	1726	South			
3	1727	East			
4	1728	West			

Scoring Sheet: Riverine Wetlands

AA Name: R220		Date: 03/09/2012			
Attributes and Metrics		Scores		Comments	
Buffer and Landscape Context					
Landscape Connectivity		12			
<i>Buffer submetric A: Percent of AA with Buffer</i>	9			50% with buffer	
<i>Buffer submetric B: Average Buffer Width</i>	6			Avg=112.5 meter	
<i>Buffer submetric C: Buffer Condition</i>	6				
D + [C x (A x B)^{1/2}]^{1/2} = Attribute Score		Raw 18.6	Final 77.5	Final Attribute Score = (Raw score/24)100	77.5
Hydrology					
Water Source		6			
Hydroperiod or Channel Stability		9			
Hydrologic Connectivity		12		Entrenchment Ratio= 3.82	
Attribute Score		Raw 18	Final 75	Final Attribute Score = (Raw Score/36)100	75
Physical Structure					
Structural Patch Richness		6		6 patch types	
Topographic Complexity		12			
Attribute Score		Raw 18	Final 75	Final Attribute Score = (Raw Score/24)100	75
Biotic Structure					
<i>Plant Community submetric A: Number of Plant Layers</i>	9			3 Layers	
<i>Plant Community submetric B: Number of Co-dominant species</i>	6			8 co-dominant spp.	
<i>Plant Community submetric C: Percent Invasion</i>	9			25% invasion	
Plant Community Metric <i>(average of submetrics A-C)</i>		8			
Horizontal Interspersion and Zonation		9		½ AA = 12; ½ AA =6. Avg=9	
Vertical Biotic Structure		6			
Attribute Score		Raw 23	Final 63.9	Final Attribute Score = (Raw Score/36)100	63.9
Overall AA Score (Average of Final Attribute Scores)				72.9	

Stressor Checklist Worksheet

HYDROLOGY ATTRIBUTE (WITHIN 50 M OF AA)	Present and likely to have negative effect on AA	Significant negative effect on AA
Point Source (PS) discharges (POTW, other non-stormwater)		
Non-point Source (Non-PS) discharges (urban runoff, farm drainage)	X	
Flow diversions or unnatural inflows		
Dams (reservoirs, detention basins, recharge basins)		
Flow obstructions (culverts, paved stream crossings)		
Weir/drop structure, tide gates		
Dredged inlet/channel		
Engineered channel (riprap, armored channel bank, bed)		
Dike/levees	X	
Groundwater extraction		
Ditches (borrow, agricultural drainage, mosquito control, etc.)		
Actively managed hydrology		
Comments		

PHYSICAL STRUCTURE ATTRIBUTE (WITHIN 50 M OF AA)	Present and likely to have negative effect on AA	Significant negative effect on AA
Filling or dumping of sediment or soils (N/A for restoration areas)		
Grading/ compaction (N/A for restoration areas)		
Plowing/Discing (N/A for restoration areas)		
Resource extraction (sediment, gravel, oil and/or gas)		
Vegetation management		
Excessive sediment or organic debris from watershed		
Excessive runoff from watershed		
Nutrient impaired (PS or Non-PS pollution)		
Heavy metal impaired (PS or Non-PS pollution)		
Pesticides or trace organics impaired (PS or Non-PS pollution)		
Bacteria and pathogens impaired (PS or Non-PS pollution)		
Trash or refuse		
Comments		

BIOTIC STRUCTURE ATTRIBUTE (WITHIN 50 M OF AA)	Present and likely to have negative effect on AA	Significant negative effect on AA
Mowing, grazing, excessive herbivory (within AA)		
Excessive human visitation	X	
Predation and habitat destruction by non-native vertebrates (e.g., Virginia opossum and domestic predators, such as feral pets)		
Tree cutting/sapling removal		
Removal of woody debris		
Treatment of non-native and nuisance plant species		
Pesticide application or vector control		
Biological resource extraction or stocking (fisheries, aquaculture)		
Excessive organic debris in matrix (for vernal pools)		
Lack of vegetation management to conserve natural resources		
Lack of treatment of invasive plants adjacent to AA or buffer		
Comments		

BUFFER AND LANDSCAPE CONTEXT ATTRIBUTE (WITHIN 500 M OF AA)	Present and likely to have negative effect on AA	Significant negative effect on AA
Urban residential		
Industrial/commercial		
Military training/Air traffic		
Dams (or other major flow regulation or disruption)		
Dryland farming		
Intensive row-crop agriculture		
Orchards/nurseries	X	
Commercial feedlots		
Dairies		
Ranching (enclosed livestock grazing or horse paddock or feedlot)		
Transportation corridor		
Rangeland (livestock rangeland also managed for native vegetation)		
Sports fields and urban parklands (golf courses, soccer fields, etc.)		
Passive recreation (bird-watching, hiking, etc.)		
Active recreation (off-road vehicles, mountain biking, hunting, fishing)	X	
Physical resource extraction (rock, sediment, oil/gas)		
Biological resource extraction (aquaculture, commercial fisheries)		
Comments		

Basic Information: Individual Vernal Pool

CRAM Site ID: APN: 331-080-001					
Project Site ID: Fresno to Bakersfield HST					
Assessment Area Name: V62A					
Project Name: Fresno to Bakersfield HST		Date (m/d/y)	9	29	11
Assessment Team Members for This AA					
G. Peracca					
C. Roberts					
Wetland Category: <input checked="" type="checkbox"/> Natural <input type="checkbox"/> Constructed <input type="checkbox"/> Restoration (Rehabilitation OR Enhancement)					
If Created or Restored, does the action encompass: <input type="checkbox"/> entire wetland <input type="checkbox"/> portion of the wetland					
What best describes the hydrologic state of the wetland at the time of assessment? <input type="checkbox"/> ponded/inundated <input type="checkbox"/> saturated soil, but no surface water <input checked="" type="checkbox"/> dry					
What is the apparent hydrologic regime of the wetland? <input type="checkbox"/> long-duration <input type="checkbox"/> medium-duration <input checked="" type="checkbox"/> short-duration					
Does the vernal pool system connect with the floodplain of a nearby stream? <input type="checkbox"/> yes <input checked="" type="checkbox"/> no					
Photo Identification Numbers and Description:					
	Photo ID No.	Description	Latitude	Longitude	Datum
1	1314	North			
2	1312	South			
3	1313	East			
4	1311	West			
5					
6					
Comments: *April 2012: updated using new Individual VP Module (V. 6.0). CRAM score based on old VP module V. 5.0.3 = 65.5. New CRAM score = 72.6					

Scoring Sheet: Individual Vernal Pools

AA Name: V62A			(m/d/y)	09/29/2011	
Attributes and Metrics		Alpha.	Numeric	Comments	
Buffer and Landscape Context					
(A) Aquatic Area Connectivity		B	9	Avg=18%	
(B): Percent of AA with Buffer	Alpha.	Numeric		100% with buffer	
	A	12			
(C): Average Buffer Width	B	9		Avg=186m	
	B	9			
(D): Buffer Condition	B	9			
Initial Attribute Score = $A + [D \times (B \times C)^{1/2}]^{1/2}$			18.7	Final Attribute Score = (Initial Score/24) x 100	77.8
Hydrology					
Water Source		A	12		
Hydroperiod		A	12		
Hydrologic Connectivity		B	9		
Initial Attribute Score			33	Final Attribute Score = (Initial Score/36) x 100	91.7
Physical Structure					
Structural Patch Richness		C	6	3 patch types	
Topographic Complexity		C	6		
Initial Attribute Score			12	Final Attribute Score = (Initial Score/24) x 100	50
Biotic Structure					
Horizontal Interspersion and Zonation		B	9		
Community composition submetric A: Number of Co-dominants	Alpha.	Numeric		4 co-dominant spp.	
	B	9			
Community composition submetric B: Percent Non-native	A	12		0% non-native spp.	
	A	12			
Community Composition submetric C: Endemic Species Richness	D	3	0 endemic spp.		
Plant Community Composition Metric (numeric average of submetrics A-C)			8		
Initial Attribute Score			17	Final Attribute Score = (Initial Score/24) x 100	70.8
Overall AA Score (Average of Final Attribute Scores)				72.6	

Worksheet 8: Stressor Checklist.

HYDROLOGY ATTRIBUTE (WITHIN 50 M OF AA)	Present	Present and likely to have significant negative effect on AA
Point Source (PS) discharges (POTW, other non-stormwater discharge)		
Non-point Source (Non-PS) discharges (urban runoff, farm drainage)		
Flow diversions or unnatural inflows		
Dams (reservoirs, detention basins, recharge basins)		
Flow obstructions (culverts, paved stream crossings)		
Weir/drop structure, tide gates		
Dredged inlet/channel		
Engineered channel (riprap, armored channel bank, bed)		
Dike/levees	X	
Groundwater extraction		
Ditches (borrow, agricultural drainage, mosquito control, etc.)		
Actively managed hydrology		
Comments		
Levee = railroad berm upstream of AA, not significant stressor- AA appears to be receiving sufficient water.		

PHYSICAL STRUCTURE ATTRIBUTE (WITHIN 50 M OF AA)	Present	Present and likely to have significant negative effect on AA
Filling or dumping of sediment or soils (N/A for restoration areas)		
Grading/ compaction (N/A for restoration areas)	X	
Plowing/Discing (N/A for restoration areas)		
Resource extraction (sediment, gravel, oil and/or gas)		
Vegetation management	X	
Excessive sediment or organic debris from watershed		
Excessive runoff from watershed		
Nutrient impaired (PS or Non-PS pollution)		
Heavy metal impaired (PS or Non-PS pollution)		
Pesticides or trace organics impaired (PS or Non-PS pollution)		
Bacteria and pathogens impaired (PS or Non-PS pollution)		
Trash or refuse		
Comments		
Veg management occurs along RR ROW but ROW is separated from AA by bermand gravel road (it is just at 50 m boundary) and veg. in AA is all native, undisturbed.		

BIOTIC STRUCTURE ATTRIBUTE (WITHIN 50 M OF AA)	Present	Present and Likely to Have Significant negative effect on AA
Mowing, grazing, excessive herbivory (within AA)		
Excessive human visitation		
Predation and habitat destruction by non-native vertebrates (e.g., <i>Virginia opossum</i> and domestic predators, such as feral pets)		
Tree cutting/sapling removal		
Removal of woody debris		
Treatment of non-native and nuisance plant species	X	
Pesticide application or vector control	X	
Biological resource extraction or stocking (fisheries, aquaculture)		
Excessive organic debris in matrix (for vernal pools)		
Lack of vegetation management to conserve natural resources		
Lack of treatment of invasive plants adjacent to AA or buffer		
Comments		
See comment for Physical Structure Attribute re: veg mgmt along RR ROW.		

BUFFER AND LANDSCAPE CONTEXT ATTRIBUTE (WITHIN 500 M OF AA)	Present	Present and likely to have significant negative effect on AA
Urban residential		
Industrial/commercial		
Military training/Air traffic		
Dams (or other major flow regulation or disruption)		
Dryland farming		
Intensive row-crop agriculture		
Orchards/nurseries	X	
Commercial feedlots		
Dairies		
Ranching (enclosed livestock grazing or horse paddock or feedlot)		
Transportation corridor	X	X
Rangeland (livestock rangeland also managed for native vegetation)		
Sports fields and urban parklands (golf courses, soccer fields, etc.)		
Passive recreation (bird-watching, hiking, etc.)		
Active recreation (off-road vehicles, mountain biking, hunting, fishing)		
Physical resource extraction (rock, sediment, oil/gas)		
Biological resource extraction (aquaculture, commercial fisheries)		
Comments		
Trans. Corridor = RR and Hwy. They have had effect on landscape connectivity for site.		

Basic Information: Individual Vernal Pool

CRAM Site ID: APN: 331-100-030					
Project Site ID: Fresno to Bakersfield HST					
Assessment Area Name: V65					
Project Name: Fresno to Bakersfield HST		Date (m/d/y)	9	29	11
Assessment Team Members for This AA					
G. Peracca					
C. Roberts					
Wetland Category: <input checked="" type="checkbox"/> Natural <input type="checkbox"/> Constructed <input type="checkbox"/> Restoration (Rehabilitation OR Enhancement)					
If Created or Restored, does the action encompass: <input type="checkbox"/> entire wetland <input type="checkbox"/> portion of the wetland					
What best describes the hydrologic state of the wetland at the time of assessment? <input type="checkbox"/> ponded/inundated <input type="checkbox"/> saturated soil, but no surface water <input checked="" type="checkbox"/> dry					
What is the apparent hydrologic regime of the wetland? <input type="checkbox"/> long-duration <input type="checkbox"/> medium-duration <input checked="" type="checkbox"/> short-duration					
Does the vernal pool system connect with the floodplain of a nearby stream? <input type="checkbox"/> yes <input checked="" type="checkbox"/> no					
Photo Identification Numbers and Description:					
	Photo ID No.	Description	Latitude	Longitude	Datum
1	1324	North			
2	1322	South			
3	1323	East			
4	1321	West			
5					
6					
Comments: *April 2012: updated using new Individual VP Module (V. 6.0). CRAM score based on old VP module V. 5.0.3 = 70.5 New CRAM score = 76.4					

Scoring Sheet: Individual Vernal Pools

Attributes and Metrics			Alpha.	Numeric	Comments	
AA Name: V65					(m/d/y)	09/29/2011
Buffer and Landscape Context						
(A) Aquatic Area Connectivity			A	12	Avg=24.5%	
<i>(B): Percent of AA with Buffer</i>		Alpha.	Numeric		100% with buffer	
		A	12			
<i>(C): Average Buffer Width</i>		A	12		Avg=211m	
<i>(D): Buffer Condition</i>		B	9			
Initial Attribute Score = $A + [D \times (B \times C)^{1/2}]^{1/2}$				22.4	Final Attribute Score = (Initial Score/24) x 100	93.3
Hydrology						
Water Source			A	12		
Hydroperiod			A	12		
Hydrologic Connectivity			B	9		
Initial Attribute Score				33	Final Attribute Score = (Initial Score/36) x 100	91.7
Physical Structure						
Structural Patch Richness			C	6	3 patch types	
Topographic Complexity			C	6		
Initial Attribute Score				12	Final Attribute Score = (Initial Score/24) x 100	50
Biotic Structure						
Horizontal Interspersion and Zonation			B	9		
<i>Community composition submetric A: Number of Co-dominants</i>		Alpha.	Numeric		5 co-dominant spp.	
		B	9			
<i>Community composition submetric B: Percent Non-native</i>		A	12		0% non-native spp.	
<i>Community Composition submetric C: Endemic Species Richness</i>		D	3		0 endemic spp.	
Plant Community Composition Metric (numeric average of submetrics A-C)				8		
Initial Attribute Score				17	Final Attribute Score = (Initial Score/24) x 100	70.8
Overall AA Score (Average of Final Attribute Scores)					76.4	

Worksheet 8: Stressor Checklist.

HYDROLOGY ATTRIBUTE (WITHIN 50 M OF AA)	Present	Present and likely to have significant negative effect on AA
Point Source (PS) discharges (POTW, other non-stormwater discharge)		
Non-point Source (Non-PS) discharges (urban runoff, farm drainage)		
Flow diversions or unnatural inflows		
Dams (reservoirs, detention basins, recharge basins)		
Flow obstructions (culverts, paved stream crossings)		
Weir/drop structure, tide gates		
Dredged inlet/channel		
Engineered channel (riprap, armored channel bank, bed)		
Dike/levees	X	
Groundwater extraction		
Ditches (borrow, agricultural drainage, mosquito control, etc.)		
Actively managed hydrology		
Comments		

PHYSICAL STRUCTURE ATTRIBUTE (WITHIN 50 M OF AA)	Present	Present and likely to have significant negative effect on AA
Filling or dumping of sediment or soils (N/A for restoration areas)		
Grading/ compaction (N/A for restoration areas)	X	
Plowing/Discing (N/A for restoration areas)		
Resource extraction (sediment, gravel, oil and/or gas)		
Vegetation management		
Excessive sediment or organic debris from watershed		
Excessive runoff from watershed		
Nutrient impaired (PS or Non-PS pollution)		
Heavy metal impaired (PS or Non-PS pollution)		
Pesticides or trace organics impaired (PS or Non-PS pollution)		
Bacteria and pathogens impaired (PS or Non-PS pollution)		
Trash or refuse		
Comments		

BIOTIC STRUCTURE ATTRIBUTE (WITHIN 50 M OF AA)	Present	Present and Likely to Have Significant negative effect on AA
Mowing, grazing, excessive herbivory (within AA)		
Excessive human visitation		
Predation and habitat destruction by non-native vertebrates (e.g., <i>Virginia opossum</i> and domestic predators, such as feral pets)		
Tree cutting/sapling removal		
Removal of woody debris		
Treatment of non-native and nuisance plant species		
Pesticide application or vector control		
Biological resource extraction or stocking (fisheries, aquaculture)		
Excessive organic debris in matrix (for vernal pools)		
Lack of vegetation management to conserve natural resources		
Lack of treatment of invasive plants adjacent to AA or buffer		
Comments		

BUFFER AND LANDSCAPE CONTEXT ATTRIBUTE (WITHIN 500 M OF AA)	Present	Present and likely to have significant negative effect on AA
Urban residential		
Industrial/commercial		
Military training/Air traffic		
Dams (or other major flow regulation or disruption)		
Dryland farming		
Intensive row-crop agriculture		
Orchards/nurseries	X	
Commercial feedlots		
Dairies		
Ranching (enclosed livestock grazing or horse paddock or feedlot)		
Transportation corridor	X	
Rangeland (livestock rangeland also managed for native vegetation)		
Sports fields and urban parklands (golf courses, soccer fields, etc.)		
Passive recreation (bird-watching, hiking, etc.)		
Active recreation (off-road vehicles, mountain biking, hunting, fishing)		
Physical resource extraction (rock, sediment, oil/gas)		
Biological resource extraction (aquaculture, commercial fisheries)		
Comments		

Basic Information: Individual Vernal Pool

CRAM Site ID: APN: 333-130-004					
Project Site ID: Fresno to Bakersfield HST					
Assessment Area Name: V70					
Project Name: Fresno to Bakersfield HST		Date (m/d/y)	9	21	11
Assessment Team Members for This AA					
C. Julian		A. Langston			
J. Love		C. Roberts			
(Z. Simmons-USACE)					
Wetland Category:					
<input checked="" type="checkbox"/> Natural <input type="checkbox"/> Constructed <input type="checkbox"/> Restoration (Rehabilitation OR Enhancement)					
If Created or Restored, does the action encompass:					
<input type="checkbox"/> entire wetland <input type="checkbox"/> portion of the wetland					
What best describes the hydrologic state of the wetland at the time of assessment?					
<input type="checkbox"/> ponded/inundated <input type="checkbox"/> saturated soil, but no surface water <input checked="" type="checkbox"/> dry					
What is the apparent hydrologic regime of the wetland?					
<input type="checkbox"/> long-duration <input type="checkbox"/> medium-duration <input checked="" type="checkbox"/> short-duration					
Does the vernal pool system connect with the floodplain of a nearby stream?					
<input type="checkbox"/> yes <input checked="" type="checkbox"/> no					
Photo Identification Numbers and Description:					
	Photo ID No.	Description	Latitude	Longitude	Datum
1	1201	North			
2	1203	South			
3	1202	East			
4	1204	West			
5					
6					
Comments:					
*April 2012: updated using new Individual VP Module (V. 6.0). CRAM score based on old VP module V. 5.0.3 = 55.7 New CRAM score = 56.7					

Scoring Sheet: Individual Vernal Pools

AA Name: V70			(m/d/y)	09/21/2011
Attributes and Metrics		Alpha.	Numeric	Comments
Buffer and Landscape Context				
(A) Aquatic Area Connectivity		D	3	Avg=0%
(B): Percent of AA with Buffer	Alpha.	Numeric		100% with buffer
	A	12		
(C): Average Buffer Width	A	12		Avg=195m
	B	9		
Initial Attribute Score = $A + [D \times (B \times C)^{1/2}]^{1/2}$			13.4	Final Attribute Score = (Initial Score/24) x 100
				55.8
Hydrology				
Water Source		A	12	
Hydroperiod		B	9	
Hydrologic Connectivity		C	6	
Initial Attribute Score			27	Final Attribute Score = (Initial Score/36) x 100
				75
Physical Structure				
Structural Patch Richness		D	3	2 patch types
Topographic Complexity		C	6	
Initial Attribute Score			9	Final Attribute Score = (Initial Score/24) x 100
				37.5
Biotic Structure				
Horizontal Interspersion and Zonation		B	9	
Community composition submetric	Alpha.	Numeric		
A: Number of Co-dominants	B	9		4 co-dominant spp.
Community composition submetric				
B: Percent Non-native	D	3		75% non-native spp.
Community Composition submetric				
C: Endemic Species Richness	D	3	0 endemic spp.	
Plant Community Composition Metric (numeric average of submetrics A-C)			5	
Initial Attribute Score			14	Final Attribute Score = (Initial Score/24) x 100
				58.3
Overall AA Score (Average of Final Attribute Scores)				56.7

Worksheet 8: Stressor Checklist.

HYDROLOGY ATTRIBUTE (WITHIN 50 M OF AA)	Present	Present and likely to have significant negative effect on AA
Point Source (PS) discharges (POTW, other non-stormwater discharge)		
Non-point Source (Non-PS) discharges (urban runoff, farm drainage)		
Flow diversions or unnatural inflows		
Dams (reservoirs, detention basins, recharge basins)		
Flow obstructions (culverts, paved stream crossings)		
Weir/drop structure, tide gates		
Dredged inlet/channel		
Engineered channel (riprap, armored channel bank, bed)		
Dike/levees	X	
Groundwater extraction		
Ditches (borrow, agricultural drainage, mosquito control, etc.)		
Actively managed hydrology		
Comments		

PHYSICAL STRUCTURE ATTRIBUTE (WITHIN 50 M OF AA)	Present	Present and likely to have significant negative effect on AA
Filling or dumping of sediment or soils (N/A for restoration areas)		
Grading/ compaction (N/A for restoration areas)	X	
Plowing/Discing (N/A for restoration areas)		
Resource extraction (sediment, gravel, oil and/or gas)		
Vegetation management		
Excessive sediment or organic debris from watershed		
Excessive runoff from watershed		
Nutrient impaired (PS or Non-PS pollution)		
Heavy metal impaired (PS or Non-PS pollution)		
Pesticides or trace organics impaired (PS or Non-PS pollution)		
Bacteria and pathogens impaired (PS or Non-PS pollution)		
Trash or refuse		
Comments		

BIOTIC STRUCTURE ATTRIBUTE (WITHIN 50 M OF AA)	Present	Present and Likely to Have Significant negative effect on AA
Mowing, grazing, excessive herbivory (within AA)		
Excessive human visitation		
Predation and habitat destruction by non-native vertebrates (e.g., <i>Virginia opossum</i> and domestic predators, such as feral pets)		
Tree cutting/sapling removal		
Removal of woody debris		
Treatment of non-native and nuisance plant species		
Pesticide application or vector control		
Biological resource extraction or stocking (fisheries, aquaculture)		
Excessive organic debris in matrix (for vernal pools)		
Lack of vegetation management to conserve natural resources		
Lack of treatment of invasive plants adjacent to AA or buffer		
Comments		

BUFFER AND LANDSCAPE CONTEXT ATTRIBUTE (WITHIN 500 M OF AA)	Present	Present and likely to have significant negative effect on AA
Urban residential		
Industrial/commercial		
Military training/Air traffic		
Dams (or other major flow regulation or disruption)		
Dryland farming		
Intensive row-crop agriculture		
Orchards/nurseries	X	
Commercial feedlots		
Dairies		
Ranching (enclosed livestock grazing or horse paddock or feedlot)		
Transportation corridor	X	
Rangeland (livestock rangeland also managed for native vegetation)		
Sports fields and urban parklands (golf courses, soccer fields, etc.)		
Passive recreation (bird-watching, hiking, etc.)		
Active recreation (off-road vehicles, mountain biking, hunting, fishing)		
Physical resource extraction (rock, sediment, oil/gas)		
Biological resource extraction (aquaculture, commercial fisheries)		
Comments		

Basic Information: Individual Vernal Pool

CRAM Site ID: APN: 333-130-004					
Project Site ID: Fresno to Bakersfield HST					
Assessment Area Name: V72					
Project Name: Fresno to Bakersfield HST		Date (m/d/y)	9	21	11
Assessment Team Members for This AA					
C. Julian		A. Langston			
J. Love		C. Roberts			
(Z. Simmons-USACE)					
Wetland Category:					
<input checked="" type="checkbox"/> Natural <input type="checkbox"/> Constructed <input type="checkbox"/> Restoration (Rehabilitation OR Enhancement)					
If Created or Restored, does the action encompass:					
<input type="checkbox"/> entire wetland <input type="checkbox"/> portion of the wetland					
What best describes the hydrologic state of the wetland at the time of assessment?					
<input type="checkbox"/> ponded/inundated <input type="checkbox"/> saturated soil, but no surface water <input checked="" type="checkbox"/> dry					
What is the apparent hydrologic regime of the wetland?					
<input type="checkbox"/> long-duration <input type="checkbox"/> medium-duration <input checked="" type="checkbox"/> short-duration					
Does the vernal pool system connect with the floodplain of a nearby stream?					
<input type="checkbox"/> yes <input checked="" type="checkbox"/> no					
Photo Identification Numbers and Description:					
	Photo ID No.	Description	Latitude	Longitude	Datum
1	1197	North			
2	1199	South			
3	1198	East			
4	1200	West			
5					
6					
Comments:					
*April 2012: updated using new Individual VP Module (V. 6.0). CRAM score based on old VP module V. 5.0.3 = 66.0 New CRAM score = 66.0					

Scoring Sheet: Individual Vernal Pools

AA Name: V72			(m/d/y)	09/21/2011	
Attributes and Metrics		Alpha.	Numeric	Comments	
Buffer and Landscape Context					
(A) Aquatic Area Connectivity		D	3	Avg=3%	
(B): Percent of AA with Buffer	Alpha.	Numeric		100% with buffer	
	A	12			
(C): Average Buffer Width	A	12		Avg=190m	
	A	12			
(D): Buffer Condition	B	9			
Initial Attribute Score = $A + [D \times (B \times C)^{1/2}]^{1/2}$			13.4	Final Attribute Score = (Initial Score/24) x 100	55.8
Hydrology					
Water Source		A	12		
Hydroperiod		B	9		
Hydrologic Connectivity		B	9		
Initial Attribute Score			30	Final Attribute Score = (Initial Score/36) x 100	83.3
Physical Structure					
Structural Patch Richness		D	3	2 patch types	
Topographic Complexity		B	9		
Initial Attribute Score			12	Final Attribute Score = (Initial Score/24) x 100	50
Biotic Structure					
Horizontal Interspersion and Zonation		A	12		
Community composition submetric A: Number of Co-dominants	Alpha.	Numeric		6 co-dominant spp.	
	A	12			
Community composition submetric B: Percent Non-native	D	3		50% non-native spp.	
	D	3			
Community Composition submetric C: Endemic Species Richness	D	3		0 endemic spp.	
Plant Community Composition Metric (numeric average of submetrics A-C)			6		
Initial Attribute Score			18	Final Attribute Score = (Initial Score/24) x 100	75
Overall AA Score (Average of Final Attribute Scores)				66.0	

Worksheet 8: Stressor Checklist.

HYDROLOGY ATTRIBUTE (WITHIN 50 M OF AA)	Present	Present and likely to have significant negative effect on AA
Point Source (PS) discharges (POTW, other non-stormwater discharge)		
Non-point Source (Non-PS) discharges (urban runoff, farm drainage)		
Flow diversions or unnatural inflows		
Dams (reservoirs, detention basins, recharge basins)		
Flow obstructions (culverts, paved stream crossings)	X	
Weir/drop structure, tide gates		
Dredged inlet/channel		
Engineered channel (riprap, armored channel bank, bed)		
Dike/levees	X	
Groundwater extraction		
Ditches (borrow, agricultural drainage, mosquito control, etc.)		
Actively managed hydrology		
Comments		
Road berm/levees are the source for both stressors.		

PHYSICAL STRUCTURE ATTRIBUTE (WITHIN 50 M OF AA)	Present	Present and likely to have significant negative effect on AA
Filling or dumping of sediment or soils (N/A for restoration areas)		
Grading/ compaction (N/A for restoration areas)	X	
Plowing/Discing (N/A for restoration areas)		
Resource extraction (sediment, gravel, oil and/or gas)		
Vegetation management		
Excessive sediment or organic debris from watershed		
Excessive runoff from watershed		
Nutrient impaired (PS or Non-PS pollution)		
Heavy metal impaired (PS or Non-PS pollution)		
Pesticides or trace organics impaired (PS or Non-PS pollution)		
Bacteria and pathogens impaired (PS or Non-PS pollution)		
Trash or refuse	X	X
Comments		
Trash scattered in wetland and dense dump across levee.		

BIOTIC STRUCTURE ATTRIBUTE (WITHIN 50 M OF AA)	Present	Present and Likely to Have Significant negative effect on AA
Mowing, grazing, excessive herbivory (within AA)		
Excessive human visitation		
Predation and habitat destruction by non-native vertebrates (e.g., <i>Virginia opossum</i> and domestic predators, such as feral pets)		
Tree cutting/sapling removal		
Removal of woody debris		
Treatment of non-native and nuisance plant species		
Pesticide application or vector control		
Biological resource extraction or stocking (fisheries, aquaculture)		
Excessive organic debris in matrix (for vernal pools)		
Lack of vegetation management to conserve natural resources		
Lack of treatment of invasive plants adjacent to AA or buffer		
Comments		

BUFFER AND LANDSCAPE CONTEXT ATTRIBUTE (WITHIN 500 M OF AA)	Present	Present and likely to have significant negative effect on AA
Urban residential		
Industrial/commercial		
Military training/Air traffic		
Dams (or other major flow regulation or disruption)		
Dryland farming	X	
Intensive row-crop agriculture		
Orchards/nurseries		
Commercial feedlots		
Dairies		
Ranching (enclosed livestock grazing or horse paddock or feedlot)		
Transportation corridor		
Rangeland (livestock rangeland also managed for native vegetation)		
Sports fields and urban parklands (golf courses, soccer fields, etc.)		
Passive recreation (bird-watching, hiking, etc.)		
Active recreation (off-road vehicles, mountain biking, hunting, fishing)		
Physical resource extraction (rock, sediment, oil/gas)		
Biological resource extraction (aquaculture, commercial fisheries)		
Comments		
Suggestion of farming in last decade; not recent.		

Basic Information: Individual Vernal Pool

CRAM Site ID: APN: 333-130-006					
Project Site ID: Fresno to Bakersfield HST					
Assessment Area Name: V74					
Project Name: Fresno to Bakersfield HST		Date (m/d/y)	9	20	11
Assessment Team Members for This AA					
C. Julian		A. Langston			
J. Love		C. Roberts			
Wetland Category: <input checked="" type="checkbox"/> Natural <input type="checkbox"/> Constructed <input type="checkbox"/> Restoration (Rehabilitation OR Enhancement)					
If Created or Restored, does the action encompass: <input type="checkbox"/> entire wetland <input type="checkbox"/> portion of the wetland					
What best describes the hydrologic state of the wetland at the time of assessment? <input type="checkbox"/> ponded/inundated <input type="checkbox"/> saturated soil, but no surface water <input checked="" type="checkbox"/> dry					
What is the apparent hydrologic regime of the wetland? <input type="checkbox"/> long-duration <input type="checkbox"/> medium-duration <input checked="" type="checkbox"/> short-duration					
Does the vernal pool system connect with the floodplain of a nearby stream? <input type="checkbox"/> yes <input checked="" type="checkbox"/> no					
Photo Identification Numbers and Description:					
	Photo ID No.	Description	Latitude	Longitude	Datum
1	1179	North			
2	1181	South			
3	1180	East			
4	1182	West			
5					
6					
Comments: *April 2012: updated using new Individual VP Module (V. 6.0). CRAM score based on old VP module V. 5.0.3 = 69.3 New CRAM score = 72.3					

Scoring Sheet: Individual Vernal Pools

Attributes and Metrics			Alpha.	Numeric	Comments	
AA Name: V74					(m/d/y)	09/20/2011
Buffer and Landscape Context						
(A) Aquatic Area Connectivity			D	3	Avg=1%	
(B): Percent of AA with Buffer	Alpha.	Numeric			100% with buffer	
(C): Average Buffer Width	A	12			Avg=250m	
(D): Buffer Condition	B	9				
Initial Attribute Score = $A + [D \times (B \times C)^{1/2}]^{1/2}$					13.4	
Hydrology						
Water Source			A	12		
Hydroperiod			B	9		
Hydrologic Connectivity			B	9		
Initial Attribute Score			30		Final Attribute Score = (Initial Score/36) x 100	83.3
Physical Structure						
Structural Patch Richness			C	6	3 patch types	
Topographic Complexity			A	12		
Initial Attribute Score			18		Final Attribute Score = (Initial Score/24) x 100	75
Biotic Structure						
Horizontal Interspersion and Zonation			A	12		
Community composition submetric A: Number of Co-dominants	Alpha.	Numeric			3 co-dominant spp.	
Community composition submetric B: Percent Non-native	B	9			33% non-native spp.	
Community Composition submetric C: Endemic Species Richness	D	3			0 endemic spp.	
Plant Community Composition Metric (numeric average of submetrics A-C)					6	
Initial Attribute Score			18		Final Attribute Score = (Initial Score/24) x 100	75
Overall AA Score (Average of Final Attribute Scores)					72.3	

Worksheet 8: Stressor Checklist.

HYDROLOGY ATTRIBUTE (WITHIN 50 M OF AA)	Present	Present and likely to have significant negative effect on AA
Point Source (PS) discharges (POTW, other non-stormwater discharge)		
Non-point Source (Non-PS) discharges (urban runoff, farm drainage)		
Flow diversions or unnatural inflows		
Dams (reservoirs, detention basins, recharge basins)		
Flow obstructions (culverts, paved stream crossings)	X	
Weir/drop structure, tide gates		
Dredged inlet/channel		
Engineered channel (riprap, armored channel bank, bed)		
Dike/levees	X	
Groundwater extraction		
Ditches (borrow, agricultural drainage, mosquito control, etc.)		
Actively managed hydrology		
Comments		

PHYSICAL STRUCTURE ATTRIBUTE (WITHIN 50 M OF AA)	Present	Present and likely to have significant negative effect on AA
Filling or dumping of sediment or soils (N/A for restoration areas)		
Grading/ compaction (N/A for restoration areas)	X	
Plowing/Discing (N/A for restoration areas)		
Resource extraction (sediment, gravel, oil and/or gas)		
Vegetation management		
Excessive sediment or organic debris from watershed		
Excessive runoff from watershed		
Nutrient impaired (PS or Non-PS pollution)		
Heavy metal impaired (PS or Non-PS pollution)		
Pesticides or trace organics impaired (PS or Non-PS pollution)		
Bacteria and pathogens impaired (PS or Non-PS pollution)		
Trash or refuse	X	
Comments		

BIOTIC STRUCTURE ATTRIBUTE (WITHIN 50 M OF AA)	Present	Present and Likely to Have Significant negative effect on AA
Mowing, grazing, excessive herbivory (within AA)		
Excessive human visitation		
Predation and habitat destruction by non-native vertebrates (e.g., <i>Virginia opossum</i> and domestic predators, such as feral pets)		
Tree cutting/sapling removal		
Removal of woody debris		
Treatment of non-native and nuisance plant species		
Pesticide application or vector control		
Biological resource extraction or stocking (fisheries, aquaculture)		
Excessive organic debris in matrix (for vernal pools)	X	
Lack of vegetation management to conserve natural resources		
Lack of treatment of invasive plants adjacent to AA or buffer		
Comments		
Hordeum is abundant.		

BUFFER AND LANDSCAPE CONTEXT ATTRIBUTE (WITHIN 500 M OF AA)	Present	Present and likely to have significant negative effect on AA
Urban residential		
Industrial/commercial		
Military training/Air traffic		
Dams (or other major flow regulation or disruption)		
Dryland farming	X	
Intensive row-crop agriculture		
Orchards/nurseries		
Commercial feedlots		
Dairies		
Ranching (enclosed livestock grazing or horse paddock or feedlot)		
Transportation corridor		
Rangeland (livestock rangeland also managed for native vegetation)		
Sports fields and urban parklands (golf courses, soccer fields, etc.)		
Passive recreation (bird-watching, hiking, etc.)		
Active recreation (off-road vehicles, mountain biking, hunting, fishing)		
Physical resource extraction (rock, sediment, oil/gas)		
Biological resource extraction (aquaculture, commercial fisheries)		
Comments		

Basic Information: Individual Vernal Pool

CRAM Site ID: APN: 333-130-006					
Project Site ID: Fresno to Bakersfield HST					
Assessment Area Name: V75					
Project Name: Fresno to Bakersfield HST		Date (m/d/y)	9	20	11
Assessment Team Members for This AA					
C. Julian		A. Langston			
J. Love		C. Roberts			
Wetland Category: <input checked="" type="checkbox"/> Natural <input type="checkbox"/> Constructed <input type="checkbox"/> Restoration (Rehabilitation OR Enhancement)					
If Created or Restored, does the action encompass: <input type="checkbox"/> entire wetland <input type="checkbox"/> portion of the wetland					
What best describes the hydrologic state of the wetland at the time of assessment? <input type="checkbox"/> ponded/inundated <input type="checkbox"/> saturated soil, but no surface water <input checked="" type="checkbox"/> dry					
What is the apparent hydrologic regime of the wetland? <input type="checkbox"/> long-duration <input type="checkbox"/> medium-duration <input checked="" type="checkbox"/> short-duration					
Does the vernal pool system connect with the floodplain of a nearby stream? <input type="checkbox"/> yes <input checked="" type="checkbox"/> no					
Photo Identification Numbers and Description:					
	Photo ID No.	Description	Latitude	Longitude	Datum
1	1183	North			
2	1185	South			
3	1184	East			
4	1186	West			
5					
6					
Comments: *April 2012: updated using new Individual VP Module (V. 6.0). CRAM score based on old VP module V. 5.0.3 = 66.1 New CRAM score = 66.0					

Scoring Sheet: Individual Vernal Pools

AA Name: V75			(m/d/y)	09/20/2011
Attributes and Metrics		Alpha.	Numeric	Comments
Buffer and Landscape Context				
(A) Aquatic Area Connectivity		D	3	Avg=1.8%
(B): Percent of AA with Buffer	Alpha.	Numeric		100% with buffer
	A	12		
(C): Average Buffer Width	A	12		Avg=250m
	B	9		
Initial Attribute Score = $A + [D \times (B \times C)^{1/2}]^{1/2}$			13.4	Final Attribute Score = (Initial Score/24) x 100
Hydrology				
Water Source		A	12	
Hydroperiod		B	9	
Hydrologic Connectivity		B	9	
Initial Attribute Score			30	Final Attribute Score = (Initial Score/36) x 100
Physical Structure				
Structural Patch Richness		C	6	3 patch types
Topographic Complexity		B	9	
Initial Attribute Score			15	Final Attribute Score = (Initial Score/24) x 100
Biotic Structure				
Horizontal Interspersion and Zonation		B	9	
<i>Community composition submetric</i>	Alpha.	Numeric		
<i>A: Number of Co-dominants</i>	C	6		3 co-dominant spp.
<i>Community composition submetric</i>	B	9		33% non-native spp.
<i>B: Percent Non-native</i>	B	9		
<i>Community Composition submetric</i>	D	3		0 endemic spp.
<i>C: Endemic Species Richness</i>	D	3		
Plant Community Composition Metric (numeric average of submetrics A-C)			6	
Initial Attribute Score			15	Final Attribute Score = (Initial Score/24) x 100
Overall AA Score (Average of Final Attribute Scores)				66.0

Worksheet 8: Stressor Checklist.

HYDROLOGY ATTRIBUTE (WITHIN 50 M OF AA)	Present	Present and likely to have significant negative effect on AA
Point Source (PS) discharges (POTW, other non-stormwater discharge)		
Non-point Source (Non-PS) discharges (urban runoff, farm drainage)		
Flow diversions or unnatural inflows		
Dams (reservoirs, detention basins, recharge basins)		
Flow obstructions (culverts, paved stream crossings)	X	
Weir/drop structure, tide gates		
Dredged inlet/channel		
Engineered channel (riprap, armored channel bank, bed)		
Dike/levees	X	
Groundwater extraction		
Ditches (borrow, agricultural drainage, mosquito control, etc.)		
Actively managed hydrology		
Comments		

PHYSICAL STRUCTURE ATTRIBUTE (WITHIN 50 M OF AA)	Present	Present and likely to have significant negative effect on AA
Filling or dumping of sediment or soils (N/A for restoration areas)		
Grading/ compaction (N/A for restoration areas)	X	
Plowing/Discing (N/A for restoration areas)		
Resource extraction (sediment, gravel, oil and/or gas)		
Vegetation management		
Excessive sediment or organic debris from watershed		
Excessive runoff from watershed		
Nutrient impaired (PS or Non-PS pollution)		
Heavy metal impaired (PS or Non-PS pollution)		
Pesticides or trace organics impaired (PS or Non-PS pollution)		
Bacteria and pathogens impaired (PS or Non-PS pollution)		
Trash or refuse	X	
Comments		

BIOTIC STRUCTURE ATTRIBUTE (WITHIN 50 M OF AA)	Present	Present and Likely to Have Significant negative effect on AA
Mowing, grazing, excessive herbivory (within AA)		
Excessive human visitation		
Predation and habitat destruction by non-native vertebrates (e.g., <i>Virginia opossum</i> and domestic predators, such as feral pets)		
Tree cutting/sapling removal		
Removal of woody debris		
Treatment of non-native and nuisance plant species		
Pesticide application or vector control		
Biological resource extraction or stocking (fisheries, aquaculture)		
Excessive organic debris in matrix (for vernal pools)		
Lack of vegetation management to conserve natural resources		
Lack of treatment of invasive plants adjacent to AA or buffer		
Comments		

BUFFER AND LANDSCAPE CONTEXT ATTRIBUTE (WITHIN 500 M OF AA)	Present	Present and likely to have significant negative effect on AA
Urban residential		
Industrial/commercial		
Military training/Air traffic		
Dams (or other major flow regulation or disruption)		
Dryland farming	X	
Intensive row-crop agriculture		
Orchards/nurseries		
Commercial feedlots		
Dairies		
Ranching (enclosed livestock grazing or horse paddock or feedlot)		
Transportation corridor		
Rangeland (livestock rangeland also managed for native vegetation)		
Sports fields and urban parklands (golf courses, soccer fields, etc.)		
Passive recreation (bird-watching, hiking, etc.)		
Active recreation (off-road vehicles, mountain biking, hunting, fishing)		
Physical resource extraction (rock, sediment, oil/gas)		
Biological resource extraction (aquaculture, commercial fisheries)		
Comments		

Basic Information: Individual Vernal Pool

CRAM Site ID: APN: 333-120-001					
Project Site ID: Fresno to Bakersfield HST					
Assessment Area Name: V76A					
Project Name: Fresno to Bakersfield HST		Date (m/d/y)	9	19	11
Assessment Team Members for This AA					
C. Julian		A. Langston			
J. Love		C. Roberts			
J. Whitfield					
Wetland Category:					
<input checked="" type="checkbox"/> Natural <input type="checkbox"/> Constructed <input type="checkbox"/> Restoration (Rehabilitation OR Enhancement)					
If Created or Restored, does the action encompass:					
<input type="checkbox"/> entire wetland <input type="checkbox"/> portion of the wetland					
What best describes the hydrologic state of the wetland at the time of assessment?					
<input type="checkbox"/> ponded/inundated <input type="checkbox"/> saturated soil, but no surface water <input checked="" type="checkbox"/> dry					
What is the apparent hydrologic regime of the wetland?					
<input type="checkbox"/> long-duration <input checked="" type="checkbox"/> medium-duration <input type="checkbox"/> short-duration					
Does the vernal pool system connect with the floodplain of a nearby stream?					
<input type="checkbox"/> yes <input checked="" type="checkbox"/> no					
Photo Identification Numbers and Description:					
	Photo ID No.	Description	Latitude	Longitude	Datum
1	1171	North			
2	1173	South			
3	1172	East			
4	1174	West			
5					
6					
Comments:					
*April 2012: updated using new Individual VP Module (V. 6.0). CRAM score based on old VP module V. 5.0.3 = 57.8 New CRAM score = 62.1					

Scoring Sheet: Individual Vernal Pools

AA Name: V76A			(m/d/y)	09/19/2011
Attributes and Metrics		Alpha.	Numeric	Comments
Buffer and Landscape Context				
(A) Aquatic Area Connectivity		B	9	Avg=20.8%
(B): Percent of AA with Buffer	Alpha.	Numeric		100% with buffer
(C): Average Buffer Width	A	12		Avg=250m
(D): Buffer Condition	C	6		
Initial Attribute Score = $A + [D \times (B \times C)^{1/2}]^{1/2}$				14.6
				60.9
Hydrology				
Water Source		A	12	
Hydroperiod		B	9	
Hydrologic Connectivity		B	9	
Initial Attribute Score			30	Final Attribute Score = (Initial Score/36) x 100
				83.3
Physical Structure				
Structural Patch Richness		C	6	3 patch types
Topographic Complexity		C	6	
Initial Attribute Score			12	Final Attribute Score = (Initial Score/24) x 100
				50
Biotic Structure				
Horizontal Interspersion and Zonation		B	9	
Community composition submetric	Alpha.	Numeric		
A: Number of Co-dominants	C	6		2 co-dominant spp.
Community composition submetric				
B: Percent Non-native	D	3		100% non-native spp.
Community Composition submetric				
C: Endemic Species Richness	D	3	0 endemic spp.	
Plant Community Composition Metric (numeric average of submetrics A-C)			4	
Initial Attribute Score			13	Final Attribute Score = (Initial Score/24) x 100
				54.2
Overall AA Score (Average of Final Attribute Scores)				62.1

Worksheet 8: Stressor Checklist.

HYDROLOGY ATTRIBUTE (WITHIN 50 M OF AA)	Present	Present and likely to have significant negative effect on AA
Point Source (PS) discharges (POTW, other non-stormwater discharge)		
Non-point Source (Non-PS) discharges (urban runoff, farm drainage)		
Flow diversions or unnatural inflows		
Dams (reservoirs, detention basins, recharge basins)		
Flow obstructions (culverts, paved stream crossings)	X	
Weir/drop structure, tide gates		
Dredged inlet/channel		
Engineered channel (riprap, armored channel bank, bed)		
Dike/levees	X	
Groundwater extraction		
Ditches (borrow, agricultural drainage, mosquito control, etc.)		
Actively managed hydrology		
Comments		
Berm to east; road grade to south; not a significant effect.		

PHYSICAL STRUCTURE ATTRIBUTE (WITHIN 50 M OF AA)	Present	Present and likely to have significant negative effect on AA
Filling or dumping of sediment or soils (N/A for restoration areas)		
Grading/ compaction (N/A for restoration areas)		
Plowing/Discing (N/A for restoration areas)		
Resource extraction (sediment, gravel, oil and/or gas)		
Vegetation management		
Excessive sediment or organic debris from watershed		
Excessive runoff from watershed		
Nutrient impaired (PS or Non-PS pollution)		
Heavy metal impaired (PS or Non-PS pollution)		
Pesticides or trace organics impaired (PS or Non-PS pollution)		
Bacteria and pathogens impaired (PS or Non-PS pollution)		
Trash or refuse		
Comments		

BIOTIC STRUCTURE ATTRIBUTE (WITHIN 50 M OF AA)	Present	Present and Likely to Have Significant negative effect on AA
Mowing, grazing, excessive herbivory (within AA)		
Excessive human visitation		
Predation and habitat destruction by non-native vertebrates (e.g., <i>Virginia opossum</i> and domestic predators, such as feral pets)		
Tree cutting/sapling removal		
Removal of woody debris		
Treatment of non-native and nuisance plant species		
Pesticide application or vector control		
Biological resource extraction or stocking (fisheries, aquaculture)		
Excessive organic debris in matrix (for vernal pools)		
Lack of vegetation management to conserve natural resources		
Lack of treatment of invasive plants adjacent to AA or buffer	X	
Comments		

BUFFER AND LANDSCAPE CONTEXT ATTRIBUTE (WITHIN 500 M OF AA)	Present	Present and likely to have significant negative effect on AA
Urban residential		
Industrial/commercial		
Military training/Air traffic		
Dams (or other major flow regulation or disruption)		
Dryland farming	X	
Intensive row-crop agriculture		
Orchards/nurseries		
Commercial feedlots		
Dairies		
Ranching (enclosed livestock grazing or horse paddock or feedlot)		
Transportation corridor		
Rangeland (livestock rangeland also managed for native vegetation)		
Sports fields and urban parklands (golf courses, soccer fields, etc.)		
Passive recreation (bird-watching, hiking, etc.)		
Active recreation (off-road vehicles, mountain biking, hunting, fishing)		
Physical resource extraction (rock, sediment, oil/gas)		
Biological resource extraction (aquaculture, commercial fisheries)		
Comments		

Basic Information: Individual Vernal Pool

CRAM Site ID: APN: 333-120-001					
Project Site ID: Fresno to Bakersfield HST					
Assessment Area Name: V76D					
Project Name: Fresno to Bakersfield HST		Date (m/d/y)	9	19	11
Assessment Team Members for This AA					
C. Julian		A. Langston			
J. Love		C. Roberts			
J. Whitfield					
Wetland Category:					
<input checked="" type="checkbox"/> Natural <input type="checkbox"/> Constructed <input type="checkbox"/> Restoration (Rehabilitation OR Enhancement)					
If Created or Restored, does the action encompass:					
<input type="checkbox"/> entire wetland <input type="checkbox"/> portion of the wetland					
What best describes the hydrologic state of the wetland at the time of assessment?					
<input type="checkbox"/> ponded/inundated <input type="checkbox"/> saturated soil, but no surface water <input checked="" type="checkbox"/> dry					
What is the apparent hydrologic regime of the wetland?					
<input type="checkbox"/> long-duration <input type="checkbox"/> medium-duration <input checked="" type="checkbox"/> short-duration					
Does the vernal pool system connect with the floodplain of a nearby stream?					
<input type="checkbox"/> yes <input checked="" type="checkbox"/> no					
Photo Identification Numbers and Description:					
	Photo ID No.	Description	Latitude	Longitude	Datum
1	1175	North			
2	1177	South			
3	1176	East			
4	1178	West			
5					
6					
Comments:					
*April 2012: updated using new Individual VP Module (V. 6.0). CRAM score based on old VP module V. 5.0.3 = 50.5 New CRAM score = 59.8					

Scoring Sheet: Individual Vernal Pools

AA Name: V76D			(m/d/y)	09/19/2011
Attributes and Metrics		Alpha.	Numeric	Comments
Buffer and Landscape Context				
(A) Aquatic Area Connectivity		B	9	Avg=16%
(B): Percent of AA with Buffer	Alpha.	Numeric		100% with buffer
(C): Average Buffer Width	A	12		Avg=250m
(D): Buffer Condition	B	9		
Initial Attribute Score = $A + [D \times (B \times C)^{1/2}]^{1/2}$				19.4
				80.8
Hydrology				
Water Source		A	12	
Hydroperiod		B	9	
Hydrologic Connectivity		B	9	
Initial Attribute Score			30	Final Attribute Score = (Initial Score/36) x 100
				83.3
Physical Structure				
Structural Patch Richness		C	6	3 patch types
Topographic Complexity		C	6	
Initial Attribute Score			12	Final Attribute Score = (Initial Score/24) x 100
				50
Biotic Structure				
Horizontal Interspersion and Zonation		D	3	
Community composition submetric A: Number of Co-dominants	Alpha.	Numeric		1 co-dominant sp.
Community composition submetric B: Percent Non-native	D	3		100% non-native spp.
Community Composition submetric C: Endemic Species Richness	D	3		0 endemic spp.
Plant Community Composition Metric (numeric average of submetrics A-C)				3
Initial Attribute Score			6	Final Attribute Score = (Initial Score/24) x 100
				25
Overall AA Score (Average of Final Attribute Scores)				59.8

Worksheet 8: Stressor Checklist.

HYDROLOGY ATTRIBUTE (WITHIN 50 M OF AA)	Present	Present and likely to have significant negative effect on AA
Point Source (PS) discharges (POTW, other non-stormwater discharge)		
Non-point Source (Non-PS) discharges (urban runoff, farm drainage)		
Flow diversions or unnatural inflows		
Dams (reservoirs, detention basins, recharge basins)		
Flow obstructions (culverts, paved stream crossings)	X	
Weir/drop structure, tide gates		
Dredged inlet/channel		
Engineered channel (riprap, armored channel bank, bed)		
Dike/levees	X	
Groundwater extraction		
Ditches (borrow, agricultural drainage, mosquito control, etc.)		
Actively managed hydrology		
Comments		
Road berm.		

PHYSICAL STRUCTURE ATTRIBUTE (WITHIN 50 M OF AA)	Present	Present and likely to have significant negative effect on AA
Filling or dumping of sediment or soils (N/A for restoration areas)		
Grading/ compaction (N/A for restoration areas)		
Plowing/Discing (N/A for restoration areas)		
Resource extraction (sediment, gravel, oil and/or gas)		
Vegetation management		
Excessive sediment or organic debris from watershed		
Excessive runoff from watershed		
Nutrient impaired (PS or Non-PS pollution)		
Heavy metal impaired (PS or Non-PS pollution)		
Pesticides or trace organics impaired (PS or Non-PS pollution)		
Bacteria and pathogens impaired (PS or Non-PS pollution)		
Trash or refuse		
Comments		

BIOTIC STRUCTURE ATTRIBUTE (WITHIN 50 M OF AA)	Present	Present and Likely to Have Significant negative effect on AA
Mowing, grazing, excessive herbivory (within AA)		
Excessive human visitation		
Predation and habitat destruction by non-native vertebrates (e.g., <i>Virginia opossum</i> and domestic predators, such as feral pets)		
Tree cutting/sapling removal		
Removal of woody debris		
Treatment of non-native and nuisance plant species		
Pesticide application or vector control		
Biological resource extraction or stocking (fisheries, aquaculture)		
Excessive organic debris in matrix (for vernal pools)		
Lack of vegetation management to conserve natural resources		
Lack of treatment of invasive plants adjacent to AA or buffer		
Comments		

BUFFER AND LANDSCAPE CONTEXT ATTRIBUTE (WITHIN 500 M OF AA)	Present	Present and likely to have significant negative effect on AA
Urban residential		
Industrial/commercial		
Military training/Air traffic		
Dams (or other major flow regulation or disruption)		
Dryland farming	X	
Intensive row-crop agriculture		
Orchards/nurseries		
Commercial feedlots		
Dairies		
Ranching (enclosed livestock grazing or horse paddock or feedlot)		
Transportation corridor		
Rangeland (livestock rangeland also managed for native vegetation)		
Sports fields and urban parklands (golf courses, soccer fields, etc.)		
Passive recreation (bird-watching, hiking, etc.)		
Active recreation (off-road vehicles, mountain biking, hunting, fishing)		
Physical resource extraction (rock, sediment, oil/gas)		
Biological resource extraction (aquaculture, commercial fisheries)		
Comments		

Basic Information: Individual Vernal Pool

CRAM Site ID: APN: 333-020-005					
Project Site ID: Fresno to Bakersfield HST					
Assessment Area Name: V104					
Project Name: Fresno to Bakersfield HST		Date (m/d/y)	9	27	11
Assessment Team Members for This AA					
A. Langston					
G. Peracca					
C. Roberts					
Wetland Category: <input checked="" type="checkbox"/> Natural <input type="checkbox"/> Constructed <input type="checkbox"/> Restoration (Rehabilitation OR Enhancement)					
If Created or Restored, does the action encompass: <input type="checkbox"/> entire wetland <input type="checkbox"/> portion of the wetland					
What best describes the hydrologic state of the wetland at the time of assessment? <input type="checkbox"/> ponded/inundated <input type="checkbox"/> saturated soil, but no surface water <input checked="" type="checkbox"/> dry					
What is the apparent hydrologic regime of the wetland? <input type="checkbox"/> long-duration <input type="checkbox"/> medium-duration <input checked="" type="checkbox"/> short-duration					
Does the vernal pool system connect with the floodplain of a nearby stream? <input type="checkbox"/> yes <input checked="" type="checkbox"/> no					
Photo Identification Numbers and Description:					
	Photo ID No.	Description	Latitude	Longitude	Datum
1	1278	North			
2	1280	South			
3	1179	East			
4	1181	West			
5					
6					
Comments: *April 2012: updated using new Individual VP Module (V. 6.0). CRAM score based on old VP module V. 5.0.3 = 74.5 New CRAM score = 77.5					

Scoring Sheet: Individual Vernal Pools

AA Name: V104			(m/d/y)	09/27/2011
Attributes and Metrics		Alpha.	Numeric	Comments
Buffer and Landscape Context				
(A) Aquatic Area Connectivity		A	12	Avg=32.3%
(B): Percent of AA with Buffer	Alpha.	Numeric		100% with buffer
(C): Average Buffer Width	A	12		Avg=199.4m
(D): Buffer Condition	B	9		
Initial Attribute Score = $A + [D \times (B \times C)^{1/2}]^{1/2}$				22.4
				93.3
Hydrology				
Water Source		A	12	
Hydroperiod		A	12	
Hydrologic Connectivity		A	12	
Initial Attribute Score			36	Final Attribute Score = (Initial Score/36) x 100
				100
Physical Structure				
Structural Patch Richness		D	3	2 patch types
Topographic Complexity		B	9	
Initial Attribute Score			12	Final Attribute Score = (Initial Score/24) x 100
				50
Biotic Structure				
Horizontal Interspersion and Zonation		B	9	
Community composition submetric	Alpha.	Numeric		
A: Number of Co-dominants	C	6		3 co-dominant spp.
Community composition submetric				
B: Percent Non-native	A	12		0% non-native spp.
Community Composition submetric				
C: Endemic Species Richness	D	3	0 endemic spp.	
Plant Community Composition Metric (numeric average of submetrics A-C)			7	
Initial Attribute Score			16	Final Attribute Score = (Initial Score/24) x 100
				66.7
Overall AA Score (Average of Final Attribute Scores)				77.5

Worksheet 8: Stressor Checklist.

HYDROLOGY ATTRIBUTE (WITHIN 50 M OF AA)	Present	Present and likely to have significant negative effect on AA
Point Source (PS) discharges (POTW, other non-stormwater discharge)		
Non-point Source (Non-PS) discharges (urban runoff, farm drainage)		
Flow diversions or unnatural inflows		
Dams (reservoirs, detention basins, recharge basins)		
Flow obstructions (culverts, paved stream crossings)		
Weir/drop structure, tide gates		
Dredged inlet/channel		
Engineered channel (riprap, armored channel bank, bed)		
Dike/levees	X	
Groundwater extraction		
Ditches (borrow, agricultural drainage, mosquito control, etc.)		
Actively managed hydrology		
Comments		
Hwy 43 "levee" within 50m but does not negatively impact AA hydrology.		

PHYSICAL STRUCTURE ATTRIBUTE (WITHIN 50 M OF AA)	Present	Present and likely to have significant negative effect on AA
Filling or dumping of sediment or soils (N/A for restoration areas)		
Grading/ compaction (N/A for restoration areas)		
Plowing/Discing (N/A for restoration areas)		
Resource extraction (sediment, gravel, oil and/or gas)		
Vegetation management		
Excessive sediment or organic debris from watershed		
Excessive runoff from watershed		
Nutrient impaired (PS or Non-PS pollution)		
Heavy metal impaired (PS or Non-PS pollution)		
Pesticides or trace organics impaired (PS or Non-PS pollution)		
Bacteria and pathogens impaired (PS or Non-PS pollution)		
Trash or refuse		
Comments		

BIOTIC STRUCTURE ATTRIBUTE (WITHIN 50 M OF AA)	Present	Present and Likely to Have Significant negative effect on AA
Mowing, grazing, excessive herbivory (within AA)		
Excessive human visitation		
Predation and habitat destruction by non-native vertebrates (e.g., <i>Virginia opossum</i> and domestic predators, such as feral pets)		
Tree cutting/sapling removal		
Removal of woody debris		
Treatment of non-native and nuisance plant species		
Pesticide application or vector control		
Biological resource extraction or stocking (fisheries, aquaculture)		
Excessive organic debris in matrix (for vernal pools)		
Lack of vegetation management to conserve natural resources		
Lack of treatment of invasive plants adjacent to AA or buffer		
Comments		

BUFFER AND LANDSCAPE CONTEXT ATTRIBUTE (WITHIN 500 M OF AA)	Present	Present and likely to have significant negative effect on AA
Urban residential		
Industrial/commercial		
Military training/Air traffic		
Dams (or other major flow regulation or disruption)		
Dryland farming		
Intensive row-crop agriculture		
Orchards/nurseries	X	
Commercial feedlots		
Dairies		
Ranching (enclosed livestock grazing or horse paddock or feedlot)		
Transportation corridor	X	
Rangeland (livestock rangeland also managed for native vegetation)		
Sports fields and urban parklands (golf courses, soccer fields, etc.)		
Passive recreation (bird-watching, hiking, etc.)		
Active recreation (off-road vehicles, mountain biking, hunting, fishing)		
Physical resource extraction (rock, sediment, oil/gas)		
Biological resource extraction (aquaculture, commercial fisheries)		
Comments		
Within 500 m of orchard and HWY 43 and BNSF RR.		

Basic Information: Individual Vernal Pool

CRAM Site ID: APN: 333-030-006					
Project Site ID: Fresno to Bakersfield HST					
Assessment Area Name: V114					
Project Name: Fresno to Bakersfield HST		Date (m/d/y)	9	22	11
Assessment Team Members for This AA					
J. Love		C. Julian			
A. Langston		C. Roberts			
Wetland Category:					
<input checked="" type="checkbox"/> Natural <input type="checkbox"/> Constructed <input type="checkbox"/> Restoration (Rehabilitation OR Enhancement)					
If Created or Restored, does the action encompass:					
<input type="checkbox"/> entire wetland <input type="checkbox"/> portion of the wetland					
What best describes the hydrologic state of the wetland at the time of assessment?					
<input type="checkbox"/> ponded/inundated <input type="checkbox"/> saturated soil, but no surface water <input checked="" type="checkbox"/> dry					
What is the apparent hydrologic regime of the wetland?					
<input type="checkbox"/> long-duration <input type="checkbox"/> medium-duration <input checked="" type="checkbox"/> short-duration					
Does the vernal pool system connect with the floodplain of a nearby stream?					
<input type="checkbox"/> yes <input checked="" type="checkbox"/> no					
Photo Identification Numbers and Description:					
	Photo ID No.	Description	Latitude	Longitude	Datum
1	1220	North			
2	1222	South			
3	1121	East			
4	1123	West			
5					
6					
Comments:					
*April 2012: updated using new Individual VP Module (V. 6.0). CRAM score based on old VP module V. 5.0.3 = 76.5 New CRAM score = 79.9					

Scoring Sheet: Individual Vernal Pools

AA Name: V114			(m/d/y)	09/22/2011
Attributes and Metrics		Alpha.	Numeric	Comments
Buffer and Landscape Context				
(A) Aquatic Area Connectivity		A	12	Avg=28.8%
(B): Percent of AA with Buffer	Alpha.	Numeric		100% with buffer
	A	12		
(C): Average Buffer Width	B	9		
(D): Buffer Condition	B	9		
Initial Attribute Score = $A + [D \times (B \times C)^{1/2}]^{1/2}$			21.7	Final Attribute Score = (Initial Score/24) x 100
				90.3
Hydrology				
Water Source		A	12	
Hydroperiod		B	9	
Hydrologic Connectivity		B	9	
Initial Attribute Score			30	Final Attribute Score = (Initial Score/36) x 100
				83.3
Physical Structure				
Structural Patch Richness		D	3	2 patch types
Topographic Complexity		A	12	
Initial Attribute Score			15	Final Attribute Score = (Initial Score/24) x 100
				62.5
Biotic Structure				
Horizontal Interspersion and Zonation		A	12	
Community composition submetric	Alpha.	Numeric		5 co-dominant spp.
A: Number of Co-dominants	B	9		
Community composition submetric	A	12		
B: Percent Non-native				
Community Composition submetric	D	3		0 endemic spp.
C: Endemic Species Richness				
Plant Community Composition Metric (numeric average of submetrics A-C)			8	
Initial Attribute Score			20	Final Attribute Score = (Initial Score/24) x 100
				83.3
Overall AA Score (Average of Final Attribute Scores)				79.9

Worksheet 8: Stressor Checklist.

HYDROLOGY ATTRIBUTE (WITHIN 50 M OF AA)	Present	Present and likely to have significant negative effect on AA
Point Source (PS) discharges (POTW, other non-stormwater discharge)		
Non-point Source (Non-PS) discharges (urban runoff, farm drainage)		
Flow diversions or unnatural inflows		
Dams (reservoirs, detention basins, recharge basins)		
Flow obstructions (culverts, paved stream crossings)		
Weir/drop structure, tide gates		
Dredged inlet/channel		
Engineered channel (riprap, armored channel bank, bed)		
Dike/levees	X	
Groundwater extraction		
Ditches (borrow, agricultural drainage, mosquito control, etc.)		
Actively managed hydrology		
Comments		
Road berm for SR43.		

PHYSICAL STRUCTURE ATTRIBUTE (WITHIN 50 M OF AA)	Present	Present and likely to have significant negative effect on AA
Filling or dumping of sediment or soils (N/A for restoration areas)		
Grading/ compaction (N/A for restoration areas)	X	
Plowing/Discing (N/A for restoration areas)		
Resource extraction (sediment, gravel, oil and/or gas)		
Vegetation management		
Excessive sediment or organic debris from watershed		
Excessive runoff from watershed		
Nutrient impaired (PS or Non-PS pollution)		
Heavy metal impaired (PS or Non-PS pollution)		
Pesticides or trace organics impaired (PS or Non-PS pollution)		
Bacteria and pathogens impaired (PS or Non-PS pollution)		
Trash or refuse		
Comments		
Road berm for SR43.		

BIOTIC STRUCTURE ATTRIBUTE (WITHIN 50 M OF AA)	Present	Present and Likely to Have Significant negative effect on AA
Mowing, grazing, excessive herbivory (within AA)		
Excessive human visitation		
Predation and habitat destruction by non-native vertebrates (e.g., <i>Virginia opossum</i> and domestic predators, such as feral pets)		
Tree cutting/sapling removal		
Removal of woody debris		
Treatment of non-native and nuisance plant species		
Pesticide application or vector control		
Biological resource extraction or stocking (fisheries, aquaculture)		
Excessive organic debris in matrix (for vernal pools)		
Lack of vegetation management to conserve natural resources		
Lack of treatment of invasive plants adjacent to AA or buffer		
Comments		

BUFFER AND LANDSCAPE CONTEXT ATTRIBUTE (WITHIN 500 M OF AA)	Present	Present and likely to have significant negative effect on AA
Urban residential		
Industrial/commercial		
Military training/Air traffic		
Dams (or other major flow regulation or disruption)		
Dryland farming		
Intensive row-crop agriculture		
Orchards/nurseries		
Commercial feedlots		
Dairies		
Ranching (enclosed livestock grazing or horse paddock or feedlot)		
Transportation corridor	X	
Rangeland (livestock rangeland also managed for native vegetation)		
Sports fields and urban parklands (golf courses, soccer fields, etc.)		
Passive recreation (bird-watching, hiking, etc.)		
Active recreation (off-road vehicles, mountain biking, hunting, fishing)		
Physical resource extraction (rock, sediment, oil/gas)		
Biological resource extraction (aquaculture, commercial fisheries)		
Comments		
SR43 and BNSF corridor (less than 5 meters west of AA)		

Basic Information: Individual Vernal Pool

CRAM Site ID: APN: 333-030-006						
Project Site ID: Fresno to Bakersfield HST						
Assessment Area Name: V115A						
Project Name: Fresno to Bakersfield HST			Date (m/d/y)	9	27	11
Assessment Team Members for This AA						
G. Peracca						
A. Langston						
C. Roberts						
Wetland Category:						
<input checked="" type="checkbox"/> Natural <input type="checkbox"/> Constructed <input type="checkbox"/> Restoration (Rehabilitation OR Enhancement)						
If Created or Restored, does the action encompass:						
<input type="checkbox"/> entire wetland <input type="checkbox"/> portion of the wetland						
What best describes the hydrologic state of the wetland at the time of assessment?						
<input type="checkbox"/> ponded/inundated <input type="checkbox"/> saturated soil, but no surface water <input checked="" type="checkbox"/> dry						
What is the apparent hydrologic regime of the wetland?						
<input type="checkbox"/> long-duration <input type="checkbox"/> medium-duration <input checked="" type="checkbox"/> short-duration						
Does the vernal pool system connect with the floodplain of a nearby stream?						
<input type="checkbox"/> yes <input checked="" type="checkbox"/> no						
Photo Identification Numbers and Description:						
	Photo ID No.	Description	Latitude	Longitude	Datum	
1	1254	North	35.80273	-119.35871		
2	1257	outh				
3	1155	East				
4	1156	West				
5						
6						
Comments:						
*April 2012: updated using new Individual VP Module (V. 6.0). CRAM score based on old VP module V. 5.0.3 = 80.0 New CRAM score = 80.9						

Scoring Sheet: Individual Vernal Pools

AA Name: V115A			(m/d/y)	09/27/2011	
Attributes and Metrics		Alpha.	Numeric	Comments	
Buffer and Landscape Context					
(A) Aquatic Area Connectivity		A	12	Avg=51%	
(B): Percent of AA with Buffer	Alpha.	Numeric		100% with buffer	
	A	12			
(C): Average Buffer Width	B	9		Avg=186.9m	
	B	9			
(D): Buffer Condition	B	9			
Initial Attribute Score = $A + [D \times (B \times C)^{1/2}]^{1/2}$			21.7	Final Attribute Score = (Initial Score/24) x 100	90.3
Hydrology					
Water Source		A	12		
Hydroperiod		A	12		
Hydrologic Connectivity		A	12		
Initial Attribute Score			36	Final Attribute Score = (Initial Score/36) x 100	100
Physical Structure					
Structural Patch Richness		D	3	2 patch types	
Topographic Complexity		A	12		
Initial Attribute Score			15	Final Attribute Score = (Initial Score/24) x 100	62.5
Biotic Structure					
Horizontal Interspersion and Zonation		B	9		
Community composition submetric	Alpha.	Numeric		5 co-dominant spp.	
A: Number of Co-dominants	B	9			
Community composition submetric	A	12		20% non-native spp.	
B: Percent Non-native	A	12			
Community Composition submetric	D	3	0 endemic spp.		
C: Endemic Species Richness		D	3		
Plant Community Composition Metric (numeric average of submetrics A-C)			8		
Initial Attribute Score			17	Final Attribute Score = (Initial Score/24) x 100	70.8
Overall AA Score (Average of Final Attribute Scores)				80.9	

Worksheet 8: Stressor Checklist.

HYDROLOGY ATTRIBUTE (WITHIN 50 M OF AA)	Present	Present and likely to have significant negative effect on AA
Point Source (PS) discharges (POTW, other non-stormwater discharge)		
Non-point Source (Non-PS) discharges (urban runoff, farm drainage)		
Flow diversions or unnatural inflows		
Dams (reservoirs, detention basins, recharge basins)		
Flow obstructions (culverts, paved stream crossings)		
Weir/drop structure, tide gates		
Dredged inlet/channel		
Engineered channel (riprap, armored channel bank, bed)		
Dike/levees	X	
Groundwater extraction		
Ditches (borrow, agricultural drainage, mosquito control, etc.)		
Actively managed hydrology		
Comments		
SR43 is about 50 meters away.		

PHYSICAL STRUCTURE ATTRIBUTE (WITHIN 50 M OF AA)	Present	Present and likely to have significant negative effect on AA
Filling or dumping of sediment or soils (N/A for restoration areas)		
Grading/ compaction (N/A for restoration areas)		
Plowing/Discing (N/A for restoration areas)		
Resource extraction (sediment, gravel, oil and/or gas)		
Vegetation management		
Excessive sediment or organic debris from watershed		
Excessive runoff from watershed		
Nutrient impaired (PS or Non-PS pollution)		
Heavy metal impaired (PS or Non-PS pollution)		
Pesticides or trace organics impaired (PS or Non-PS pollution)		
Bacteria and pathogens impaired (PS or Non-PS pollution)		
Trash or refuse		
Comments		

BIOTIC STRUCTURE ATTRIBUTE (WITHIN 50 M OF AA)	Present	Present and Likely to Have Significant negative effect on AA
Mowing, grazing, excessive herbivory (within AA)		
Excessive human visitation		
Predation and habitat destruction by non-native vertebrates (e.g., <i>Virginia opossum</i> and domestic predators, such as feral pets)		
Tree cutting/sapling removal		
Removal of woody debris		
Treatment of non-native and nuisance plant species		
Pesticide application or vector control		
Biological resource extraction or stocking (fisheries, aquaculture)		
Excessive organic debris in matrix (for vernal pools)		
Lack of vegetation management to conserve natural resources		
Lack of treatment of invasive plants adjacent to AA or buffer		
Comments		

BUFFER AND LANDSCAPE CONTEXT ATTRIBUTE (WITHIN 500 M OF AA)	Present	Present and likely to have significant negative effect on AA
Urban residential		
Industrial/commercial		
Military training/Air traffic		
Dams (or other major flow regulation or disruption)		
Dryland farming		
Intensive row-crop agriculture		
Orchards/nurseries		
Commercial feedlots		
Dairies		
Ranching (enclosed livestock grazing or horse paddock or feedlot)		
Transportation corridor	X	
Rangeland (livestock rangeland also managed for native vegetation)		
Sports fields and urban parklands (golf courses, soccer fields, etc.)		
Passive recreation (bird-watching, hiking, etc.)		
Active recreation (off-road vehicles, mountain biking, hunting, fishing)		
Physical resource extraction (rock, sediment, oil/gas)		
Biological resource extraction (aquaculture, commercial fisheries)		
Comments		
SR43 and BNSF corridor about 50 meters away.		

Basic Information: Vernal Pool Systems

CRAM Site ID: APN: 333-020-005					
Project Site ID: Fresno to Bakersfield HST					
Assessment Area Name: VS97A					
Project Name: Fresno to Bakersfield HST		Date (m/d/y)	9	26	11
Assessment Team Members for This AA					
J. Whitfield		G. Peracca			
C. Roberts		A. Langston			
Wetland Category:					
<input checked="" type="checkbox"/> Natural <input type="checkbox"/> Constructed <input type="checkbox"/> Restoration (Rehabilitation OR Enhancement)					
If Created or Restored, does the action encompass:					
<input type="checkbox"/> entire wetland <input type="checkbox"/> portion of the wetland					
What best describes the hydrologic state of the wetland at the time of assessment?					
<input type="checkbox"/> ponded/inundated <input type="checkbox"/> saturated soil, but no surface water <input checked="" type="checkbox"/> dry					
What is the apparent hydrologic regime of the wetland?					
<input type="checkbox"/> long-duration <input type="checkbox"/> medium-duration <input checked="" type="checkbox"/> short-duration					
Does the vernal pool system connect with the floodplain of a nearby stream?					
<input type="checkbox"/> yes <input checked="" type="checkbox"/> no					
Photo Identification Numbers and Description:					
	Photo ID No.	Description	Latitude	Longitude	Datum
1	1232	North			
2	1234	South			
3	1233	East			
4	1235	West			
5					
6					
Comments:					
*April 2012: updated using new Individual VP Module (V. 6.0).					
CRAM score based on old VP module V. 5.0.3 = 68.5					
New CRAM score = 76.7					

Scoring Sheet: Vernal Pool Systems

AA Name: VS97A				(m/d/y)	09/26/2011	
Attributes and Metrics			Alpha.	Numeric	Comments/Scores	
Buffer and Landscape Context						
(A) Aquatic Area Connectivity			B	9	Avg=15%	
(B): Percent of AA with Buffer	Alpha.	Numeric				
	A	12				100% with buffer
(C): Average Buffer Width	B	9				Avg=151.9m
(D): Buffer Condition	B	9				
Initial Attribute Score = $A + [D \times (B \times C)^{1/2}]^{1/2}$				18.7	Final Attribute Score = (Initial Score/24) x 100	77.8
Hydrology						
Water Source			A	12		
Hydroperiod			B	9		
Hydrologic Connectivity			B	9		
Initial Attribute Score				30	Final Attribute Score = (Initial Score/36) x 100	83.3
Physical Structure						
Structural Patch Richness			B	9	8 patch types	
Pool and Swale Density			A	12	Avg=60%	
Topographic Complexity			C	6		
Initial Attribute Score				27	Final Attribute Score = (Initial Score/36) x 100	75
Biotic Structure						
Plant Community submetric A: Number of Co-dominant species	Alpha.	Numeric				
	B	9				4 co-dominant spp.
Plant Community submetric B: Percent Non Native	A	12				14.3% non-native spp.
	D	3				0 endemic spp.
Plant Community Metric (average of submetrics A-C)				8		
Horizontal Interspersion and Zonation			B	9		
Initial Attribute Score				17	Final Attribute Score = (Initial Score/24) x 100	70.8
Overall AA Score (Average of Final Attribute Scores)					76.7	

Worksheet 9: Stressor Checklist.

HYDROLOGY ATTRIBUTE (WITHIN 50 M OF AA)	Present	Present and likely to have significant negative effect on AA
Point Source (PS) discharges (POTW, other non-stormwater discharge)		
Non-point Source (Non-PS) discharges (urban runoff, farm drainage)		
Flow diversions or unnatural inflows		
Dams (reservoirs, detention basins, recharge basins)		
Flow obstructions (culverts, paved stream crossings)		
Weir/drop structure, tide gates		
Dredged inlet/channel		
Engineered channel (riprap, armored channel bank, bed)		
Dike/levees	X	
Groundwater extraction		
Ditches (borrow, agricultural drainage, mosquito control, etc.)		
Actively managed hydrology		
Comments		
Railroad berm.		

PHYSICAL STRUCTURE ATTRIBUTE (WITHIN 50 M OF AA)	Present	Present and likely to have significant negative effect on AA
Filling or dumping of sediment or soils (N/A for restoration areas)	X	
Grading/ compaction (N/A for restoration areas)		
Plowing/Discing (N/A for restoration areas)		
Resource extraction (sediment, gravel, oil and/or gas)		
Vegetation management		
Excessive sediment or organic debris from watershed		
Excessive runoff from watershed		
Nutrient impaired (PS or Non-PS pollution)		
Heavy metal impaired (PS or Non-PS pollution)		
Pesticides or trace organics impaired (PS or Non-PS pollution)		
Bacteria and pathogens impaired (PS or Non-PS pollution)		
Trash or refuse		
Comments		

BIOTIC STRUCTURE ATTRIBUTE (WITHIN 50 M OF AA)	Present	Present and Likely to Have Significant negative effect on AA
Mowing, grazing, excessive herbivory (within AA)		
Excessive human visitation		
Predation and habitat destruction by non-native vertebrates (e.g., <i>Virginia opossum</i> and domestic predators, such as feral pets)		
Tree cutting/sapling removal		
Removal of woody debris		
Treatment of non-native and nuisance plant species		
Pesticide application or vector control		
Biological resource extraction or stocking (fisheries, aquaculture)		
Excessive organic debris in matrix (for vernal pools)		
Lack of vegetation management to conserve natural resources		
Lack of treatment of invasive plants adjacent to AA or buffer		
Comments		

BUFFER AND LANDSCAPE CONTEXT ATTRIBUTE (WITHIN 500 M OF AA)	Present	Present and likely to have significant negative effect on AA
Urban residential		
Industrial/commercial		
Military training/Air traffic		
Dams (or other major flow regulation or disruption)		
Dryland farming		
Intensive row-crop agriculture		
Orchards/nurseries	X	
Commercial feedlots		
Dairies		
Ranching (enclosed livestock grazing or horse paddock or feedlot)		
Transportation corridor	X	X
Rangeland (livestock rangeland also managed for native vegetation)		
Sports fields and urban parklands (golf courses, soccer fields, etc.)		
Passive recreation (bird-watching, hiking, etc.)		
Active recreation (off-road vehicles, mountain biking, hunting, fishing)		
Physical resource extraction (rock, sediment, oil/gas)		
Biological resource extraction (aquaculture, commercial fisheries)		
Comments		
BNSF railroad corridor.		

Basic Information: Vernal Pool Systems

CRAM Site ID: APN: 333-020-005						
Project Site ID: Fresno to Bakersfield HST						
Assessment Area Name: VS99A						
Project Name: Fresno to Bakersfield HST			Date (m/d/y)	9	26	11
Assessment Team Members for This AA						
J. Whitfield		G. Peracca				
C. Roberts		A. Langston				
Wetland Category:						
<input checked="" type="checkbox"/> Natural <input type="checkbox"/> Constructed <input type="checkbox"/> Restoration (Rehabilitation OR Enhancement)						
If Created or Restored, does the action encompass:						
<input type="checkbox"/> entire wetland <input type="checkbox"/> portion of the wetland						
What best describes the hydrologic state of the wetland at the time of assessment?						
<input type="checkbox"/> ponded/inundated <input type="checkbox"/> saturated soil, but no surface water <input checked="" type="checkbox"/> dry						
What is the apparent hydrologic regime of the wetland?						
<input type="checkbox"/> long-duration <input type="checkbox"/> medium-duration <input checked="" type="checkbox"/> short-duration						
Does the vernal pool system connect with the floodplain of a nearby stream?						
<input type="checkbox"/> yes <input checked="" type="checkbox"/> no						
Photo Identification Numbers and Description:						
	Photo ID No.	Description	Latitude	Longitude	Datum	
1	1236	North	35.00945	-119.36341		
2	1238	outh				
3	1237	East				
4	1239	West				
5						
6						
Comments:						
*April 2012: updated using new Individual VP Module (V. 6.0).						
CRAM score based on old VP module V. 5.0.3 = 77.5						
New CRAM score = 82.7						

Scoring Sheet: Vernal Pool Systems

AA Name: VS99A				(m/d/y)	09/26/2011	
Attributes and Metrics			Alpha.	Numeric	Comments/Scores	
Buffer and Landscape Context						
(A) Aquatic Area Connectivity			A	12	Avg=33.8%	
(B): Percent of AA with Buffer	Alpha.	Numeric				
	A	12				100% with buffer
(C): Average Buffer Width	A	12				Avg=191.9m
(D): Buffer Condition	B	9				
Initial Attribute Score = $A + [D \times (B \times C)^{1/2}]^{1/2}$				22.4	Final Attribute Score = (Initial Score/24) x 100	93.3
Hydrology						
Water Source			A	12		
Hydroperiod			A	12		
Hydrologic Connectivity			B	9		
Initial Attribute Score				33	Final Attribute Score = (Initial Score/36) x 100	91.7
Physical Structure						
Structural Patch Richness			B	9	9 patch types	
Pool and Swale Density			A	12	Avg=58.8%	
Topographic Complexity			C	6		
Initial Attribute Score				27	Final Attribute Score = (Initial Score/36) x 100	75
Biotic Structure						
Plant Community submetric A: Number of Co-dominant species	Alpha.	Numeric				
	B	9				5 co-dominant spp.
Plant Community submetric B: Percent Non Native	A	12				14.3% non-native spp.
Plant Community submetric C: Endemic Species Richness	D	3				0 endemic spp.
Plant Community Metric (average of submetrics A-C)				8		
Horizontal Interspersion and Zonation			B	9		
Initial Attribute Score				17	Final Attribute Score = (Initial Score/24) x 100	70.8
Overall AA Score (Average of Final Attribute Scores)					82.7	

Worksheet 9: Stressor Checklist.

HYDROLOGY ATTRIBUTE (WITHIN 50 M OF AA)	Present	Present and likely to have significant negative effect on AA
Point Source (PS) discharges (POTW, other non-stormwater discharge)		
Non-point Source (Non-PS) discharges (urban runoff, farm drainage)		
Flow diversions or unnatural inflows		
Dams (reservoirs, detention basins, recharge basins)		
Flow obstructions (culverts, paved stream crossings)		
Weir/drop structure, tide gates		
Dredged inlet/channel		
Engineered channel (riprap, armored channel bank, bed)		
Dike/levees		
Groundwater extraction		
Ditches (borrow, agricultural drainage, mosquito control, etc.)		
Actively managed hydrology		
Comments		
Dike levee 60 meters away.		

PHYSICAL STRUCTURE ATTRIBUTE (WITHIN 50 M OF AA)	Present	Present and likely to have significant negative effect on AA
Filling or dumping of sediment or soils (N/A for restoration areas)		
Grading/ compaction (N/A for restoration areas)		
Plowing/Discing (N/A for restoration areas)		
Resource extraction (sediment, gravel, oil and/or gas)		
Vegetation management		
Excessive sediment or organic debris from watershed		
Excessive runoff from watershed		
Nutrient impaired (PS or Non-PS pollution)		
Heavy metal impaired (PS or Non-PS pollution)		
Pesticides or trace organics impaired (PS or Non-PS pollution)		
Bacteria and pathogens impaired (PS or Non-PS pollution)		
Trash or refuse		
Comments		

BIOTIC STRUCTURE ATTRIBUTE (WITHIN 50 M OF AA)	Present	Present and Likely to Have Significant negative effect on AA
Mowing, grazing, excessive herbivory (within AA)		
Excessive human visitation		
Predation and habitat destruction by non-native vertebrates (e.g., <i>Virginia opossum</i> and domestic predators, such as feral pets)		
Tree cutting/sapling removal		
Removal of woody debris		
Treatment of non-native and nuisance plant species		
Pesticide application or vector control		
Biological resource extraction or stocking (fisheries, aquaculture)		
Excessive organic debris in matrix (for vernal pools)		
Lack of vegetation management to conserve natural resources		
Lack of treatment of invasive plants adjacent to AA or buffer		
Comments		

BUFFER AND LANDSCAPE CONTEXT ATTRIBUTE (WITHIN 500 M OF AA)	Present	Present and likely to have significant negative effect on AA
Urban residential		
Industrial/commercial		
Military training/Air traffic		
Dams (or other major flow regulation or disruption)		
Dryland farming		
Intensive row-crop agriculture		
Orchards/nurseries	X	
Commercial feedlots		
Dairies		
Ranching (enclosed livestock grazing or horse paddock or feedlot)		
Transportation corridor	X	
Rangeland (livestock rangeland also managed for native vegetation)		
Sports fields and urban parklands (golf courses, soccer fields, etc.)		
Passive recreation (bird-watching, hiking, etc.)		
Active recreation (off-road vehicles, mountain biking, hunting, fishing)		
Physical resource extraction (rock, sediment, oil/gas)		
Biological resource extraction (aquaculture, commercial fisheries)		
Comments		

Basic Information: Vernal Pool Systems

CRAM Site ID: APN: 333-020-005						
Project Site ID: Fresno to Bakersfield HST						
Assessment Area Name: VS104A						
Project Name: Fresno to Bakersfield HST			Date (m/d/y)	9	27	11
Assessment Team Members for This AA						
A. Langston		G. Peracca				
C. Roberts						
Wetland Category:						
<input checked="" type="checkbox"/> Natural <input type="checkbox"/> Constructed <input type="checkbox"/> Restoration (Rehabilitation OR Enhancement)						
If Created or Restored, does the action encompass:						
<input type="checkbox"/> entire wetland <input type="checkbox"/> portion of the wetland						
What best describes the hydrologic state of the wetland at the time of assessment?						
<input type="checkbox"/> ponded/inundated <input type="checkbox"/> saturated soil, but no surface water <input checked="" type="checkbox"/> dry						
What is the apparent hydrologic regime of the wetland?						
<input type="checkbox"/> long-duration <input type="checkbox"/> medium-duration <input checked="" type="checkbox"/> short-duration						
Does the vernal pool system connect with the floodplain of a nearby stream?						
<input type="checkbox"/> yes <input checked="" type="checkbox"/> no						
Photo Identification Numbers and Description:						
	Photo ID No.	Description	Latitude	Longitude	Datum	
1	1260	North	35.80731	-119.36221		
2	1262, 63	South				
3	1261	East				
4	1264	West				
5						
6						
Comments:						
*April 2012: updated using new Individual VP Module (V. 6.0).						
CRAM score based on old VP module V. 5.0.3 = 67.5						
New CRAM score = 77.8						

Scoring Sheet: Vernal Pool Systems

AA Name: VS104A				(m/d/y)	09/27/2011	
Attributes and Metrics			Alpha.	Numeric	Comments/Scores	
Buffer and Landscape Context						
(A) Aquatic Area Connectivity			B	9	Avg=15%	
(B): Percent of AA with Buffer	Alpha.	Numeric				
	A	12				100% with buffer
(C): Average Buffer Width	B	9				Avg=186.9m
(D): Buffer Condition	B	9				
Initial Attribute Score = $A + [D \times (B \times C)^{1/2}]^{1/2}$				18.7	Final Attribute Score = (Initial Score/24) x 100	77.8
Hydrology						
Water Source			A	12		
Hydroperiod			A	12		
Hydrologic Connectivity			A	12		
Initial Attribute Score				36	Final Attribute Score = (Initial Score/36) x 100	100
Physical Structure						
Structural Patch Richness			B	9	9 patch types	
Pool and Swale Density			A	12	Avg=46.3%	
Topographic Complexity			C	6		
Initial Attribute Score				27	Final Attribute Score = (Initial Score/36) x 100	75
Biotic Structure						
Plant Community submetric A: Number of Co-dominant species	Alpha.	Numeric				
	C	6				3 co-dominant spp.
Plant Community submetric B: Percent Non Native	C	6				42.9% non-native spp.
Plant Community submetric C: Endemic Species Richness	D	3				0 endemic spp.
Plant Community Metric (average of submetrics A-C)				5		
Horizontal Interspersion and Zonation			B	9		
Initial Attribute Score				14	Final Attribute Score = (Initial Score/24) x 100	58.3
Overall AA Score (Average of Final Attribute Scores)					77.8	

Worksheet 9: Stressor Checklist.

HYDROLOGY ATTRIBUTE (WITHIN 50 M OF AA)	Present	Present and likely to have significant negative effect on AA
Point Source (PS) discharges (POTW, other non-stormwater discharge)		
Non-point Source (Non-PS) discharges (urban runoff, farm drainage)		
Flow diversions or unnatural inflows		
Dams (reservoirs, detention basins, recharge basins)		
Flow obstructions (culverts, paved stream crossings)		
Weir/drop structure, tide gates		
Dredged inlet/channel		
Engineered channel (riprap, armored channel bank, bed)		
Dike/levees	X	
Groundwater extraction		
Ditches (borrow, agricultural drainage, mosquito control, etc.)		
Actively managed hydrology		
Comments		
SR43 is within 50 meters of AA but does not provide much influence on AA hydrology.		

PHYSICAL STRUCTURE ATTRIBUTE (WITHIN 50 M OF AA)	Present	Present and likely to have significant negative effect on AA
Filling or dumping of sediment or soils (N/A for restoration areas)		
Grading/ compaction (N/A for restoration areas)		
Plowing/Discing (N/A for restoration areas)		
Resource extraction (sediment, gravel, oil and/or gas)		
Vegetation management		
Excessive sediment or organic debris from watershed		
Excessive runoff from watershed		
Nutrient impaired (PS or Non-PS pollution)		
Heavy metal impaired (PS or Non-PS pollution)		
Pesticides or trace organics impaired (PS or Non-PS pollution)		
Bacteria and pathogens impaired (PS or Non-PS pollution)		
Trash or refuse		
Comments		

BIOTIC STRUCTURE ATTRIBUTE (WITHIN 50 M OF AA)	Present	Present and Likely to Have Significant negative effect on AA
Mowing, grazing, excessive herbivory (within AA)		
Excessive human visitation		
Predation and habitat destruction by non-native vertebrates (e.g., <i>Virginia opossum</i> and domestic predators, such as feral pets)		
Tree cutting/sapling removal		
Removal of woody debris		
Treatment of non-native and nuisance plant species		
Pesticide application or vector control		
Biological resource extraction or stocking (fisheries, aquaculture)		
Excessive organic debris in matrix (for vernal pools)		
Lack of vegetation management to conserve natural resources		
Lack of treatment of invasive plants adjacent to AA or buffer		
Comments		

BUFFER AND LANDSCAPE CONTEXT ATTRIBUTE (WITHIN 500 M OF AA)	Present	Present and likely to have significant negative effect on AA
Urban residential		
Industrial/commercial		
Military training/Air traffic		
Dams (or other major flow regulation or disruption)		
Dryland farming		
Intensive row-crop agriculture		
Orchards/nurseries	X	
Commercial feedlots		
Dairies		
Ranching (enclosed livestock grazing or horse paddock or feedlot)		
Transportation corridor	X	
Rangeland (livestock rangeland also managed for native vegetation)		
Sports fields and urban parklands (golf courses, soccer fields, etc.)		
Passive recreation (bird-watching, hiking, etc.)		
Active recreation (off-road vehicles, mountain biking, hunting, fishing)		
Physical resource extraction (rock, sediment, oil/gas)		
Biological resource extraction (aquaculture, commercial fisheries)		
Comments		
AA within 500 meters of orchard (to the west)		
AA within 500 meters of SR43/BNSF RR		

Basic Information: Vernal Pool Systems

CRAM Site ID: APN: 333-020-005						
Project Site ID: Fresno to Bakersfield HST						
Assessment Area Name: VS107A						
Project Name: Fresno to Bakersfield HST			Date (m/d/y)	9	22	11
Assessment Team Members for This AA						
A. Langston		J. Love				
C. Roberts		C. Julian				
Wetland Category:						
<input checked="" type="checkbox"/> Natural <input type="checkbox"/> Constructed <input type="checkbox"/> Restoration (Rehabilitation OR Enhancement)						
If Created or Restored, does the action encompass:						
<input type="checkbox"/> entire wetland <input type="checkbox"/> portion of the wetland						
What best describes the hydrologic state of the wetland at the time of assessment?						
<input type="checkbox"/> ponded/inundated <input type="checkbox"/> saturated soil, but no surface water <input checked="" type="checkbox"/> dry						
What is the apparent hydrologic regime of the wetland?						
<input type="checkbox"/> long-duration <input type="checkbox"/> medium-duration <input checked="" type="checkbox"/> short-duration						
Does the vernal pool system connect with the floodplain of a nearby stream?						
<input type="checkbox"/> yes <input checked="" type="checkbox"/> no						
Photo Identification Numbers and Description:						
	Photo ID No.	Description	Latitude	Longitude	Datum	
1	1224	North	35.80561	-119.36192		
2	1226	South				
3	1225	East				
4	1227	West				
5						
6						
Comments:						
*April 2012: updated using new Individual VP Module (V. 6.0).						
CRAM score based on old VP module V. 5.0.3 = 74.5						
New CRAM score = 80.6						

Scoring Sheet: Vernal Pool Systems

AA Name: VS107A				(m/d/y)	09/22/2011	
Attributes and Metrics			Alpha.	Numeric	Comments/Scores	
Buffer and Landscape Context						
(A) Aquatic Area Connectivity			B	9	Avg=13.8%	
(B): Percent of AA with Buffer	Alpha.	Numeric				
	A	12				100% with buffer
(C): Average Buffer Width	A	12				Avg=200.8m
(D): Buffer Condition	B	9				
Initial Attribute Score = $A + [D \times (B \times C)^{1/2}]^{1/2}$				19.4	Final Attribute Score = (Initial Score/24) x 100	80.8
Hydrology						
Water Source			A	12		
Hydroperiod			A	12		
Hydrologic Connectivity			A	12		
Initial Attribute Score				36	Final Attribute Score = (Initial Score/36) x 100	100
Physical Structure						
Structural Patch Richness			B	9	10 patch types	
Pool and Swale Density			B	9	Avg=30%	
Topographic Complexity			B	9		
Initial Attribute Score				27	Final Attribute Score = (Initial Score/36) x 100	75
Biotic Structure						
Plant Community submetric A: Number of Co-dominant species	Alpha.	Numeric				
	B	9				4 co-dominant spp.
Plant Community submetric B: Percent Non Native	B	9				25% non-native spp.
Plant Community submetric C: Endemic Species Richness	D	3				0 endemic spp.
Plant Community Metric (average of submetrics A-C)				7		
Horizontal Interspersion and Zonation			B	9		
Initial Attribute Score				16	Final Attribute Score = (Initial Score/24) x 100	66.7
Overall AA Score (Average of Final Attribute Scores)					80.6	

Worksheet 9: Stressor Checklist.

HYDROLOGY ATTRIBUTE (WITHIN 50 M OF AA)	Present	Present and likely to have significant negative effect on AA
Point Source (PS) discharges (POTW, other non-stormwater discharge)		
Non-point Source (Non-PS) discharges (urban runoff, farm drainage)		
Flow diversions or unnatural inflows		
Dams (reservoirs, detention basins, recharge basins)		
Flow obstructions (culverts, paved stream crossings)		
Weir/drop structure, tide gates		
Dredged inlet/channel		
Engineered channel (riprap, armored channel bank, bed)		
Dike/levees		
Groundwater extraction		
Ditches (borrow, agricultural drainage, mosquito control, etc.)		
Actively managed hydrology		
Comments		

PHYSICAL STRUCTURE ATTRIBUTE (WITHIN 50 M OF AA)	Present	Present and likely to have significant negative effect on AA
Filling or dumping of sediment or soils (N/A for restoration areas)		
Grading/ compaction (N/A for restoration areas)		
Plowing/Discing (N/A for restoration areas)		
Resource extraction (sediment, gravel, oil and/or gas)		
Vegetation management		
Excessive sediment or organic debris from watershed		
Excessive runoff from watershed		
Nutrient impaired (PS or Non-PS pollution)		
Heavy metal impaired (PS or Non-PS pollution)		
Pesticides or trace organics impaired (PS or Non-PS pollution)		
Bacteria and pathogens impaired (PS or Non-PS pollution)		
Trash or refuse		
Comments		

BIOTIC STRUCTURE ATTRIBUTE (WITHIN 50 M OF AA)	Present	Present and Likely to Have Significant negative effect on AA
Mowing, grazing, excessive herbivory (within AA)		
Excessive human visitation		
Predation and habitat destruction by non-native vertebrates (e.g., <i>Virginia opossum</i> and domestic predators, such as feral pets)		
Tree cutting/sapling removal		
Removal of woody debris		
Treatment of non-native and nuisance plant species		
Pesticide application or vector control		
Biological resource extraction or stocking (fisheries, aquaculture)		
Excessive organic debris in matrix (for vernal pools)		
Lack of vegetation management to conserve natural resources		
Lack of treatment of invasive plants adjacent to AA or buffer		
Comments		

BUFFER AND LANDSCAPE CONTEXT ATTRIBUTE (WITHIN 500 M OF AA)	Present	Present and likely to have significant negative effect on AA
Urban residential		
Industrial/commercial		
Military training/Air traffic		
Dams (or other major flow regulation or disruption)		
Dryland farming		
Intensive row-crop agriculture		
Orchards/nurseries	X	
Commercial feedlots		
Dairies		
Ranching (enclosed livestock grazing or horse paddock or feedlot)		
Transportation corridor	X	
Rangeland (livestock rangeland also managed for native vegetation)		
Sports fields and urban parklands (golf courses, soccer fields, etc.)		
Passive recreation (bird-watching, hiking, etc.)		
Active recreation (off-road vehicles, mountain biking, hunting, fishing)		
Physical resource extraction (rock, sediment, oil/gas)		
Biological resource extraction (aquaculture, commercial fisheries)		
Comments		
Orchard approximately 450 meters to the east.		

Basic Information: Vernal Pool Systems

CRAM Site ID: APN: 333-030-006					
Project Site ID: Fresno to Bakersfield HST					
Assessment Area Name: VS112					
Project Name: Fresno to Bakersfield HST		Date (m/d/y)	9	22	11
Assessment Team Members for This AA					
A. Langston		J. Love			
C. Roberts		C. Julian			
Wetland Category:					
<input checked="" type="checkbox"/> Natural <input type="checkbox"/> Constructed <input type="checkbox"/> Restoration (Rehabilitation OR Enhancement)					
If Created or Restored, does the action encompass:					
<input type="checkbox"/> entire wetland <input type="checkbox"/> portion of the wetland					
What best describes the hydrologic state of the wetland at the time of assessment?					
<input type="checkbox"/> ponded/inundated <input type="checkbox"/> saturated soil, but no surface water <input checked="" type="checkbox"/> dry					
What is the apparent hydrologic regime of the wetland?					
<input type="checkbox"/> long-duration <input type="checkbox"/> medium-duration <input checked="" type="checkbox"/> short-duration					
Does the vernal pool system connect with the floodplain of a nearby stream?					
<input type="checkbox"/> yes <input checked="" type="checkbox"/> no					
Photo Identification Numbers and Description:					
	Photo ID No.	Description	Latitude	Longitude	Datum
1	1209, 16	North			
2	1211, 18	South			
3	1210, 17	East			
4	1212, 19	West			
5					
6					
Comments:					
*April 2012: updated using new Individual VP Module (V. 6.0).					
CRAM score based on old VP module V. 5.0.3 = 71.5					
New CRAM score = 76.7					

Scoring Sheet: Vernal Pool Systems

AA Name: VS112				(m/d/y)	09/22/2011	
Attributes and Metrics			Alpha.	Numeric	Comments/Scores	
Buffer and Landscape Context						
(A) Aquatic Area Connectivity			B	9	Avg=14.8%	
(B): Percent of AA with Buffer	Alpha.	Numeric				
	A	12				98% with buffer
(C): Average Buffer Width	B	9				Avg=145m
(D): Buffer Condition	B	9				
Initial Attribute Score = $A + [D \times (B \times C)^{1/2}]^{1/2}$				18.7	Final Attribute Score = (Initial Score/24) x 100	77.8
Hydrology						
Water Source			B	9		
Hydroperiod			B	9		
Hydrologic Connectivity			B	9		
Initial Attribute Score				27	Final Attribute Score = (Initial Score/36) x 100	75
Physical Structure						
Structural Patch Richness			B	9	9 patch types	
Pool and Swale Density			A	12	Avg=56.3%	
Topographic Complexity			B	9		
Initial Attribute Score				30	Final Attribute Score = (Initial Score/36) x 100	83.3
Biotic Structure						
Plant Community submetric A: Number of Co-dominant species	Alpha.	Numeric				
	B	9				4 co-dominant spp.
Plant Community submetric B: Percent Non Native	A	12				9% non-native spp.
Plant Community submetric C: Endemic Species Richness	D	3				0 endemic spp.
Plant Community Metric (average of submetrics A-C)				8		
Horizontal Interspersion and Zonation			B	9		
Initial Attribute Score				17	Final Attribute Score = (Initial Score/24) x 100	70.8
Overall AA Score (Average of Final Attribute Scores)					76.7	

Worksheet 9: Stressor Checklist.

HYDROLOGY ATTRIBUTE (WITHIN 50 M OF AA)	Present	Present and likely to have significant negative effect on AA
Point Source (PS) discharges (POTW, other non-stormwater discharge)		
Non-point Source (Non-PS) discharges (urban runoff, farm drainage)		
Flow diversions or unnatural inflows		
Dams (reservoirs, detention basins, recharge basins)		
Flow obstructions (culverts, paved stream crossings)		
Weir/drop structure, tide gates		
Dredged inlet/channel		
Engineered channel (riprap, armored channel bank, bed)		
Dike/levees	X	
Groundwater extraction		
Ditches (borrow, agricultural drainage, mosquito control, etc.)		
Actively managed hydrology		
Comments		
Road berm for SR43.		

PHYSICAL STRUCTURE ATTRIBUTE (WITHIN 50 M OF AA)	Present	Present and likely to have significant negative effect on AA
Filling or dumping of sediment or soils (N/A for restoration areas)		
Grading/ compaction (N/A for restoration areas)	X	
Plowing/Discing (N/A for restoration areas)		
Resource extraction (sediment, gravel, oil and/or gas)		
Vegetation management		
Excessive sediment or organic debris from watershed		
Excessive runoff from watershed		
Nutrient impaired (PS or Non-PS pollution)		
Heavy metal impaired (PS or Non-PS pollution)		
Pesticides or trace organics impaired (PS or Non-PS pollution)		
Bacteria and pathogens impaired (PS or Non-PS pollution)		
Trash or refuse		
Comments		
Road berm for SR43.		

BIOTIC STRUCTURE ATTRIBUTE (WITHIN 50 M OF AA)	Present	Present and Likely to Have Significant negative effect on AA
Mowing, grazing, excessive herbivory (within AA)		
Excessive human visitation		
Predation and habitat destruction by non-native vertebrates (e.g., <i>Virginia opossum</i> and domestic predators, such as feral pets)		
Tree cutting/sapling removal		
Removal of woody debris		
Treatment of non-native and nuisance plant species		
Pesticide application or vector control		
Biological resource extraction or stocking (fisheries, aquaculture)		
Excessive organic debris in matrix (for vernal pools)		
Lack of vegetation management to conserve natural resources		
Lack of treatment of invasive plants adjacent to AA or buffer		
Comments		

BUFFER AND LANDSCAPE CONTEXT ATTRIBUTE (WITHIN 500 M OF AA)	Present	Present and likely to have significant negative effect on AA
Urban residential		
Industrial/commercial		
Military training/Air traffic		
Dams (or other major flow regulation or disruption)		
Dryland farming		
Intensive row-crop agriculture		
Orchards/nurseries		
Commercial feedlots		
Dairies		
Ranching (enclosed livestock grazing or horse paddock or feedlot)		
Transportation corridor	X	
Rangeland (livestock rangeland also managed for native vegetation)		
Sports fields and urban parklands (golf courses, soccer fields, etc.)		
Passive recreation (bird-watching, hiking, etc.)		
Active recreation (off-road vehicles, mountain biking, hunting, fishing)		
Physical resource extraction (rock, sediment, oil/gas)		
Biological resource extraction (aquaculture, commercial fisheries)		
Comments		
SR43 and BNSF corridor are less than 50 meters west of AA.		

Basic Information: Vernal Pool Systems

CRAM Site ID: APN: 333-030-006					
Project Site ID: Fresno to Bakersfield HST					
Assessment Area Name: VS114A					
Project Name: Fresno to Bakersfield HST		Date (m/d/y)	9	27	11
Assessment Team Members for This AA					
A. Langston		G. Peracca			
C. Roberts					
Wetland Category:					
<input checked="" type="checkbox"/> Natural <input type="checkbox"/> Constructed <input type="checkbox"/> Restoration (Rehabilitation OR Enhancement)					
If Created or Restored, does the action encompass:					
<input type="checkbox"/> entire wetland <input type="checkbox"/> portion of the wetland					
What best describes the hydrologic state of the wetland at the time of assessment?					
<input type="checkbox"/> ponded/inundated <input type="checkbox"/> saturated soil, but no surface water <input checked="" type="checkbox"/> dry					
What is the apparent hydrologic regime of the wetland?					
<input type="checkbox"/> long-duration <input type="checkbox"/> medium-duration <input checked="" type="checkbox"/> short-duration					
Does the vernal pool system connect with the floodplain of a nearby stream?					
<input type="checkbox"/> yes <input checked="" type="checkbox"/> no					
Photo Identification Numbers and Description:					
	Photo ID No.	Description	Latitude	Longitude	Datum
1	1248	North			
2	1250	South			
3	1249	East			
4	1251	West			
5					
6					
Comments:					
*April 2012: updated using new Individual VP Module (V. 6.0).					
CRAM score based on old VP module V. 5.0.3 = 74.7					
New CRAM score = 80.9					

Scoring Sheet: Vernal Pool Systems

AA Name: VS114A				(m/d/y)	09/27/2011	
Attributes and Metrics			Alpha.	Numeric	Comments/Scores	
Buffer and Landscape Context						
(A) Aquatic Area Connectivity			A	12	Avg=34.8%	
(B): Percent of AA with Buffer	Alpha.	Numeric				
	A	12				100% with buffer
(C): Average Buffer Width	B	9				Avg=184.4m
(D): Buffer Condition	B	9				
Initial Attribute Score = $A + [D \times (B \times C)^{1/2}]^{1/2}$				21.7	Final Attribute Score = (Initial Score/24) x 100	90.3
Hydrology						
Water Source			A	12		
Hydroperiod			A	12		
Hydrologic Connectivity			A	12		
Initial Attribute Score				36	Final Attribute Score = (Initial Score/36) x 100	100
Physical Structure						
Structural Patch Richness			B	9	9 patch types	
Pool and Swale Density			B	9	Avg=30%	
Topographic Complexity			C	6		
Initial Attribute Score				24	Final Attribute Score = (Initial Score/36) x 100	66.7
Biotic Structure						
Plant Community submetric A: Number of Co-dominant species	Alpha.	Numeric				
	B	9				4 co-dominant spp.
Plant Community submetric B: Percent Non Native	B	9				25% non-native spp.
Plant Community submetric C: Endemic Species Richness	D	3				0 endemic spp.
Plant Community Metric (average of submetrics A-C)				7		
Horizontal Interspersion and Zonation			B	9		
Initial Attribute Score				16	Final Attribute Score = (Initial Score/24) x 100	66.7
Overall AA Score (Average of Final Attribute Scores)					80.9	

Worksheet 9: Stressor Checklist.

HYDROLOGY ATTRIBUTE (WITHIN 50 M OF AA)	Present	Present and likely to have significant negative effect on AA
Point Source (PS) discharges (POTW, other non-stormwater discharge)		
Non-point Source (Non-PS) discharges (urban runoff, farm drainage)		
Flow diversions or unnatural inflows		
Dams (reservoirs, detention basins, recharge basins)		
Flow obstructions (culverts, paved stream crossings)		
Weir/drop structure, tide gates		
Dredged inlet/channel		
Engineered channel (riprap, armored channel bank, bed)		
Dike/levees	X	
Groundwater extraction		
Ditches (borrow, agricultural drainage, mosquito control, etc.)		
Actively managed hydrology		
Comments		
SR43 is approximately 80 meters away.		

PHYSICAL STRUCTURE ATTRIBUTE (WITHIN 50 M OF AA)	Present	Present and likely to have significant negative effect on AA
Filling or dumping of sediment or soils (N/A for restoration areas)		
Grading/ compaction (N/A for restoration areas)		
Plowing/Discing (N/A for restoration areas)		
Resource extraction (sediment, gravel, oil and/or gas)		
Vegetation management		
Excessive sediment or organic debris from watershed		
Excessive runoff from watershed		
Nutrient impaired (PS or Non-PS pollution)		
Heavy metal impaired (PS or Non-PS pollution)		
Pesticides or trace organics impaired (PS or Non-PS pollution)		
Bacteria and pathogens impaired (PS or Non-PS pollution)		
Trash or refuse		
Comments		

BIOTIC STRUCTURE ATTRIBUTE (WITHIN 50 M OF AA)	Present	Present and Likely to Have Significant negative effect on AA
Mowing, grazing, excessive herbivory (within AA)		
Excessive human visitation		
Predation and habitat destruction by non-native vertebrates (e.g., <i>Virginia opossum</i> and domestic predators, such as feral pets)		
Tree cutting/sapling removal		
Removal of woody debris		
Treatment of non-native and nuisance plant species		
Pesticide application or vector control		
Biological resource extraction or stocking (fisheries, aquaculture)		
Excessive organic debris in matrix (for vernal pools)		
Lack of vegetation management to conserve natural resources		
Lack of treatment of invasive plants adjacent to AA or buffer		
Comments		

BUFFER AND LANDSCAPE CONTEXT ATTRIBUTE (WITHIN 500 M OF AA)	Present	Present and likely to have significant negative effect on AA
Urban residential		
Industrial/commercial		
Military training/Air traffic		
Dams (or other major flow regulation or disruption)		
Dryland farming		
Intensive row-crop agriculture		
Orchards/nurseries		
Commercial feedlots		
Dairies		
Ranching (enclosed livestock grazing or horse paddock or feedlot)		
Transportation corridor	X	
Rangeland (livestock rangeland also managed for native vegetation)		
Sports fields and urban parklands (golf courses, soccer fields, etc.)		
Passive recreation (bird-watching, hiking, etc.)		
Active recreation (off-road vehicles, mountain biking, hunting, fishing)		
Physical resource extraction (rock, sediment, oil/gas)		
Biological resource extraction (aquaculture, commercial fisheries)		
Comments		
SR43 and BNSF corridor are approximately 80 meters away.		

Basic Information Sheet: Perennial Depressional Wetlands

Your Name: A. Langston					
Assessment Area Name: D304					
Assessment No.		Date (mm/dd/yyyy): 05/16/2012			
Assessment Team Members for This AA					
G. Peracca					
A.Langston					
E. Maroni					
AA Category:					
<input type="checkbox"/> Restoration		<input type="checkbox"/> Mitigation		<input type="checkbox"/> Impacted	
				<input checked="" type="checkbox"/> Other	
Which best describes the type of depressional wetland?					
<input checked="" type="checkbox"/> freshwater marsh		<input type="checkbox"/> alkaline marsh		<input type="checkbox"/> alkali flat	
				<input type="checkbox"/> other (specify):	
Which best describes the hydrologic state of the wetland at the time of assessment?					
<input type="checkbox"/> ponded/inundated		<input type="checkbox"/> saturated soil, but no surface water		<input checked="" type="checkbox"/> dry	
What is the apparent hydrologic regime of the wetland?					
<p>Long-duration depressional wetlands are defined as supporting surface water for > 9 months of the year (in > 5 out of 10 years.) Medium-duration depressional wetlands are defined as supporting surface water for between 4 and 9 months of the year. Short-duration wetlands possess surface water between 2 weeks and 4 months of the year.</p>					
<input type="checkbox"/> long-duration		<input type="checkbox"/> medium-duration		<input checked="" type="checkbox"/> short-duration	
Does your wetland connect with the floodplain of a nearby stream? <input type="checkbox"/> yes <input checked="" type="checkbox"/> no					
This wetland is located in a historic braided stream channel that no longer functions as a flow-throw system due to an impenetrable berm downstream. Water now appears to pond in these channels					
Is the topographic basin of the wetland <input checked="" type="checkbox"/> distinct or <input type="checkbox"/> indistinct ?					
<p>An indistinct, such as vernal pool complexes and large wet meadows, which may be intricately interspersed with uplands or seemingly homogeneous over very large areas, topographic basin is one that lacks obvious boundaries between wetland and upland. Examples of such features are seasonal, depressional wetlands in very low-gradient landscapes.</p>					
Photo Identification Numbers and Description:					
	Photo ID No.	Description	Latitude	Longitude	Datum
1	5660	North			
2	5658	South			
3	5661	East			
4	5659	West			

Scoring Sheet: Perennial Depressional Wetlands

AA Name: D304		Date: 05/16/2012			
Attributes and Metrics		Scores		Comments	
Buffer and Landscape Context					
Landscape Connectivity (D)		9		Avg=68.8%	
<i>Buffer submetric A: Percent of AA with Buffer</i>	12			100% with buffer	
<i>Buffer submetric B: Average Buffer Width</i>	12			Avg= 244 meters	
<i>Buffer submetric C: Buffer Condition</i>	9				
D + [C x (A x B)^{1/2}]^{1/2} = Attribute Score		Raw 19.4	Final 80.8	Final Attribute Score = (Raw Score/24)100	80.8
Hydrology					
Water Source		9			
Hydroperiod or Channel Stability		9			
Hydrologic Connectivity		12			
Attribute Score83.3		Raw 30	Final 83.3	Final Attribute Score = (Raw Score/36)100	83.3
Physical Structure					
Structural Patch Richness		3		2 Patches	
Topographic Complexity		9			
Attribute Score		Raw 12	Final 50	Final Attribute Score = (Raw Score/24)100	50
Biotic Structure					
<i>Plant Community submetric A: Number of Plant Layers</i>	6			2 Layers	
<i>Plant Community submetric B: Number of Co-dominant species</i>	3			3 co-dominant spp.	
<i>Plant Community submetric C: Percent Invasion</i>	12			0% non-native spp.	
Plant Community Metric (average of submetrics A-C)		7			
Horizontal Interspersion and Zonation		6			
Vertical Biotic Structure		12			
Attribute Score		Raw 25	Final 69.4	Final Attribute Score = (Raw Score/36)100	69.4
Overall AA Score (Average of Final Attribute Scores)				70.9	

Stressor Checklist Worksheet

HYDROLOGY ATTRIBUTE (WITHIN 50 M OF AA)	Present and likely to have negative effect on AA	Significant negative effect on AA
Point Source (PS) discharges (POTW, other non-stormwater discharge)		
Non-point Source (Non-PS) discharges (urban runoff, farm drainage)		
Flow diversions or unnatural inflows		
Dams (reservoirs, detention basins, recharge basins)		
Flow obstructions (culverts, paved stream crossings)		
Weir/drop structure, tide gates		
Dredged inlet/channel		
Engineered channel (riprap, armored channel bank, bed)		
Dike/levees	X	
Groundwater extraction		
Ditches (borrow, agricultural drainage, mosquito control, etc.)		
Actively managed hydrology		
Comments		

PHYSICAL STRUCTURE ATTRIBUTE (WITHIN 50 M OF AA)	Present and likely to have negative effect on AA	Significant negative effect on AA
Filling or dumping of sediment or soils (N/A for restoration areas)		
Grading/ compaction (N/A for restoration areas)		
Plowing/Discing (N/A for restoration areas)		
Resource extraction (sediment, gravel, oil and/or gas)		
Vegetation management		
Excessive sediment or organic debris from watershed		
Excessive runoff from watershed		
Nutrient impaired (PS or Non-PS pollution)		
Heavy metal impaired (PS or Non-PS pollution)		
Pesticides or trace organics impaired (PS or Non-PS pollution)		
Bacteria and pathogens impaired (PS or Non-PS pollution)		
Trash or refuse		
Comments		

BIOTIC STRUCTURE ATTRIBUTE (WITHIN 50 M OF AA)	Present and likely to have negative effect on AA	Significant negative effect on AA
Mowing, grazing, excessive herbivory (within AA)		
Excessive human visitation		
Predation and habitat destruction by non-native vertebrates (e.g., <i>Virginia opossum</i> and domestic predators, such as feral pets)		
Tree cutting/sapling removal		
Removal of woody debris		
Treatment of non-native and nuisance plant species		
Pesticide application or vector control		
Biological resource extraction or stocking (fisheries, aquaculture)		
Excessive organic debris in matrix (for vernal pools)		
Lack of vegetation management to conserve natural resources		
Lack of treatment of invasive plants adjacent to AA or buffer		
Comments		

BUFFER AND LANDSCAPE CONTEXT ATTRIBUTE (WITHIN 500 M OF AA)	Present and likely to have negative effect on AA	Significant negative effect on AA
Urban residential		
Industrial/commercial		
Military training/Air traffic		
Dams (or other major flow regulation or disruption)		
Dryland farming		
Intensive row-crop agriculture	X	
Orchards/nurseries		
Commercial feedlots		
Dairies		
Ranching (enclosed livestock grazing or horse paddock or feedlot)		
Transportation corridor		
Rangeland (livestock rangeland also managed for native vegetation)		
Sports fields and urban parklands (golf courses, soccer fields, etc.)		
Passive recreation (bird-watching, hiking, etc.)		
Active recreation (off-road vehicles, mountain biking, hunting, fishing)	X	
Physical resource extraction (rock, sediment, oil/gas)		
Biological resource extraction (aquaculture, commercial fisheries)		
Comments		
Off-road vehicle tracks, shotgun shells, refuse set up for shooting practice all litter the property		

Basic Information Sheet: Perennial Depressional Wetlands

Your Name: A. Langston					
Assessment Area Name: Buena Vista Dairy D304					
Assessment No.		Date (mm/dd/yyyy): 05/16/2012			
Assessment Team Members for This AA					
G. Peracca					
A.Langston					
E. Maroni					
AA Category:					
<input type="checkbox"/> Restoration <input type="checkbox"/> Mitigation <input type="checkbox"/> Impacted <input checked="" type="checkbox"/> Other					
Which best describes the type of depressional wetland?					
<input checked="" type="checkbox"/> freshwater marsh <input type="checkbox"/> alkaline marsh <input type="checkbox"/> alkali flat <input type="checkbox"/> other (specify):					
Which best describes the hydrologic state of the wetland at the time of assessment?					
<input type="checkbox"/> ponded/inundated <input type="checkbox"/> saturated soil, but no surface water <input checked="" type="checkbox"/> dry					
What is the apparent hydrologic regime of the wetland?					
<p>Long-duration depressional wetlands are defined as supporting surface water for > 9 months of the year (in > 5 out of 10 years.) Medium-duration depressional wetlands are defined as supporting surface water for between 4 and 9 months of the year. Short-duration wetlands possess surface water between 2 weeks and 4 months of the year.</p>					
<input type="checkbox"/> long-duration <input type="checkbox"/> medium-duration <input checked="" type="checkbox"/> short-duration					
Does your wetland connect with the floodplain of a nearby stream? <input type="checkbox"/> yes <input checked="" type="checkbox"/> no					
<p>This wetland is located in a historic braided stream channel that no longer functions as a flow-throw system due to an impenetrable berm downstream. Water now appears to pond in these channels</p>					
Is the topographic basin of the wetland <input checked="" type="checkbox"/> distinct or <input type="checkbox"/> indistinct ?					
<p>An indistinct, such as vernal pool complexes and large wet meadows, which may be intricately interspersed with uplands or seemingly homogeneous over very large areas, topographic basin is one that lacks obvious boundaries between wetland and upland. Examples of such features are seasonal, depressional wetlands in very low-gradient landscapes.</p>					
Photo Identification Numbers and Description:					
	Photo ID No.	Description	Latitude	Longitude	Datum
1	5660	North			
2	5658	South			
3	5661	East			
4	5659	West			

Scoring Sheet: Perennial Depressional Wetlands

AA Name: Buena Vista Dairy D304		Date: 05/16/2012			
Attributes and Metrics		Scores		Comments	
Buffer and Landscape Context					
Landscape Connectivity (D)		9		Avg=68.8%	
<i>Buffer submetric A: Percent of AA with Buffer</i>	12			100% with buffer	
<i>Buffer submetric B: Average Buffer Width</i>	12			Avg= 244 meters	
<i>Buffer submetric C: Buffer Condition</i>	9				
$D + [C \times (A \times B)^{1/2}]^{1/2} = \text{Attribute Score}$		Raw 19.4	Final 80.8	Final Attribute Score = (Raw Score/24)100	80.8
Hydrology					
Water Source		9			
Hydroperiod or Channel Stability		9			
Hydrologic Connectivity		12			
Attribute Score 83.3		Raw 30	Final 83.3	Final Attribute Score = (Raw Score/36)100	83.3
Physical Structure					
Structural Patch Richness		3		2 Patches	
Topographic Complexity		9			
Attribute Score		Raw 12	Final 50	Final Attribute Score = (Raw Score/24)100	50
Biotic Structure					
<i>Plant Community submetric A: Number of Plant Layers</i>	6			2 Layers	
<i>Plant Community submetric B: Number of Co-dominant species</i>	3			3 co-dominant spp.	
<i>Plant Community submetric C: Percent Invasion</i>	12			0% non-native spp.	
Plant Community Metric (average of submetrics A-C)		7			
Horizontal Interspersion and Zonation		6			
Vertical Biotic Structure		12			
Attribute Score		Raw 25	Final 69.4	Final Attribute Score = (Raw Score/36)100	69.4
Overall AA Score (Average of Final Attribute Scores)				70.9	

Stressor Checklist Worksheet

HYDROLOGY ATTRIBUTE (WITHIN 50 M OF AA)	Present and likely to have negative effect on AA	Significant negative effect on AA
Point Source (PS) discharges (POTW, other non-stormwater discharge)		
Non-point Source (Non-PS) discharges (urban runoff, farm drainage)		
Flow diversions or unnatural inflows		
Dams (reservoirs, detention basins, recharge basins)		
Flow obstructions (culverts, paved stream crossings)		
Weir/drop structure, tide gates		
Dredged inlet/channel		
Engineered channel (riprap, armored channel bank, bed)		
Dike/levees	X	
Groundwater extraction		
Ditches (borrow, agricultural drainage, mosquito control, etc.)		
Actively managed hydrology		
Comments		

PHYSICAL STRUCTURE ATTRIBUTE (WITHIN 50 M OF AA)	Present and likely to have negative effect on AA	Significant negative effect on AA
Filling or dumping of sediment or soils (N/A for restoration areas)		
Grading/ compaction (N/A for restoration areas)		
Plowing/Discing (N/A for restoration areas)		
Resource extraction (sediment, gravel, oil and/or gas)		
Vegetation management		
Excessive sediment or organic debris from watershed		
Excessive runoff from watershed		
Nutrient impaired (PS or Non-PS pollution)		
Heavy metal impaired (PS or Non-PS pollution)		
Pesticides or trace organics impaired (PS or Non-PS pollution)		
Bacteria and pathogens impaired (PS or Non-PS pollution)		
Trash or refuse		
Comments		

BIOTIC STRUCTURE ATTRIBUTE (WITHIN 50 M OF AA)	Present and likely to have negative effect on AA	Significant negative effect on AA
Mowing, grazing, excessive herbivory (within AA)		
Excessive human visitation		
Predation and habitat destruction by non-native vertebrates (e.g., <i>Virginia opossum</i> and domestic predators, such as feral pets)		
Tree cutting/sapling removal		
Removal of woody debris		
Treatment of non-native and nuisance plant species		
Pesticide application or vector control		
Biological resource extraction or stocking (fisheries, aquaculture)		
Excessive organic debris in matrix (for vernal pools)		
Lack of vegetation management to conserve natural resources		
Lack of treatment of invasive plants adjacent to AA or buffer		
Comments		

BUFFER AND LANDSCAPE CONTEXT ATTRIBUTE (WITHIN 500 M OF AA)	Present and likely to have negative effect on AA	Significant negative effect on AA
Urban residential		
Industrial/commercial		
Military training/Air traffic		
Dams (or other major flow regulation or disruption)		
Dryland farming		
Intensive row-crop agriculture	X	
Orchards/nurseries		
Commercial feedlots		
Dairies		
Ranching (enclosed livestock grazing or horse paddock or feedlot)		
Transportation corridor		
Rangeland (livestock rangeland also managed for native vegetation)		
Sports fields and urban parklands (golf courses, soccer fields, etc.)		
Passive recreation (bird-watching, hiking, etc.)		
Active recreation (off-road vehicles, mountain biking, hunting, fishing)	X	
Physical resource extraction (rock, sediment, oil/gas)		
Biological resource extraction (aquaculture, commercial fisheries)		
Comments		
Off-road vehicle tracks, shotgun shells, refuse set up for shooting practice all litter the property		

Basic Information Sheet: Perennial Depressional Wetlands

Your Name: A. Langston					
Assessment Area Name: Buena Vista Dairy D305					
Assessment No.		Date (mm/dd/yyyy): 05/16/2012			
Assessment Team Members for This AA					
G. Peracca					
A.Langston					
E. Maroni					
AA Category:					
<input type="checkbox"/> Restoration <input type="checkbox"/> Mitigation <input type="checkbox"/> Impacted <input checked="" type="checkbox"/> Other					
Which best describes the type of depressional wetland?					
<input checked="" type="checkbox"/> freshwater marsh <input type="checkbox"/> alkaline marsh <input type="checkbox"/> alkali flat <input type="checkbox"/> other (specify):					
Which best describes the hydrologic state of the wetland at the time of assessment?					
<input type="checkbox"/> ponded/inundated <input type="checkbox"/> saturated soil, but no surface water <input checked="" type="checkbox"/> dry					
What is the apparent hydrologic regime of the wetland?					
<p>Long-duration depressional wetlands are defined as supporting surface water for > 9 months of the year (in > 5 out of 10 years.) Medium-duration depressional wetlands are defined as supporting surface water for between 4 and 9 months of the year. Short-duration wetlands possess surface water between 2 weeks and 4 months of the year.</p>					
<input type="checkbox"/> long-duration <input type="checkbox"/> medium-duration <input checked="" type="checkbox"/> short-duration					
Does your wetland connect with the floodplain of a nearby stream? <input type="checkbox"/> yes <input checked="" type="checkbox"/> no					
Is the topographic basin of the wetland <input checked="" type="checkbox"/> distinct or <input type="checkbox"/> indistinct ?					
<p>An indistinct, such as vernal pool complexes and large wet meadows, which may be intricately interspersed with uplands or seemingly homogeneous over very large areas, topographic basin is one that lacks obvious boundaries between wetland and upland. Examples of such features are seasonal, depressional wetlands in very low-gradient landscapes.</p>					
Photo Identification Numbers and Description:					
	Photo ID No.	Description	Latitude	Longitude	Datum
1	1253	North			
2	1251	South			
3	1252	East			
4	1250	West			

Scoring Sheet: Perennial Depressional Wetlands

AA Name: Buena Vista Dairy D305			Date: 05/16/2012		
Attributes and Metrics		Scores		Comments	
Buffer and Landscape Context					
Landscape Connectivity (D)		12		Avg=87.5%	
<i>Buffer submetric A:</i> <i>Percent of AA with Buffer</i>	12			100% with buffer	
<i>Buffer submetric B:</i> <i>Average Buffer Width</i>	12			Avg= 250 meters	
<i>Buffer submetric C:</i> <i>Buffer Condition</i>	9				
$D + [C \times (A \times B)^{1/2}]^{1/2} = \text{Attribute Score}$		Raw	Final	Final Attribute Score =	
		22.4	93.3	(Raw Score/24)100	93.3
Hydrology					
Water Source		9			
Hydroperiod or Channel Stability		9			
Hydrologic Connectivity		12			
Attribute Score 83.3		Raw	Final	Final Attribute Score =	
		30	83.3	(Raw Score/36)100	83.3
Physical Structure					
Structural Patch Richness		3		3 patch types	
Topographic Complexity		9			
Attribute Score		Raw	Final	Final Attribute Score =	
		12	50	(Raw Score/24)100	50
Biotic Structure					
<i>Plant Community submetric A:</i> <i>Number of Plant Layers</i>	6			1 Layers	
<i>Plant Community submetric B:</i> <i>Number of Co-dominant species</i>	3			3 co-dominant spp.	
<i>Plant Community submetric C:</i> <i>Percent Invasion</i>	6			33% non-native spp.	
Plant Community Metric <i>(average of submetrics A-C)</i>		5			
Horizontal Interspersion and Zonation		6			
Vertical Biotic Structure		9			
Attribute Score		Raw	Final	Final Attribute Score =	
		20	55.6	(Raw Score/36)100	55.6
Overall AA Score (Average of Final Attribute Scores)				70.5	

Stressor Checklist Worksheet

HYDROLOGY ATTRIBUTE (WITHIN 50 M OF AA)	Present and likely to have negative effect on AA	Significant negative effect on AA
Point Source (PS) discharges (POTW, other non-stormwater discharge)		
Non-point Source (Non-PS) discharges (urban runoff, farm drainage)		
Flow diversions or unnatural inflows		
Dams (reservoirs, detention basins, recharge basins)		
Flow obstructions (culverts, paved stream crossings)		
Weir/drop structure, tide gates		
Dredged inlet/channel		
Engineered channel (riprap, armored channel bank, bed)		
Dike/levees	X	
Groundwater extraction		
Ditches (borrow, agricultural drainage, mosquito control, etc.)		
Actively managed hydrology		
Comments		

PHYSICAL STRUCTURE ATTRIBUTE (WITHIN 50 M OF AA)	Present and likely to have negative effect on AA	Significant negative effect on AA
Filling or dumping of sediment or soils (N/A for restoration areas)		
Grading/ compaction (N/A for restoration areas)		
Plowing/Discing (N/A for restoration areas)		
Resource extraction (sediment, gravel, oil and/or gas)		
Vegetation management		
Excessive sediment or organic debris from watershed		
Excessive runoff from watershed		
Nutrient impaired (PS or Non-PS pollution)		
Heavy metal impaired (PS or Non-PS pollution)		
Pesticides or trace organics impaired (PS or Non-PS pollution)		
Bacteria and pathogens impaired (PS or Non-PS pollution)		
Trash or refuse		
Comments		

BIOTIC STRUCTURE ATTRIBUTE (WITHIN 50 M OF AA)	Present and likely to have negative effect on AA	Significant negative effect on AA
Mowing, grazing, excessive herbivory (within AA)		
Excessive human visitation		
Predation and habitat destruction by non-native vertebrates (e.g., <i>Virginia opossum</i> and domestic predators, such as feral pets)		
Tree cutting/sapling removal		
Removal of woody debris		
Treatment of non-native and nuisance plant species		
Pesticide application or vector control		
Biological resource extraction or stocking (fisheries, aquaculture)		
Excessive organic debris in matrix (for vernal pools)		
Lack of vegetation management to conserve natural resources		
Lack of treatment of invasive plants adjacent to AA or buffer		
Comments		

BUFFER AND LANDSCAPE CONTEXT ATTRIBUTE (WITHIN 500 M OF AA)	Present and likely to have negative effect on AA	Significant negative effect on AA
Urban residential		
Industrial/commercial		
Military training/Air traffic		
Dams (or other major flow regulation or disruption)		
Dryland farming		
Intensive row-crop agriculture	X	
Orchards/nurseries		
Commercial feedlots		
Dairies		
Ranching (enclosed livestock grazing or horse paddock or feedlot)		
Transportation corridor		
Rangeland (livestock rangeland also managed for native vegetation)		
Sports fields and urban parklands (golf courses, soccer fields, etc.)		
Passive recreation (bird-watching, hiking, etc.)		
Active recreation (off-road vehicles, mountain biking, hunting, fishing)	X	
Physical resource extraction (rock, sediment, oil/gas)		
Biological resource extraction (aquaculture, commercial fisheries)		
Comments		
Off-road vehicle tracks, shotgun shells, refuse set up for shooting practice all litter the property		

Basic Information: Individual Vernal Pool

CRAM Site ID: Buena Vista Dairy					
Project Site ID: Fresno to Bakersfield HST CMP					
Assessment Area Name: V305					
Project Name: Fresno to Bakersfield HST		Date (m/d/y)	5	16	12
Assessment Team Members for This AA					
G. Peracca					
A.Langston					
E. Maroni					
Wetland Category:					
<input checked="" type="checkbox"/> Natural <input type="checkbox"/> Constructed <input type="checkbox"/> Restoration (Rehabilitation OR Enhancement)					
If Created or Restored, does the action encompass:					
<input type="checkbox"/> entire wetland <input type="checkbox"/> portion of the wetland					
What best describes the hydrologic state of the wetland at the time of assessment?					
<input type="checkbox"/> ponded/inundated <input type="checkbox"/> saturated soil, but no surface water <input checked="" type="checkbox"/> dry					
What is the apparent hydrologic regime of the wetland?					
<input type="checkbox"/> long-duration <input type="checkbox"/> medium-duration <input checked="" type="checkbox"/> short-duration					
Does the vernal pool system connect with the floodplain of a nearby stream?					
<input type="checkbox"/> yes <input checked="" type="checkbox"/> no					
Photo Identification Numbers and Description:					
	Photo ID No.	Description	Latitude	Longitude	Datum
1	1259	North			
2	1258	South			
3	1265	East			
4	1264	West			
5					
6					
Comments:					

Scoring Sheet: Individual Vernal Pools

AA Name: V305			(m/d/y)	05/16/2012
Attributes and Metrics		Alpha.	Numeric	Comments
Buffer and Landscape Context				
(A) Aquatic Area Connectivity		A	12	Avg=68%
(B): Percent of AA with Buffer	Alpha.	Numeric		
	A	12		100% with buffer
(C): Average Buffer Width	A	12		Avg=236 meters
(D): Buffer Condition	B	9		
Initial Attribute Score = $A + [D \times (B \times C)^{1/2}]^{1/2}$			22.4	Final Attribute Score = (Initial Score/24) x 100
				93.3
Hydrology				
Water Source		B	9	
Hydroperiod		A	12	
Hydrologic Connectivity		A	12	
Initial Attribute Score			33	Final Attribute Score = (Initial Score/36) x 100
				91.7
Physical Structure				
Structural Patch Richness		C	6	4 patch types
Topographic Complexity		B	9	
Initial Attribute Score			15	Final Attribute Score = (Initial Score/24) x 100
				62.5
Biotic Structure				
Horizontal Interspersion and Zonation		C	6	
Community composition submetric A: Number of Co-dominants	Alpha.	Numeric		
	B	9		4 co-dominant spp.
Community composition submetric B: Percent Non-native	B	9		25% non-native spp.
Community Composition submetric C: Endemic Species Richness	D	3		0 endemic spp.
Plant Community Composition Metric (numeric average of submetrics A-C)			7	
Initial Attribute Score			13	Final Attribute Score = (Initial Score/24) x 100
				54.2
Overall AA Score (Average of Final Attribute Scores)				75.4

Worksheet 8: Stressor Checklist.

HYDROLOGY ATTRIBUTE (WITHIN 50 M OF AA)	Present	Present and likely to have significant negative effect on AA
Point Source (PS) discharges (POTW, other non-stormwater discharge)		
Non-point Source (Non-PS) discharges (urban runoff, farm drainage)		
Flow diversions or unnatural inflows		
Dams (reservoirs, detention basins, recharge basins)		
Flow obstructions (culverts, paved stream crossings)		
Weir/drop structure, tide gates		
Dredged inlet/channel		
Engineered channel (riprap, armored channel bank, bed)		
Dike/levees	X	X
Groundwater extraction		
Ditches (borrow, agricultural drainage, mosquito control, etc.)		
Actively managed hydrology		
Comments		

PHYSICAL STRUCTURE ATTRIBUTE (WITHIN 50 M OF AA)	Present	Present and likely to have significant negative effect on AA
Filling or dumping of sediment or soils (N/A for restoration areas)		
Grading/ compaction (N/A for restoration areas)		
Plowing/Discing (N/A for restoration areas)		
Resource extraction (sediment, gravel, oil and/or gas)		
Vegetation management		
Excessive sediment or organic debris from watershed		
Excessive runoff from watershed		
Nutrient impaired (PS or Non-PS pollution)		
Heavy metal impaired (PS or Non-PS pollution)		
Pesticides or trace organics impaired (PS or Non-PS pollution)		
Bacteria and pathogens impaired (PS or Non-PS pollution)		
Trash or refuse		
Comments		

BIOTIC STRUCTURE ATTRIBUTE (WITHIN 50 M OF AA)	Present	Present and Likely to Have Significant negative effect on AA
Mowing, grazing, excessive herbivory (within AA)		
Excessive human visitation		
Predation and habitat destruction by non-native vertebrates (e.g., <i>Virginia opossum</i> and domestic predators, such as feral pets)		
Tree cutting/sapling removal		
Removal of woody debris		
Treatment of non-native and nuisance plant species		
Pesticide application or vector control		
Biological resource extraction or stocking (fisheries, aquaculture)		
Excessive organic debris in matrix (for vernal pools)		
Lack of vegetation management to conserve natural resources		
Lack of treatment of invasive plants adjacent to AA or buffer		
Comments		

BUFFER AND LANDSCAPE CONTEXT ATTRIBUTE (WITHIN 500 M OF AA)	Present	Present and likely to have significant negative effect on AA
Urban residential		
Industrial/commercial		
Military training/Air traffic		
Dams (or other major flow regulation or disruption)		
Dryland farming		
Intensive row-crop agriculture		
Orchards/nurseries		
Commercial feedlots		
Dairies		
Ranching (enclosed livestock grazing or horse paddock or feedlot)		
Transportation corridor	X	X
Rangeland (livestock rangeland also managed for native vegetation)		
Sports fields and urban parklands (golf courses, soccer fields, etc.)		
Passive recreation (bird-watching, hiking, etc.)		
Active recreation (off-road vehicles, mountain biking, hunting, fishing)		
Physical resource extraction (rock, sediment, oil/gas)		
Biological resource extraction (aquaculture, commercial fisheries)		
Comments		
Some evidence of active recreation on property but not w/in 500 meters		

Basic Information: Vernal Pool Systems

CRAM Site ID: APN: Buena Vista Dairy					
Project Site ID: Fresno to Bakersfield CMP					
Assessment Area Name: VS 305					
Project Name: Fresno to Bakersfield HST	Date (m/d/y)	5	16	12	
Assessment Team Members for This AA					
E. Maroni					
A. Langston					
G. Peracca					
Wetland Category:					
<input checked="" type="checkbox"/> Natural <input type="checkbox"/> Constructed <input type="checkbox"/> Restoration (Rehabilitation OR Enhancement)					
If Created or Restored, does the action encompass:					
<input type="checkbox"/> entire wetland <input type="checkbox"/> portion of the wetland					
What best describes the hydrologic state of the wetland at the time of assessment?					
<input type="checkbox"/> ponded/inundated <input type="checkbox"/> saturated soil, but no surface water <input checked="" type="checkbox"/> dry					
What is the apparent hydrologic regime of the wetland?					
<input type="checkbox"/> long-duration <input type="checkbox"/> medium-duration <input checked="" type="checkbox"/> short-duration					
Does the vernal pool system connect with the floodplain of a nearby stream?					
<input type="checkbox"/> yes <input checked="" type="checkbox"/> no					
Photo Identification Numbers and Description:					
	Photo ID No.	Description	Latitude	Longitude	Datum
1	1260	North			
2	1261	South			
3	1262	East			
4	1263	West			
5					
6					
Comments:					

Scoring Sheet: Vernal Pool Systems

AA Name: VS305				(m/d/y)	05/16/2012	
Attributes and Metrics			Alpha.	Numeric	Comments/Scores	
Buffer and Landscape Context						
(A) Aquatic Area Connectivity			A	12	Avg=85%	
(B): Percent of AA with Buffer	Alpha.	Numeric				
	A	12				100% with buffer
(C): Average Buffer Width	A	12				Avg=250 meters
(D): Buffer Condition	B	9				
Initial Attribute Score = $A + [D \times (B \times C)^{1/2}]^{1/2}$				22.4	Final Attribute Score = (Initial Score/24) x 100	93.3
Hydrology						
Water Source			A	12		
Hydroperiod			B	9		
Hydrologic Connectivity			A	12		
Initial Attribute Score				33	Final Attribute Score = (Initial Score/36) x 100	91.7
Physical Structure						
Structural Patch Richness			B	9	8 patch types	
Pool and Swale Density			A	12		
Topographic Complexity			C	6		
Initial Attribute Score				27	Final Attribute Score = (Initial Score/36) x 100	75
Biotic Structure						
Plant Community submetric A: Number of Co-dominant species	Alpha.	Numeric				
	C	6				2.5 co-dominant spp.
Plant Community submetric B: Percent Non Native	B	9				33% non-native spp.
Plant Community submetric C: Endemic Species Richness	D	3				0 endemic spp.
Plant Community Metric (average of submetrics A-C)				6		
Horizontal Interspersion and Zonation			B	9		
Initial Attribute Score				15	Final Attribute Score = (Initial Score/24) x 100	62.5
Overall AA Score (Average of Final Attribute Scores)					80.6	

Worksheet 9: Stressor Checklist.

HYDROLOGY ATTRIBUTE (WITHIN 50 M OF AA)	Present	Present and likely to have significant negative effect on AA
Point Source (PS) discharges (POTW, other non-stormwater discharge)		
Non-point Source (Non-PS) discharges (urban runoff, farm drainage)		
Flow diversions or unnatural inflows		
Dams (reservoirs, detention basins, recharge basins)		
Flow obstructions (culverts, paved stream crossings)		
Weir/drop structure, tide gates		
Dredged inlet/channel		
Engineered channel (riprap, armored channel bank, bed)		
Dike/levees	X	X
Groundwater extraction		
Ditches (borrow, agricultural drainage, mosquito control, etc.)		
Actively managed hydrology		
Comments		

PHYSICAL STRUCTURE ATTRIBUTE (WITHIN 50 M OF AA)	Present	Present and likely to have significant negative effect on AA
Filling or dumping of sediment or soils (N/A for restoration areas)		
Grading/ compaction (N/A for restoration areas)		
Plowing/Discing (N/A for restoration areas)		
Resource extraction (sediment, gravel, oil and/or gas)		
Vegetation management		
Excessive sediment or organic debris from watershed		
Excessive runoff from watershed		
Nutrient impaired (PS or Non-PS pollution)		
Heavy metal impaired (PS or Non-PS pollution)		
Pesticides or trace organics impaired (PS or Non-PS pollution)		
Bacteria and pathogens impaired (PS or Non-PS pollution)		
Trash or refuse		
Comments		

BIOTIC STRUCTURE ATTRIBUTE (WITHIN 50 M OF AA)	Present	Present and Likely to Have Significant negative effect on AA
Mowing, grazing, excessive herbivory (within AA)		
Excessive human visitation		
Predation and habitat destruction by non-native vertebrates (e.g., <i>Virginia opossum</i> and domestic predators, such as feral pets)		
Tree cutting/sapling removal		
Removal of woody debris		
Treatment of non-native and nuisance plant species		
Pesticide application or vector control		
Biological resource extraction or stocking (fisheries, aquaculture)		
Excessive organic debris in matrix (for vernal pools)		
Lack of vegetation management to conserve natural resources		
Lack of treatment of invasive plants adjacent to AA or buffer		
Comments		

BUFFER AND LANDSCAPE CONTEXT ATTRIBUTE (WITHIN 500 M OF AA)	Present	Present and likely to have significant negative effect on AA
Urban residential		
Industrial/commercial		
Military training/Air traffic		
Dams (or other major flow regulation or disruption)		
Dryland farming		
Intensive row-crop agriculture		
Orchards/nurseries		
Commercial feedlots		
Dairies		
Ranching (enclosed livestock grazing or horse paddock or feedlot)		
Transportation corridor	X	X
Rangeland (livestock rangeland also managed for native vegetation)		
Sports fields and urban parklands (golf courses, soccer fields, etc.)		
Passive recreation (bird-watching, hiking, etc.)		
Active recreation (off-road vehicles, mountain biking, hunting, fishing)		
Physical resource extraction (rock, sediment, oil/gas)		
Biological resource extraction (aquaculture, commercial fisheries)		
Comments		
Evidence of active recreation onsite but not within some of AA		

Basic Information: Vernal Pool Systems

CRAM Site ID: APN: Buena Vista Dairy VS307					
Project Site ID: Fresno to Bakersfield CMP					
Assessment Area Name: VS307					
Project Name: Fresno to Bakersfield HST		Date (m/d/y)	5	16	12
Assessment Team Members for This AA					
E. Maroni					
A. Langston					
G. Peracca					
Wetland Category:					
<input checked="" type="checkbox"/> Natural <input type="checkbox"/> Constructed <input type="checkbox"/> Restoration (Rehabilitation OR Enhancement)					
If Created or Restored, does the action encompass:					
<input type="checkbox"/> entire wetland <input type="checkbox"/> portion of the wetland					
What best describes the hydrologic state of the wetland at the time of assessment?					
<input type="checkbox"/> ponded/inundated <input type="checkbox"/> saturated soil, but no surface water <input checked="" type="checkbox"/> dry					
What is the apparent hydrologic regime of the wetland?					
<input type="checkbox"/> long-duration <input type="checkbox"/> medium-duration <input checked="" type="checkbox"/> short-duration					
Does the vernal pool system connect with the floodplain of a nearby stream?					
<input type="checkbox"/> yes <input checked="" type="checkbox"/> no					
Photo Identification Numbers and Description:					
	Photo ID No.	Description	Latitude	Longitude	Datum
1	1255	North			
2	1256	South			
3	1254	East			
4	1257	West			
5					
6					
Comments:					

Scoring Sheet: Vernal Pool Systems

AA Name: Buena Vista Dairy VS307				(m/d/y)	05/16/2012	
Attributes and Metrics			Alpha.	Numeric	Comments/Scores	
Buffer and Landscape Context						
(A) Aquatic Area Connectivity			A	12	Avg=55%	
(B): Percent of AA with Buffer	Alpha.	Numeric				
	A	12				100% with buffer
(C): Average Buffer Width	A	12				Avg=208.1 meters
(D): Buffer Condition	B	9				
Initial Attribute Score = $A + [D \times (B \times C)^{1/2}]^{1/2}$				22.4	Final Attribute Score = (Initial Score/24) x 100	93.3
Hydrology						
Water Source			B	9		
Hydroperiod			A	12		
Hydrologic Connectivity			A	12		
Initial Attribute Score				33	Final Attribute Score = (Initial Score/36) x 100	91.7
Physical Structure						
Structural Patch Richness			B	9	8 patch types	
Pool and Swale Density			A	12	Avg=76.3%	
Topographic Complexity			C	6		
Initial Attribute Score				27	Final Attribute Score = (Initial Score/36) x 100	75
Biotic Structure						
Plant Community submetric A: Number of Co-dominant species	Alpha.	Numeric				
	B	9				4.5 co-dominant spp.
Plant Community submetric B: Percent Non Native	B	9				28.6% non-native spp.
Plant Community submetric C: Endemic Species Richness	D	3				0 endemic spp.
Plant Community Metric (average of submetrics A-C)				7		
Horizontal Interspersion and Zonation			B	9		
Initial Attribute Score				16	Final Attribute Score = (Initial Score/24) x 100	66.7
Overall AA Score (Average of Final Attribute Scores)					81.7	

Worksheet 9: Stressor Checklist.

HYDROLOGY ATTRIBUTE (WITHIN 50 M OF AA)	Present	Present and likely to have significant negative effect on AA
Point Source (PS) discharges (POTW, other non-stormwater discharge)		
Non-point Source (Non-PS) discharges (urban runoff, farm drainage)		
Flow diversions or unnatural inflows		
Dams (reservoirs, detention basins, recharge basins)		
Flow obstructions (culverts, paved stream crossings)		
Weir/drop structure, tide gates		
Dredged inlet/channel		
Engineered channel (riprap, armored channel bank, bed)		
Dike/levees	X	X
Groundwater extraction		
Ditches (borrow, agricultural drainage, mosquito control, etc.)		
Actively managed hydrology		
Comments		

PHYSICAL STRUCTURE ATTRIBUTE (WITHIN 50 M OF AA)	Present	Present and likely to have significant negative effect on AA
Filling or dumping of sediment or soils (N/A for restoration areas)		
Grading/ compaction (N/A for restoration areas)		
Plowing/Discing (N/A for restoration areas)		
Resource extraction (sediment, gravel, oil and/or gas)		
Vegetation management		
Excessive sediment or organic debris from watershed		
Excessive runoff from watershed		
Nutrient impaired (PS or Non-PS pollution)		
Heavy metal impaired (PS or Non-PS pollution)		
Pesticides or trace organics impaired (PS or Non-PS pollution)		
Bacteria and pathogens impaired (PS or Non-PS pollution)		
Trash or refuse		
Comments		

BIOTIC STRUCTURE ATTRIBUTE (WITHIN 50 M OF AA)	Present	Present and Likely to Have Significant negative effect on AA
Mowing, grazing, excessive herbivory (within AA)		
Excessive human visitation		
Predation and habitat destruction by non-native vertebrates (e.g., <i>Virginia opossum</i> and domestic predators, such as feral pets)		
Tree cutting/sapling removal		
Removal of woody debris		
Treatment of non-native and nuisance plant species		
Pesticide application or vector control		
Biological resource extraction or stocking (fisheries, aquaculture)		
Excessive organic debris in matrix (for vernal pools)		
Lack of vegetation management to conserve natural resources		
Lack of treatment of invasive plants adjacent to AA or buffer		
Comments		

BUFFER AND LANDSCAPE CONTEXT ATTRIBUTE (WITHIN 500 M OF AA)	Present	Present and likely to have significant negative effect on AA
Urban residential		
Industrial/commercial		
Military training/Air traffic		
Dams (or other major flow regulation or disruption)		
Dryland farming		
Intensive row-crop agriculture	X	
Orchards/nurseries		
Commercial feedlots		
Dairies		
Ranching (enclosed livestock grazing or horse paddock or feedlot)		
Transportation corridor	X	X
Rangeland (livestock rangeland also managed for native vegetation)		
Sports fields and urban parklands (golf courses, soccer fields, etc.)		
Passive recreation (bird-watching, hiking, etc.)		
Active recreation (off-road vehicles, mountain biking, hunting, fishing)		
Physical resource extraction (rock, sediment, oil/gas)		
Biological resource extraction (aquaculture, commercial fisheries)		
Comments		
Some evidence of active recreation present		

Basic Information Sheet: Perennial Depressional Wetlands

Your Name: A. Langston					
Assessment Area Name: Davis D301					
Assessment No.		Date (mm/dd/yyyy): 05/17/2012			
Assessment Team Members for This AA					
G. Peracca					
A. Langston					
E. Maroni					
AA Category:					
<input type="checkbox"/> Restoration <input type="checkbox"/> Mitigation <input type="checkbox"/> Impacted <input checked="" type="checkbox"/> Other					
Which best describes the type of depressional wetland?					
<input type="checkbox"/> freshwater marsh <input type="checkbox"/> alkaline marsh <input type="checkbox"/> alkali flat <input checked="" type="checkbox"/> other (specify):					
Which best describes the hydrologic state of the wetland at the time of assessment?					
<input type="checkbox"/> ponded/inundated <input type="checkbox"/> saturated soil, but no surface water <input checked="" type="checkbox"/> dry					
What is the apparent hydrologic regime of the wetland?					
<p>Long-duration depressional wetlands are defined as supporting surface water for > 9 months of the year (in > 5 out of 10 years.) Medium-duration depressional wetlands are defined as supporting surface water for between 4 and 9 months of the year. Short-duration wetlands possess surface water between 2 weeks and 4 months of the year.</p>					
<input type="checkbox"/> long-duration <input type="checkbox"/> medium-duration <input checked="" type="checkbox"/> short-duration					
Does your wetland connect with the floodplain of a nearby stream? <input type="checkbox"/> yes <input checked="" type="checkbox"/> no					
Is the topographic basin of the wetland <input type="checkbox"/> distinct or <input checked="" type="checkbox"/> indistinct ?					
<p>An indistinct, such as vernal pool complexes and large wet meadows, which may be intricately interspersed with uplands or seemingly homogeneous over very large areas, topographic basin is one that lacks obvious boundaries between wetland and upland. Examples of such features are seasonal, depressional wetlands in very low-gradient landscapes.</p>					
Photo Identification Numbers and Description:					
	Photo ID No.	Description	Latitude	Longitude	Datum
1	1276	North			
2	1279	South			
3	1275	East			
4	1278	West			

Scoring Sheet: Perennial Depressional Wetlands

AA Name: Davis D301		Date: 05/17/2012		
Attributes and Metrics		Scores		Comments
Buffer and Landscape Context				
Landscape Connectivity (D)		B	9	
<i>Buffer submetric A: Percent of AA with Buffer</i>	9			70% with buffer
<i>Buffer submetric B: Average Buffer Width</i>	12			Avg= 250 meters
<i>Buffer submetric C: Buffer Condition</i>	12			
$D + [C \times (A \times B)^{1/2}]^{1/2} = \text{Attribute Score}$		Raw	Final	Final Attribute Score = (Raw Score/24)100
		20.2	84	84
Hydrology				
Water Source		12	groundwater	
Hydroperiod or Channel Stability		9		
Hydrologic Connectivity		9	*would this be a "c" or "a". talk to Chad, old man-made basin	
Attribute Score		Raw	Final	Final Attribute Score = (Raw Score/36)100
		30	83.3	83.3
Physical Structure				
Structural Patch Richness		3	2 patch types	
Topographic Complexity		6		
Attribute Score		Raw	Final	Final Attribute Score = (Raw Score/24)100
		9	37.5	37.5
Biotic Structure				
<i>Plant Community submetric A: Number of Plant Layers</i>	6			2 layers
<i>Plant Community submetric B: Number of Co-dominant species</i>	3			3 co-dominant spp.
<i>Plant Community submetric C: Percent Invasion</i>	12			0% invasion
Plant Community Metric (average of submetrics A-C)		7		
Horizontal Interspersion and Zonation		9		
Vertical Biotic Structure		12		
Attribute Score		Raw	Final	Final Attribute Score = (Raw Score/36)100
		28	77.8	77.8
Overall AA Score (Average of Final Attribute Scores)				70.7

Stressor Checklist Worksheet

HYDROLOGY ATTRIBUTE (WITHIN 50 M OF AA)	Present and likely to have negative effect on AA	Significant negative effect on AA
Point Source (PS) discharges (POTW, other non-stormwater discharge)		
Non-point Source (Non-PS) discharges (urban runoff, farm drainage)		
Flow diversions or unnatural inflows		
Dams (reservoirs, detention basins, recharge basins)		
Flow obstructions (culverts, paved stream crossings)	X	
Weir/drop structure, tide gates		
Dredged inlet/channel		
Engineered channel (riprap, armored channel bank, bed)		
Dike/levees		
Groundwater extraction		
Ditches (borrow, agricultural drainage, mosquito control, etc.)		
Actively managed hydrology		
Comments		

PHYSICAL STRUCTURE ATTRIBUTE (WITHIN 50 M OF AA)	Present and likely to have negative effect on AA	Significant negative effect on AA
Filling or dumping of sediment or soils (N/A for restoration areas)		
Grading/ compaction (N/A for restoration areas)		
Plowing/Discing (N/A for restoration areas)		
Resource extraction (sediment, gravel, oil and/or gas)		
Vegetation management		
Excessive sediment or organic debris from watershed		
Excessive runoff from watershed		
Nutrient impaired (PS or Non-PS pollution)		
Heavy metal impaired (PS or Non-PS pollution)		
Pesticides or trace organics impaired (PS or Non-PS pollution)		
Bacteria and pathogens impaired (PS or Non-PS pollution)		
Trash or refuse		
Comments		

BIOTIC STRUCTURE ATTRIBUTE (WITHIN 50 M OF AA)	Present and likely to have negative effect on AA	Significant negative effect on AA
Mowing, grazing, excessive herbivory (within AA)		
Excessive human visitation		
Predation and habitat destruction by non-native vertebrates (e.g., <i>Virginia opossum</i> and domestic predators, such as feral pets)		
Tree cutting/sapling removal		
Removal of woody debris		
Treatment of non-native and nuisance plant species		
Pesticide application or vector control		
Biological resource extraction or stocking (fisheries, aquaculture)		
Excessive organic debris in matrix (for vernal pools)		
Lack of vegetation management to conserve natural resources		
Lack of treatment of invasive plants adjacent to AA or buffer		
Comments		

BUFFER AND LANDSCAPE CONTEXT ATTRIBUTE (WITHIN 500 M OF AA)	Present and likely to have negative effect on AA	Significant negative effect on AA
Urban residential		
Industrial/commercial		
Military training/Air traffic		
Dams (or other major flow regulation or disruption)		
Dryland farming		
Intensive row-crop agriculture		
Orchards/nurseries		
Commercial feedlots		
Dairies		
Ranching (enclosed livestock grazing or horse paddock or feedlot)		
Transportation corridor	X	
Rangeland (livestock rangeland also managed for native vegetation)		
Sports fields and urban parklands (golf courses, soccer fields, etc.)		
Passive recreation (bird-watching, hiking, etc.)	X	
Active recreation (off-road vehicles, mountain biking, hunting, fishing)		
Physical resource extraction (rock, sediment, oil/gas)		
Biological resource extraction (aquaculture, commercial fisheries)		
Comments		

Basic Information Sheet: Perennial Depressional Wetlands

Your Name: A. Langston					
Assessment Area Name: Davis D301A					
Assessment No.		Date (mm/dd/yyyy): 05/17/2012			
Assessment Team Members for This AA					
G. Peracca					
A. Langston					
E. Maroni					
AA Category:					
<input type="checkbox"/> Restoration <input type="checkbox"/> Mitigation <input type="checkbox"/> Impacted <input checked="" type="checkbox"/> Other					
Which best describes the type of depressional wetland?					
<input type="checkbox"/> freshwater marsh <input type="checkbox"/> alkaline marsh <input checked="" type="checkbox"/> alkali flat <input type="checkbox"/> other (specify):					
Which best describes the hydrologic state of the wetland at the time of assessment?					
<input type="checkbox"/> ponded/inundated <input type="checkbox"/> saturated soil, but no surface water <input checked="" type="checkbox"/> dry					
What is the apparent hydrologic regime of the wetland?					
<p>Long-duration depressional wetlands are defined as supporting surface water for > 9 months of the year (in > 5 out of 10 years.) Medium-duration depressional wetlands are defined as supporting surface water for between 4 and 9 months of the year. Short-duration wetlands possess surface water between 2 weeks and 4 months of the year.</p>					
<input type="checkbox"/> long-duration <input type="checkbox"/> medium-duration <input checked="" type="checkbox"/> short-duration					
Does your wetland connect with the floodplain of a nearby stream? <input type="checkbox"/> yes <input checked="" type="checkbox"/> no					
Is the topographic basin of the wetland <input type="checkbox"/> distinct or <input checked="" type="checkbox"/> indistinct ?					
<p>An indistinct, such as vernal pool complexes and large wet meadows, which may be intricately interspersed with uplands or seemingly homogeneous over very large areas, topographic basin is one that lacks obvious boundaries between wetland and upland. Examples of such features are seasonal, depressional wetlands in very low-gradient landscapes.</p>					
Photo Identification Numbers and Description:					
	Photo ID No.	Description	Latitude	Longitude	Datum
1	1280	North			
2	1282	South			
3	1283	East			
4	1281	West			

Scoring Sheet: Perennial Depressional Wetlands

AA Name: Davis D301A		Date: 05/17/2012			
Attributes and Metrics		Scores		Comments	
Buffer and Landscape Context					
Landscape Connectivity (D)		B	9	Avg=72.5%	
<i>Buffer submetric A: Percent of AA with Buffer</i>	9			65% with buffer	
<i>Buffer submetric B: Average Buffer Width</i>	12			Avg= 250 meters	
<i>Buffer submetric C: Buffer Condition</i>	12				
$D + [C \times (A \times B)^{1/2}]^{1/2} = \text{Attribute Score}$		Raw 20.2	Final 84	Final Attribute Score = (Raw Score/24)100	84
Hydrology					
Water Source		12		groundwater	
Hydroperiod or Channel Stability		9			
Hydrologic Connectivity		9			
Attribute Score		Raw 30	Final 83.3	Final Attribute Score = (Raw Score/36)100	83.3
Physical Structure					
Structural Patch Richness		3		3 patch types	
Topographic Complexity		6			
Attribute Score		Raw 9	Final 37.5	Final Attribute Score = (Raw Score/24)100	37.5
Biotic Structure					
<i>Plant Community submetric A: Number of Plant Layers</i>	6			2 layers	
<i>Plant Community submetric B: Number of Co-dominant species</i>	3			1 co-dominant sp.	
<i>Plant Community submetric C: Percent Invasion</i>	12			0% invasion.	
Plant Community Metric (average of submetrics A-C)		7			
Horizontal Interspersion and Zonation		6			
Vertical Biotic Structure		12			
Attribute Score		Raw 25	Final 69.4	Final Attribute Score = (Raw Score/36)100	69.4
Overall AA Score (Average of Final Attribute Scores)				68.6	

Stressor Checklist Worksheet

HYDROLOGY ATTRIBUTE (WITHIN 50 M OF AA)	Present and likely to have negative effect on AA	Significant negative effect on AA
Point Source (PS) discharges (POTW, other non-stormwater discharge)		
Non-point Source (Non-PS) discharges (urban runoff, farm drainage)		
Flow diversions or unnatural inflows	X	
Dams (reservoirs, detention basins, recharge basins)		
Flow obstructions (culverts, paved stream crossings)		
Weir/drop structure, tide gates		
Dredged inlet/channel		
Engineered channel (riprap, armored channel bank, bed)		
Dike/levees		
Groundwater extraction		
Ditches (borrow, agricultural drainage, mosquito control, etc.)		
Actively managed hydrology		
Comments		

PHYSICAL STRUCTURE ATTRIBUTE (WITHIN 50 M OF AA)	Present and likely to have negative effect on AA	Significant negative effect on AA
Filling or dumping of sediment or soils (N/A for restoration areas)		
Grading/ compaction (N/A for restoration areas)		
Plowing/Discing (N/A for restoration areas)		
Resource extraction (sediment, gravel, oil and/or gas)		
Vegetation management		
Excessive sediment or organic debris from watershed		
Excessive runoff from watershed		
Nutrient impaired (PS or Non-PS pollution)		
Heavy metal impaired (PS or Non-PS pollution)		
Pesticides or trace organics impaired (PS or Non-PS pollution)		
Bacteria and pathogens impaired (PS or Non-PS pollution)		
Trash or refuse		
Comments		

BIOTIC STRUCTURE ATTRIBUTE (WITHIN 50 M OF AA)	Present and likely to have negative effect on AA	Significant negative effect on AA
Mowing, grazing, excessive herbivory (within AA)		
Excessive human visitation		
Predation and habitat destruction by non-native vertebrates (e.g., <i>Virginia opossum</i> and domestic predators, such as feral pets)		
Tree cutting/sapling removal		
Removal of woody debris		
Treatment of non-native and nuisance plant species		
Pesticide application or vector control		
Biological resource extraction or stocking (fisheries, aquaculture)		
Excessive organic debris in matrix (for vernal pools)		
Lack of vegetation management to conserve natural resources		
Lack of treatment of invasive plants adjacent to AA or buffer		
Comments		

BUFFER AND LANDSCAPE CONTEXT ATTRIBUTE (WITHIN 500 M OF AA)	Present and likely to have negative effect on AA	Significant negative effect on AA
Urban residential		
Industrial/commercial		
Military training/Air traffic		
Dams (or other major flow regulation or disruption)		
Dryland farming		
Intensive row-crop agriculture		
Orchards/nurseries		
Commercial feedlots		
Dairies		
Ranching (enclosed livestock grazing or horse paddock or feedlot)		
Transportation corridor	X	
Rangeland (livestock rangeland also managed for native vegetation)		
Sports fields and urban parklands (golf courses, soccer fields, etc.)		
Passive recreation (bird-watching, hiking, etc.)	X	
Active recreation (off-road vehicles, mountain biking, hunting, fishing)		
Physical resource extraction (rock, sediment, oil/gas)		
Biological resource extraction (aquaculture, commercial fisheries)		
Comments		

Basic Information: Individual Vernal Pool

CRAM Site ID: Staffel					
Project Site ID: Fresno to Bakersfield HST (CMP)					
Assessment Area Name: V301					
Project Name: Fresno to Bakersfield HST (CMP)		Date (m/d/y)	5	15	12
Assessment Team Members for This AA					
G. Peracca					
A. Langston					
E. Maroni					
Wetland Category:					
<input checked="" type="checkbox"/> Natural <input type="checkbox"/> Constructed <input type="checkbox"/> Restoration (Rehabilitation OR Enhancement)					
If Created or Restored, does the action encompass:					
<input type="checkbox"/> entire wetland <input type="checkbox"/> portion of the wetland					
What best describes the hydrologic state of the wetland at the time of assessment?					
<input type="checkbox"/> ponded/inundated <input type="checkbox"/> saturated soil, but no surface water <input checked="" type="checkbox"/> dry					
What is the apparent hydrologic regime of the wetland?					
<input type="checkbox"/> long-duration <input type="checkbox"/> medium-duration <input checked="" type="checkbox"/> short-duration					
Does the vernal pool system connect with the floodplain of a nearby stream?					
<input type="checkbox"/> yes <input checked="" type="checkbox"/> no					
Photo Identification Numbers and Description:					
	Photo ID No.	Description	Latitude	Longitude	Datum
1	5634	North			
2	5636	South			
3	5633	East			
4	5635	West			
5					
6					
Comments:					

Scoring Sheet: Individual Vernal Pools

AA Name: V301			(m/d/y)	05/15/2012
Attributes and Metrics		Alpha.	Numeric	Comments
Buffer and Landscape Context				
(A) Aquatic Area Connectivity		A	12	Avg= 53%
(B): Percent of AA with Buffer	Alpha.	Numeric		
	A	12		100% with buffer
(C): Average Buffer Width	A	12		Avg=250m
(D): Buffer Condition	B	9		
Initial Attribute Score = $A + [D \times (B \times C)^{1/2}]^{1/2}$			22.4	Final Attribute Score = (Initial Score/24) x 100
				93.3
Hydrology				
Water Source		B	9	
Hydroperiod		A	12	
Hydrologic Connectivity		A	12	
Initial Attribute Score			33	Final Attribute Score = (Initial Score/36) x 100
				91.7
Physical Structure				
Structural Patch Richness		C	6	4 patch types
Topographic Complexity		C	6	
Initial Attribute Score			12	Final Attribute Score = (Initial Score/24) x 100
				50
Biotic Structure				
Horizontal Interspersion and Zonation		B	9	
Community composition submetric A: Number of Co-dominants	Alpha.	Numeric		
	A	12		7 co-dominant spp.
Community composition submetric B: Percent Non-native	A	12		14% non-native spp.
Community Composition submetric C: Endemic Species Richness	D	3		0 endemic spp.
Plant Community Composition Metric (numeric average of submetrics A-C)			9	
Initial Attribute Score			18	Final Attribute Score = (Initial Score/24) x 100
				75
Overall AA Score (Average of Final Attribute Scores)				77.5

Worksheet 8: Stressor Checklist.

HYDROLOGY ATTRIBUTE (WITHIN 50 M OF AA)	Present	Present and likely to have significant negative effect on AA
Point Source (PS) discharges (POTW, other non-stormwater discharge)		
Non-point Source (Non-PS) discharges (urban runoff, farm drainage)		
Flow diversions or unnatural inflows		
Dams (reservoirs, detention basins, recharge basins)		
Flow obstructions (culverts, paved stream crossings)		
Weir/drop structure, tide gates		
Dredged inlet/channel		
Engineered channel (riprap, armored channel bank, bed)		
Dike/levees		
Groundwater extraction		
Ditches (borrow, agricultural drainage, mosquito control, etc.)		
Actively managed hydrology		
Comments		
No stressors.		

PHYSICAL STRUCTURE ATTRIBUTE (WITHIN 50 M OF AA)	Present	Present and likely to have significant negative effect on AA
Filling or dumping of sediment or soils (N/A for restoration areas)		
Grading/ compaction (N/A for restoration areas)		
Plowing/Discing (N/A for restoration areas)		
Resource extraction (sediment, gravel, oil and/or gas)		
Vegetation management		
Excessive sediment or organic debris from watershed		
Excessive runoff from watershed		
Nutrient impaired (PS or Non-PS pollution)		
Heavy metal impaired (PS or Non-PS pollution)		
Pesticides or trace organics impaired (PS or Non-PS pollution)		
Bacteria and pathogens impaired (PS or Non-PS pollution)		
Trash or refuse	X	X
Comments		
No stressors.		

BIOTIC STRUCTURE ATTRIBUTE (WITHIN 50 M OF AA)	Present	Present and Likely to Have Significant negative effect on AA
Mowing, grazing, excessive herbivory (within AA)		
Excessive human visitation		
Predation and habitat destruction by non-native vertebrates (e.g., <i>Virginia opossum</i> and domestic predators, such as feral pets)		
Tree cutting/sapling removal		
Removal of woody debris		
Treatment of non-native and nuisance plant species		
Pesticide application or vector control		
Biological resource extraction or stocking (fisheries, aquaculture)		
Excessive organic debris in matrix (for vernal pools)		
Lack of vegetation management to conserve natural resources		
Lack of treatment of invasive plants adjacent to AA or buffer		
Comments		
No stressors.		

BUFFER AND LANDSCAPE CONTEXT ATTRIBUTE (WITHIN 500 M OF AA)	Present	Present and likely to have significant negative effect on AA
Urban residential		
Industrial/commercial		
Military training/Air traffic		
Dams (or other major flow regulation or disruption)		
Dryland farming		
Intensive row-crop agriculture		
Orchards/nurseries	X	X
Commercial feedlots		
Dairies		
Ranching (enclosed livestock grazing or horse paddock or feedlot)		
Transportation corridor		
Rangeland (livestock rangeland also managed for native vegetation)		
Sports fields and urban parklands (golf courses, soccer fields, etc.)		
Passive recreation (bird-watching, hiking, etc.)		
Active recreation (off-road vehicles, mountain biking, hunting, fishing)		
Physical resource extraction (rock, sediment, oil/gas)		
Biological resource extraction (aquaculture, commercial fisheries)		
Comments		

Basic Information: Individual Vernal Pool

CRAM Site ID: Staffel					
Project Site ID: Fresno to Bakersfield HST (CMP)					
Assessment Area Name: V302					
Project Name: Fresno to Bakersfield HST (CMP)		Date (m/d/y)	5	15	12
Assessment Team Members for This AA					
G. Peracca					
A. Langston					
E. Maroni					
Wetland Category:					
<input checked="" type="checkbox"/> Natural <input type="checkbox"/> Constructed <input type="checkbox"/> Restoration (Rehabilitation OR Enhancement)					
If Created or Restored, does the action encompass:					
<input type="checkbox"/> entire wetland <input type="checkbox"/> portion of the wetland					
What best describes the hydrologic state of the wetland at the time of assessment?					
<input type="checkbox"/> ponded/inundated <input type="checkbox"/> saturated soil, but no surface water <input checked="" type="checkbox"/> dry					
What is the apparent hydrologic regime of the wetland?					
<input type="checkbox"/> long-duration <input type="checkbox"/> medium-duration <input checked="" type="checkbox"/> short-duration					
Does the vernal pool system connect with the floodplain of a nearby stream?					
<input type="checkbox"/> yes <input checked="" type="checkbox"/> no					
Photo Identification Numbers and Description:					
	Photo ID No.	Description	Latitude	Longitude	Datum
1	5643	North			
2	5641	South			
3	5642	East			
4	5640	West			
5					
6					
Comments: Presence of dumped trash; couch, refrigerator, oil drums, plastic tubing, plastic buckets					

Scoring Sheet: Individual Vernal Pools

AA Name: V302			(m/d/y)	05/15/2012	
Attributes and Metrics		Alpha.	Numeric	Comments	
Buffer and Landscape Context					
(A) Aquatic Area Connectivity		A	12	Avg= 57% Aquatic Area	
(B): Percent of AA with Buffer	Alpha.	Numeric		100% with buffer	
	A	12			
(C): Average Buffer Width	A	12		Avg=250 meters	
(D): Buffer Condition	B	9		Litter present in AA	
Initial Attribute Score = $A + [D \times (B \times C)]^{1/2}$			22.4	Final Attribute Score = (Initial Score/24) x 100	93.3
Hydrology					
Water Source		B	9		
Hydroperiod		A	12		
Hydrologic Connectivity		A	12		
Initial Attribute Score			33	Final Attribute Score = (Initial Score/36) x 100	91.7
Physical Structure					
Structural Patch Richness		D	3	2 patch types	
Topographic Complexity		C	6		
Initial Attribute Score			9	Final Attribute Score = (Initial Score/24) x 100	37.5
Biotic Structure					
Horizontal Interspersion and Zonation		C	6		
Community composition submetric A: Number of Co-dominants	Alpha.	Numeric		5 co-dominant spp.	
	B	9			
Community composition submetric B: Percent Non-native	A	12		20% non-native spp.	
Community Composition submetric C: Endemic Species Richness	D	3		0 endemic spp.	
Plant Community Composition Metric (numeric average of submetrics A-C)			8		
Initial Attribute Score			14	Final Attribute Score = (Initial Score/24) x 100	58.3
Overall AA Score (Average of Final Attribute Scores)				70.2	

Worksheet 8: Stressor Checklist.

HYDROLOGY ATTRIBUTE (WITHIN 50 M OF AA)	Present	Present and likely to have significant negative effect on AA
Point Source (PS) discharges (POTW, other non-stormwater discharge)		
Non-point Source (Non-PS) discharges (urban runoff, farm drainage)		
Flow diversions or unnatural inflows		
Dams (reservoirs, detention basins, recharge basins)		
Flow obstructions (culverts, paved stream crossings)		
Weir/drop structure, tide gates		
Dredged inlet/channel		
Engineered channel (riprap, armored channel bank, bed)		
Dike/levees		
Groundwater extraction		
Ditches (borrow, agricultural drainage, mosquito control, etc.)		
Actively managed hydrology		
Comments		
No stressors.		

PHYSICAL STRUCTURE ATTRIBUTE (WITHIN 50 M OF AA)	Present	Present and likely to have significant negative effect on AA
Filling or dumping of sediment or soils (N/A for restoration areas)		
Grading/ compaction (N/A for restoration areas)		
Plowing/Discing (N/A for restoration areas)		
Resource extraction (sediment, gravel, oil and/or gas)		
Vegetation management		
Excessive sediment or organic debris from watershed		
Excessive runoff from watershed		
Nutrient impaired (PS or Non-PS pollution)		
Heavy metal impaired (PS or Non-PS pollution)		
Pesticides or trace organics impaired (PS or Non-PS pollution)		
Bacteria and pathogens impaired (PS or Non-PS pollution)		
Trash or refuse	X	X
Comments		
Degraded waste (couch, refrigerator, oil buckets)		

BIOTIC STRUCTURE ATTRIBUTE (WITHIN 50 M OF AA)	Present	Present and Likely to Have Significant negative effect on AA
Mowing, grazing, excessive herbivory (within AA)		
Excessive human visitation		
Predation and habitat destruction by non-native vertebrates (e.g., <i>Virginia opossum</i> and domestic predators, such as feral pets)		
Tree cutting/sapling removal		
Removal of woody debris		
Treatment of non-native and nuisance plant species		
Pesticide application or vector control		
Biological resource extraction or stocking (fisheries, aquaculture)		
Excessive organic debris in matrix (for vernal pools)		
Lack of vegetation management to conserve natural resources		
Lack of treatment of invasive plants adjacent to AA or buffer		
Comments		
No stressors.		

BUFFER AND LANDSCAPE CONTEXT ATTRIBUTE (WITHIN 500 M OF AA)	Present	Present and likely to have significant negative effect on AA
Urban residential		
Industrial/commercial		
Military training/Air traffic		
Dams (or other major flow regulation or disruption)		
Dryland farming		
Intensive row-crop agriculture		
Orchards/nurseries	X	X
Commercial feedlots		
Dairies		
Ranching (enclosed livestock grazing or horse paddock or feedlot)		
Transportation corridor		
Rangeland (livestock rangeland also managed for native vegetation)		
Sports fields and urban parklands (golf courses, soccer fields, etc.)		
Passive recreation (bird-watching, hiking, etc.)		
Active recreation (off-road vehicles, mountain biking, hunting, fishing)		
Physical resource extraction (rock, sediment, oil/gas)		
Biological resource extraction (aquaculture, commercial fisheries)		
Comments		

Basic Information Sheet: Riverine Wetlands

CRAM Site ID: TeVelde			
Project Site ID: FB HST CMP			
Assessment Area Name: R300			
Project Name: FB HST Mitigation	Date (m/d/y)	05	14
Assessment Team Members for This AA:			
A. Langston			
G. Peracca			
E. Maroni			
Average Bankfull Width: 18 m			
Approximate Length of AA (10 times bankfull width, min 100 m, max 200 m): 180 m			
Upstream Point Latitude:		Longitude:	
Downstream Point Latitude:		Longitude:	
Wetland Sub-type:			
<input checked="" type="checkbox"/> Confined <input type="checkbox"/> Non-confined			
AA Category:			
<input type="checkbox"/> Restoration <input type="checkbox"/> Mitigation <input type="checkbox"/> Impacted <input checked="" type="checkbox"/> Ambient <input checked="" type="checkbox"/> Reference <input type="checkbox"/> Training			
<input type="checkbox"/> Other:			
Did the river/stream have flowing water at the time of the assessment? <input type="checkbox"/> yes <input checked="" type="checkbox"/> no			
What is the apparent hydrologic flow regime of the reach you are assessing?			
<p>The hydrologic flow regime of a stream describes the frequency with which the channel conducts water. <i>Perennial</i> streams conduct water all year long, whereas <i>ephemeral</i> streams conduct water only during and immediately following precipitation events. <i>Intermittent</i> streams are dry for part of the year, but conduct water for periods longer than ephemeral streams, as a function of watershed size and water source.</p>			
<input type="checkbox"/> perennial <input checked="" type="checkbox"/> intermittent <input type="checkbox"/> ephemeral			

Photo Identification Numbers and Description:

	Photo ID No.	Description	Latitude	Longitude	Datum
1	5620, 5621	Upstream			
2	5623	Middle Left			
3	5622	Middle Right			
4	5624	Downstream			
5					
6					
7					
8					
9					
10					

Site Location Description:

Comments:

Scoring Sheet: Riverine Wetlands

AA Name: R300				(m/d/y)	05	14	12	
Attribute 1: Buffer and Landscape Context				Comments				
Aquatic Area Abundance Score (D)			Alpha.	Numeric	20 meters			
			A	12				
Buffer:								
<i>Buffer submetric A: Percent of AA with Buffer</i>		Alpha.	Numeric	100% with buffer				
		A	12					
<i>Buffer submetric B: Average Buffer Width</i>		D	3	Average = 8.8 meters				
<i>Buffer submetric C: Buffer Condition</i>		D	3	Buffer is road berm				
Raw Attribute Score = $D + [C \times (A \times B)^{1/2}]^{1/2}$ (use numerical value to nearest whole integer)				16.2		Final Attribute Score = (Raw Score/24) x 100		67.7
Attribute 2: Hydrology								
Water Source			Alpha.	Numeric	>20% drainage basin is agricultural			
			C	6				
Channel Stability			B	9				
Hydrologic Connectivity			C	6	Average = 1.2 meters			
Raw Attribute Score = sum of numeric scores				21		Final Attribute Score = (Raw Score/36) x 100		58.3
Attribute 3: Physical Structure								
Structural Patch Richness			Alpha.	Numeric	2 patch types			
			D	3				
Topographic Complexity			C	6				
Raw Attribute Score = sum of numeric scores				9		Final Attribute Score = (Raw Score/24) x 100		37.5
Attribute 4: Biotic Structure								
Plant Community Composition (based on sub-metrics A-C)								
<i>Plant Community submetric A: Number of plant layers</i>		Alpha.	Numeric	3 layers				
		B	9					
<i>Plant Community submetric B: Number of Co-dominant species</i>		C	6	7 co-dominant spp.				
<i>Plant Community submetric C: Percent Invasion</i>		C	6	43% invasive spp.				
Plant Community Composition (average of submetrics A-C rounded to nearest whole integer)				7				
Horizontal Interspersion			C	6				
Vertical Biotic Structure			C	6				
Raw Attribute Score = sum of numeric scores				19		Final Attribute Score = (Raw Score/36) x 100		52.8
Overall AA Score (average of four final Attribute Scores)				54.1				

Stressor Checklist Worksheet

HYDROLOGY ATTRIBUTE (WITHIN 50 M OF AA)	Present	Significant negative effect on AA
Point Source (PS) discharges (POTW, other non-stormwater discharge)		
Non-point Source (Non-PS) discharges (urban runoff, farm drainage)	X	X
Flow diversions or unnatural inflows	X	X
Dams (reservoirs, detention basins, recharge basins)		
Flow obstructions (culverts, paved stream crossings)		
Weir/drop structure, tide gates		
Dredged inlet/channel		
Engineered channel (riprap, armored channel bank, bed)		
Dike/levees		
Groundwater extraction		
Ditches (borrow, agricultural drainage, mosquito control, etc.)		
Actively managed hydrology		
Comments		

PHYSICAL STRUCTURE ATTRIBUTE (WITHIN 50 M OF AA)	Present	Significant negative effect on AA
Filling or dumping of sediment or soils (N/A for restoration areas)		
Grading/ compaction (N/A for restoration areas)	X	X
Plowing/Discing (N/A for restoration areas)	X	X
Resource extraction (sediment, gravel, oil and/or gas)		
Vegetation management		
Excessive sediment or organic debris from watershed		
Excessive runoff from watershed		
Nutrient impaired (PS or Non-PS pollution)		
Heavy metal impaired (PS or Non-PS pollution)		
Pesticides or trace organics impaired (PS or Non-PS pollution)		
Bacteria and pathogens impaired (PS or Non-PS pollution)	X	X
Trash or refuse		
Comments		
Photos 5625-5627 are manure piles		

BIOTIC STRUCTURE ATTRIBUTE (WITHIN 50 M OF AA)	Present	Significant negative effect on AA
Mowing, grazing, excessive herbivory (within AA)		
Excessive human visitation		
Predation and habitat destruction by non-native vertebrates (e.g., <i>Virginia opossum</i> and domestic predators, such as feral pets)		
Tree cutting/sapling removal		
Removal of woody debris		
Treatment of non-native and nuisance plant species		
Pesticide application or vector control	X	
Biological resource extraction or stocking (fisheries, aquaculture)		
Excessive organic debris in matrix (for vernal pools)		
Lack of vegetation management to conserve natural resources		
Lack of treatment of invasive plants adjacent to AA or buffer		
Comments		

BUFFER AND LANDSCAPE CONTEXT ATTRIBUTE (WITHIN 500 M OF AA)	Present	Significant negative effect on AA
Urban residential		
Industrial/commercial		
Military training/Air traffic		
Dams (or other major flow regulation or disruption)		
Dryland farming		
Intensive row-crop agriculture		
Orchards/nurseries		
Commercial feedlots		
Dairies		
Ranching (enclosed livestock grazing or horse paddock or feedlot)	X	X
Transportation corridor		
Rangeland (livestock rangeland also managed for native vegetation)		
Sports fields and urban parklands (golf courses, soccer fields, etc.)		
Passive recreation (bird-watching, hiking, etc.)		
Active recreation (off-road vehicles, mountain biking, hunting, fishing)		
Physical resource extraction (rock, sediment, oil/gas)		
Biological resource extraction (aquaculture, commercial fisheries)		
Comments		

Basic Information Sheet: Riverine Wetlands

CRAM Site ID: TeVelde			
Project Site ID: FB HST CMP			
Assessment Area Name: R302			
Project Name: FB HST Mitigation	Date (m/d/y)	05	14
Assessment Team Members for This AA:			
A. Langston			
G. Peracca			
E. Maroni			
Average Bankfull Width: 5.4 meters			
Approximate Length of AA (10 times bankfull width, min 100 m, max 200 m): 100 meters			
Upstream Point Latitude:		Longitude:	
Downstream Point Latitude:		Longitude:	
Wetland Sub-type:			
<input checked="" type="checkbox"/> Confined <input type="checkbox"/> Non-confined			
AA Category:			
<input type="checkbox"/> Restoration <input type="checkbox"/> Mitigation <input type="checkbox"/> Impacted <input checked="" type="checkbox"/> Ambient <input checked="" type="checkbox"/> Reference <input type="checkbox"/> Training			
<input type="checkbox"/> Other:			
Did the river/stream have flowing water at the time of the assessment? <input type="checkbox"/> yes <input checked="" type="checkbox"/> no			
What is the apparent hydrologic flow regime of the reach you are assessing?			
<p>The hydrologic flow regime of a stream describes the frequency with which the channel conducts water. <i>Perennial</i> streams conduct water all year long, whereas <i>ephemeral</i> streams conduct water only during and immediately following precipitation events. <i>Intermittent</i> streams are dry for part of the year, but conduct water for periods longer than ephemeral streams, as a function of watershed size and water source.</p>			
<input type="checkbox"/> perennial <input checked="" type="checkbox"/> intermittent <input type="checkbox"/> ephemeral			

Photo Identification Numbers and Description:

	Photo ID No.	Description	Latitude	Longitude	Datum
1	5632	Upstream			
2	5630	Middle Left			
3	5631	Middle Right			
4	5628, 5629	Downstream			
5					
6					
7					
8					
9					
10					

Site Location Description:

Comments:

Scoring Sheet: Riverine Wetlands

AA Name: R302				(m/d/y)	05	14	12				
Attribute 1: Buffer and Landscape Context					Comments						
Aquatic Area Abundance Score (D)			Alpha.	Numeric							
			A	12							
Buffer:											
<i>Buffer submetric A: Percent of AA with Buffer</i>		Alpha.						Numeric			
		A						12	100% w/buffer		
<i>Buffer submetric B: Average Buffer Width</i>		D						3	Average = 7.8 meters		
<i>Buffer submetric C: Buffer Condition</i>		D	3								
Raw Attribute Score = $D + [C \times (A \times B)^{1/2}]^{1/2}$ (use numerical value to nearest whole integer)				16.2		Final Attribute Score = (Raw Score/24) x 100		67.7			
Attribute 2: Hydrology											
Water Source			Alpha.	Numeric							
			C	6							
Channel Stability			B	9							
Hydrologic Connectivity			A	12	Entrenchment ratio = 2.3						
Raw Attribute Score = sum of numeric scores				27		Final Attribute Score = (Raw Score/36) x 100		75			
Attribute 3: Physical Structure											
Structural Patch Richness			Alpha.	Numeric	2 patch types						
			D	3							
Topographic Complexity			C	6							
Raw Attribute Score = sum of numeric scores				9		Final Attribute Score = (Raw Score/24) x 100		37.5			
Attribute 4: Biotic Structure											
Plant Community Composition (based on sub-metrics A-C)											
<i>Plant Community submetric A: Number of plant layers</i>		Alpha.	Numeric								
		A	12								
<i>Plant Community submetric B: Number of Co-dominant species</i>		B	9	4 layers							
<i>Plant Community submetric C: Percent Invasion</i>		C	6	10 co-dominant spp							
				40% invasion							
Plant Community Composition (average of submetrics A-C rounded to nearest whole integer)				9							
Horizontal Interspersion			B	9							
Vertical Biotic Structure			C	6							
Raw Attribute Score = sum of numeric scores				24		Final Attribute Score = (Raw Score/36) x 100		67.7			
Overall AA Score (average of four final Attribute Scores)					61.7						

Stressor Checklist Worksheet

HYDROLOGY ATTRIBUTE (WITHIN 50 M OF AA)	Present	Significant negative effect on AA
Point Source (PS) discharges (POTW, other non-stormwater discharge)		
Non-point Source (Non-PS) discharges (urban runoff, farm drainage)	X	X
Flow diversions or unnatural inflows	X	X
Dams (reservoirs, detention basins, recharge basins)		
Flow obstructions (culverts, paved stream crossings)	X	
Weir/drop structure, tide gates		
Dredged inlet/channel		
Engineered channel (riprap, armored channel bank, bed)		
Dike/levees	X	
Groundwater extraction		
Ditches (borrow, agricultural drainage, mosquito control, etc.)		
Actively managed hydrology	X	
Comments		

PHYSICAL STRUCTURE ATTRIBUTE (WITHIN 50 M OF AA)	Present	Significant negative effect on AA
Filling or dumping of sediment or soils (N/A for restoration areas)		
Grading/ compaction (N/A for restoration areas)	X	X
Plowing/Discing (N/A for restoration areas)	X	X
Resource extraction (sediment, gravel, oil and/or gas)		
Vegetation management		
Excessive sediment or organic debris from watershed		
Excessive runoff from watershed		
Nutrient impaired (PS or Non-PS pollution)		
Heavy metal impaired (PS or Non-PS pollution)		
Pesticides or trace organics impaired (PS or Non-PS pollution)		
Bacteria and pathogens impaired (PS or Non-PS pollution)	X	X
Trash or refuse	X	
Comments		
Sediment is transported into drainage when farmer plows, discs, and grades adjacent fields.		
Assuming some bacteria/pathogen impairment from adjacent livestock waste piles.		

BIOTIC STRUCTURE ATTRIBUTE (WITHIN 50 M OF AA)	Present	Significant negative effect on AA
Mowing, grazing, excessive herbivory (within AA)		
Excessive human visitation		
Predation and habitat destruction by non-native vertebrates (e.g., <i>Virginia opossum</i> and domestic predators, such as feral pets)		
Tree cutting/sapling removal		
Removal of woody debris		
Treatment of non-native and nuisance plant species		
Pesticide application or vector control		
Biological resource extraction or stocking (fisheries, aquaculture)		
Excessive organic debris in matrix (for vernal pools)		
Lack of vegetation management to conserve natural resources		
Lack of treatment of invasive plants adjacent to AA or buffer		
Comments		

BUFFER AND LANDSCAPE CONTEXT ATTRIBUTE (WITHIN 500 M OF AA)	Present	Significant negative effect on AA
Urban residential		
Industrial/commercial		
Military training/Air traffic		
Dams (or other major flow regulation or disruption)		
Dryland farming		
Intensive row-crop agriculture		
Orchards/nurseries		
Commercial feedlots		
Dairies		
Ranching (enclosed livestock grazing or horse paddock or feedlot)	X	X
Transportation corridor		
Rangeland (livestock rangeland also managed for native vegetation)		
Sports fields and urban parklands (golf courses, soccer fields, etc.)		
Passive recreation (bird-watching, hiking, etc.)		
Active recreation (off-road vehicles, mountain biking, hunting, fishing)		
Physical resource extraction (rock, sediment, oil/gas)		
Biological resource extraction (aquaculture, commercial fisheries)		
Comments		

Basic Information Sheet: Perennial Depressional Wetlands

Your Name: A. Langston					
Assessment Area Name: Valadez D303					
Assessment No.		Date (mm/dd/yyyy): 05/17/2012			
Assessment Team Members for This AA					
G. Peracca					
A. Langston					
E. Maroni					
AA Category:					
<input type="checkbox"/> Restoration <input type="checkbox"/> Mitigation <input type="checkbox"/> Impacted <input checked="" type="checkbox"/> Other					
Which best describes the type of depressional wetland?					
<input type="checkbox"/> freshwater marsh <input type="checkbox"/> alkaline marsh <input type="checkbox"/> alkali flat <input checked="" type="checkbox"/> other (specify): Seasonal Basin.					
Which best describes the hydrologic state of the wetland at the time of assessment?					
<input type="checkbox"/> ponded/inundated <input type="checkbox"/> saturated soil, but no surface water <input checked="" type="checkbox"/> dry					
What is the apparent hydrologic regime of the wetland?					
Long-duration depressional wetlands are defined as supporting surface water for > 9 months of the year (in > 5 out of 10 years.) Medium-duration depressional wetlands are defined as supporting surface water for between 4 and 9 months of the year. Short-duration wetlands possess surface water between 2 weeks and 4 months of the year.					
<input type="checkbox"/> long-duration <input type="checkbox"/> medium-duration <input checked="" type="checkbox"/> short-duration					
Does your wetland connect with the floodplain of a nearby stream? <input type="checkbox"/> yes <input checked="" type="checkbox"/> no					
Is the topographic basin of the wetland <input type="checkbox"/> distinct or <input checked="" type="checkbox"/> indistinct ?					
An indistinct, such as vernal pool complexes and large wet meadows, which may be intricately interspersed with uplands or seemingly homogeneous over very large areas, topographic basin is one that lacks obvious boundaries between wetland and upland. Examples of such features are seasonal, depressional wetlands in very low-gradient landscapes.					
Photo Identification Numbers and Description:					
	Photo ID No.	Description	Latitude	Longitude	Datum
1	1284	North			
2	1285	South			
3	1286	East			
4	1287	West			

Scoring Sheet: Perennial Depressional Wetlands

AA Name: Valadez D303			Date: 05/17/2012		
Attributes and Metrics		Scores		Comments	
Buffer and Landscape Context					
Landscape Connectivity (D)		3		Avg=8.8%	
<i>Buffer submetric A:</i> <i>Percent of AA with Buffer</i>	12			100% with buffer	
<i>Buffer submetric B:</i> <i>Average Buffer Width</i>	12			Avg= 232.5 meters	
<i>Buffer submetric C:</i> <i>Buffer Condition</i>	6				
$D + [C \times (A \times B)^{1/2}]^{1/2} = \text{Attribute Score}$		Raw	Final	Final Attribute Score =	
		11.5	47.9	(Raw Score/24)100	47.9
Hydrology					
Water Source		9			
Hydroperiod or Channel Stability		9			
Hydrologic Connectivity		6			
Attribute Score		Raw	Final	Final Attribute Score =	
		24	66.7	(Raw Score/36)100	66.7
Physical Structure					
Structural Patch Richness		6		6 patch types	
Topographic Complexity		6			
Attribute Score		Raw	Final	Final Attribute Score =	
		12	50	(Raw Score/24)100	50
Biotic Structure					
<i>Plant Community submetric A:</i> <i>Number of Plant Layers</i>	9			3 layers	
<i>Plant Community submetric B:</i> <i>Number of Co-dominant species</i>	6			7 co-dominant spp.	
<i>Plant Community submetric C:</i> <i>Percent Invasion</i>	6			43% invasion	
Plant Community Metric (average of submetrics A-C)		7			
Horizontal Interspersion and Zonation		12			
Vertical Biotic Structure		6			
Attribute Score		Raw	Final	Final Attribute Score =	
		25	69.4	(Raw Score/36)100	69.4
Overall AA Score (Average of Final Attribute Scores)				58.5	

Stressor Checklist Worksheet

HYDROLOGY ATTRIBUTE (WITHIN 50 M OF AA)	Present and likely to have negative effect on AA	Significant negative effect on AA
Point Source (PS) discharges (POTW, other non-stormwater discharge)		
Non-point Source (Non-PS) discharges (urban runoff, farm drainage)		
Flow diversions or unnatural inflows		
Dams (reservoirs, detention basins, recharge basins)		
Flow obstructions (culverts, paved stream crossings)		
Weir/drop structure, tide gates		
Dredged inlet/channel		
Engineered channel (riprap, armored channel bank, bed)		
Dike/levees		
Groundwater extraction		
Ditches (borrow, agricultural drainage, mosquito control, etc.)		
Actively managed hydrology		
Comments		

PHYSICAL STRUCTURE ATTRIBUTE (WITHIN 50 M OF AA)	Present and likely to have negative effect on AA	Significant negative effect on AA
Filling or dumping of sediment or soils (N/A for restoration areas)		
Grading/ compaction (N/A for restoration areas)	X	
Plowing/Discing (N/A for restoration areas)		
Resource extraction (sediment, gravel, oil and/or gas)		
Vegetation management		
Excessive sediment or organic debris from watershed		
Excessive runoff from watershed		
Nutrient impaired (PS or Non-PS pollution)		
Heavy metal impaired (PS or Non-PS pollution)		
Pesticides or trace organics impaired (PS or Non-PS pollution)		
Bacteria and pathogens impaired (PS or Non-PS pollution)		
Trash or refuse		
Comments		

BIOTIC STRUCTURE ATTRIBUTE (WITHIN 50 M OF AA)	Present and likely to have negative effect on AA	Significant negative effect on AA
Mowing, grazing, excessive herbivory (within AA)		
Excessive human visitation		
Predation and habitat destruction by non-native vertebrates (e.g., <i>Virginia opossum</i> and domestic predators, such as feral pets)		
Tree cutting/sapling removal		
Removal of woody debris		
Treatment of non-native and nuisance plant species		
Pesticide application or vector control		
Biological resource extraction or stocking (fisheries, aquaculture)		
Excessive organic debris in matrix (for vernal pools)		
Lack of vegetation management to conserve natural resources		
Lack of treatment of invasive plants adjacent to AA or buffer		
Comments		

BUFFER AND LANDSCAPE CONTEXT ATTRIBUTE (WITHIN 500 M OF AA)	Present and likely to have negative effect on AA	Significant negative effect on AA
Urban residential	X	
Industrial/commercial		
Military training/Air traffic		
Dams (or other major flow regulation or disruption)		
Dryland farming		
Intensive row-crop agriculture		
Orchards/nurseries		
Commercial feedlots		
Dairies		
Ranching (enclosed livestock grazing or horse paddock or feedlot)		
Transportation corridor	X	
Rangeland (livestock rangeland also managed for native vegetation)		
Sports fields and urban parklands (golf courses, soccer fields, etc.)		
Passive recreation (bird-watching, hiking, etc.)		
Active recreation (off-road vehicles, mountain biking, hunting, fishing)		
Physical resource extraction (rock, sediment, oil/gas)		
Biological resource extraction (aquaculture, commercial fisheries)		
Comments		

Basic Information: Individual Vernal Pool

CRAM Site ID: Valadez					
Project Site ID: FB HST Mitigation Site					
Assessment Area Name: V303					
Project Name: FB HST Mitigation Site		Date (m/d/y)	5	17	12
Assessment Team Members for This AA					
G. Peracca					
E. Maroni					
A. Langston					
Wetland Category:					
<input checked="" type="checkbox"/> Natural <input type="checkbox"/> Constructed <input type="checkbox"/> Restoration (Rehabilitation OR Enhancement)					
If Created or Restored, does the action encompass:					
<input checked="" type="checkbox"/> entire wetland <input type="checkbox"/> portion of the wetland					
What best describes the hydrologic state of the wetland at the time of assessment?					
<input type="checkbox"/> ponded/inundated <input type="checkbox"/> saturated soil, but no surface water <input checked="" type="checkbox"/> dry					
What is the apparent hydrologic regime of the wetland?					
<input type="checkbox"/> long-duration <input type="checkbox"/> medium-duration <input checked="" type="checkbox"/> short-duration					
Does the vernal pool system connect with the floodplain of a nearby stream?					
<input type="checkbox"/> yes <input checked="" type="checkbox"/> no					
Photo Identification Numbers and Description:					
	Photo ID No.	Description	Latitude	Longitude	Datum
1	1295	North			
2	1294	South			
3	1297	East			
4	1296	West			
5					
6					
Comments:					

Scoring Sheet: Individual Vernal Pools

AA Name: V303			(m/d/y)	05/17/2012
Attributes and Metrics		Alpha.	Numeric	Comments
Buffer and Landscape Context				
(A) Aquatic Area Connectivity		D	3	Avg=2%
(B): Percent of AA with Buffer	Alpha.	Numeric		
	A	12		100% with buffer
(C): Average Buffer Width	A	12		Avg=250 m
(D): Buffer Condition	B	9		
Initial Attribute Score = $A + [D \times (B \times C)^{1/2}]^{1/2}$			13.4	Final Attribute Score = (Initial Score/24) x 100
				55.8
Hydrology				
Water Source		A	12	
Hydroperiod		A	12	
Hydrologic Connectivity		A	12	
Initial Attribute Score			36	Final Attribute Score = (Initial Score/36) x 100
				100
Physical Structure				
Structural Patch Richness		D	3	2 patch types
Topographic Complexity		C	6	
Initial Attribute Score			9	Final Attribute Score = (Initial Score/24) x 100
				37.5
Biotic Structure				
Horizontal Interspersion and Zonation		D	3	
Community composition submetric A: Number of Co-dominants	Alpha.	Numeric		
	C	6		3 co-dominant spp.
Community composition submetric B: Percent Non-native	B	9		33% non-native spp.
Community Composition submetric C: Endemic Species Richness	D	3		0 endemic spp.
Plant Community Composition Metric (numeric average of submetrics A-C)			6	
Initial Attribute Score			9	Final Attribute Score = (Initial Score/24) x 100
				37.5
Overall AA Score (Average of Final Attribute Scores)				57.7

Worksheet 8: Stressor Checklist.

HYDROLOGY ATTRIBUTE (WITHIN 50 M OF AA)	Present	Present and likely to have significant negative effect on AA
Point Source (PS) discharges (POTW, other non-stormwater discharge)		
Non-point Source (Non-PS) discharges (urban runoff, farm drainage)		
Flow diversions or unnatural inflows		
Dams (reservoirs, detention basins, recharge basins)		
Flow obstructions (culverts, paved stream crossings)		
Weir/drop structure, tide gates		
Dredged inlet/channel		
Engineered channel (riprap, armored channel bank, bed)		
Dike/levees		
Groundwater extraction		
Ditches (borrow, agricultural drainage, mosquito control, etc.)	X	
Actively managed hydrology		
Comments		

PHYSICAL STRUCTURE ATTRIBUTE (WITHIN 50 M OF AA)	Present	Present and likely to have significant negative effect on AA
Filling or dumping of sediment or soils (N/A for restoration areas)		
Grading/ compaction (N/A for restoration areas)		
Plowing/Discing (N/A for restoration areas)		
Resource extraction (sediment, gravel, oil and/or gas)		
Vegetation management		
Excessive sediment or organic debris from watershed		
Excessive runoff from watershed		
Nutrient impaired (PS or Non-PS pollution)		
Heavy metal impaired (PS or Non-PS pollution)		
Pesticides or trace organics impaired (PS or Non-PS pollution)		
Bacteria and pathogens impaired (PS or Non-PS pollution)		
Trash or refuse		
Comments		

BIOTIC STRUCTURE ATTRIBUTE (WITHIN 50 M OF AA)	Present	Present and Likely to Have Significant negative effect on AA
Mowing, grazing, excessive herbivory (within AA)		
Excessive human visitation		
Predation and habitat destruction by non-native vertebrates (e.g., <i>Virginia opossum</i> and domestic predators, such as feral pets)		
Tree cutting/sapling removal		
Removal of woody debris		
Treatment of non-native and nuisance plant species		
Pesticide application or vector control		
Biological resource extraction or stocking (fisheries, aquaculture)		
Excessive organic debris in matrix (for vernal pools)		
Lack of vegetation management to conserve natural resources		
Lack of treatment of invasive plants adjacent to AA or buffer		
Comments		

BUFFER AND LANDSCAPE CONTEXT ATTRIBUTE (WITHIN 500 M OF AA)	Present	Present and likely to have significant negative effect on AA
Urban residential	X	
Industrial/commercial		
Military training/Air traffic		
Dams (or other major flow regulation or disruption)		
Dryland farming		
Intensive row-crop agriculture		
Orchards/nurseries		
Commercial feedlots		
Dairies		
Ranching (enclosed livestock grazing or horse paddock or feedlot)		
Transportation corridor	X	X
Rangeland (livestock rangeland also managed for native vegetation)		
Sports fields and urban parklands (golf courses, soccer fields, etc.)		
Passive recreation (bird-watching, hiking, etc.)		
Active recreation (off-road vehicles, mountain biking, hunting, fishing)		
Physical resource extraction (rock, sediment, oil/gas)		
Biological resource extraction (aquaculture, commercial fisheries)		
Comments		

Basic Information: Vernal Pool Systems

CRAM Site ID: Yang Property (CMP)					
Project Site ID: Fresno to Bakersfield HST					
Assessment Area Name: VS300					
Project Name: Fresno to Bakersfield HST (CMP)		Date (m/d/y)	5	17	12
Assessment Team Members for This AA					
A. Langston		G. Peracca			
E. Maroni					
Wetland Category:					
<input checked="" type="checkbox"/> Natural <input type="checkbox"/> Constructed <input type="checkbox"/> Restoration (Rehabilitation OR Enhancement)					
If Created or Restored, does the action encompass:					
<input type="checkbox"/> entire wetland <input type="checkbox"/> portion of the wetland					
What best describes the hydrologic state of the wetland at the time of assessment?					
<input type="checkbox"/> ponded/inundated <input type="checkbox"/> saturated soil, but no surface water <input checked="" type="checkbox"/> dry					
What is the apparent hydrologic regime of the wetland?					
<input type="checkbox"/> long-duration <input type="checkbox"/> medium-duration <input checked="" type="checkbox"/> short-duration					
Does the vernal pool system connect with the floodplain of a nearby stream?					
<input type="checkbox"/> yes <input checked="" type="checkbox"/> no					
Photo Identification Numbers and Description:					
	Photo ID No.	Description	Latitude	Longitude	Datum
1	1267	North	35.80388N	119.39008W	
2	1268	South			
3	1269	East			
4	1270	West			
5					
6					
Comments:					

Scoring Sheet: Vernal Pool Systems

AA Name: VS300				(m/d/y)	05/19/2012	
Attributes and Metrics			Alpha.	Numeric	Comments/Scores	
Buffer and Landscape Context						
(A) Aquatic Area Connectivity			A	12	Avg=57.5%	
(B): Percent of AA with Buffer	Alpha.	Numeric				
	A	12				100% with buffer
(C): Average Buffer Width	A	12				Avg=196.9 meters
(D): Buffer Condition	B	9				
Initial Attribute Score = $A + [D \times (B \times C)^{1/2}]^{1/2}$				22.4	Final Attribute Score = (Initial Score/24) x 100	93.3
Hydrology						
Water Source			B	9		
Hydroperiod			A	12		
Hydrologic Connectivity			A	12		
Initial Attribute Score				33	Final Attribute Score = (Initial Score/36) x 100	91.7
Physical Structure						
Structural Patch Richness			C	6	7 patch types	
Pool and Swale Density			A	12	Avg=68.8 %	
Topographic Complexity			C	6		
Initial Attribute Score				24	Final Attribute Score = (Initial Score/36) x 100	66.7
Biotic Structure						
Plant Community submetric A: Number of Co-dominant species	Alpha.	Numeric				
	C	6				Avg = 3 co-dominant spp.
Plant Community submetric B: Percent Non Native	C	6				37.5% non-native spp.
Plant Community submetric C: Endemic Species Richness	D	3				0 endemic spp.
Plant Community Metric (average of submetrics A-C)				5		
Horizontal Interspersion and Zonation			B	9		
Initial Attribute Score				14	Final Attribute Score = (Initial Score/24) x 100	58.3
Overall AA Score (Average of Final Attribute Scores)					77.5	

Worksheet 9: Stressor Checklist.

HYDROLOGY ATTRIBUTE (WITHIN 50 M OF AA)	Present	Present and likely to have significant negative effect on AA
Point Source (PS) discharges (POTW, other non-stormwater discharge)		
Non-point Source (Non-PS) discharges (urban runoff, farm drainage)		
Flow diversions or unnatural inflows		
Dams (reservoirs, detention basins, recharge basins)		
Flow obstructions (culverts, paved stream crossings)		
Weir/drop structure, tide gates		
Dredged inlet/channel		
Engineered channel (riprap, armored channel bank, bed)		
Dike/levees		
Groundwater extraction		
Ditches (borrow, agricultural drainage, mosquito control, etc.)		
Actively managed hydrology		
Comments		
No Stressors.		

PHYSICAL STRUCTURE ATTRIBUTE (WITHIN 50 M OF AA)	Present	Present and likely to have significant negative effect on AA
Filling or dumping of sediment or soils (N/A for restoration areas)		
Grading/ compaction (N/A for restoration areas)		
Plowing/Discing (N/A for restoration areas)		
Resource extraction (sediment, gravel, oil and/or gas)		
Vegetation management		
Excessive sediment or organic debris from watershed		
Excessive runoff from watershed		
Nutrient impaired (PS or Non-PS pollution)		
Heavy metal impaired (PS or Non-PS pollution)		
Pesticides or trace organics impaired (PS or Non-PS pollution)		
Bacteria and pathogens impaired (PS or Non-PS pollution)		
Trash or refuse		
Comments		
No Stressors.		

BIOTIC STRUCTURE ATTRIBUTE (WITHIN 50 M OF AA)	Present	Present and Likely to Have Significant negative effect on AA
Mowing, grazing, excessive herbivory (within AA)		
Excessive human visitation		
Predation and habitat destruction by non-native vertebrates (e.g., <i>Virginia opossum</i> and domestic predators, such as feral pets)		
Tree cutting/sapling removal		
Removal of woody debris		
Treatment of non-native and nuisance plant species		
Pesticide application or vector control		
Biological resource extraction or stocking (fisheries, aquaculture)		
Excessive organic debris in matrix (for vernal pools)		
Lack of vegetation management to conserve natural resources		
Lack of treatment of invasive plants adjacent to AA or buffer		
Comments		
No Stressors.		

BUFFER AND LANDSCAPE CONTEXT ATTRIBUTE (WITHIN 500 M OF AA)	Present	Present and likely to have significant negative effect on AA
Urban residential		
Industrial/commercial		
Military training/Air traffic		
Dams (or other major flow regulation or disruption)		
Dryland farming		
Intensive row-crop agriculture		
Orchards/nurseries	X	X
Commercial feedlots		
Dairies		
Ranching (enclosed livestock grazing or horse paddock or feedlot)		
Transportation corridor		
Rangeland (livestock rangeland also managed for native vegetation)		
Sports fields and urban parklands (golf courses, soccer fields, etc.)		
Passive recreation (bird-watching, hiking, etc.)		
Active recreation (off-road vehicles, mountain biking, hunting, fishing)		
Physical resource extraction (rock, sediment, oil/gas)		
Biological resource extraction (aquaculture, commercial fisheries)		
Comments		
BNSF railroad corridor.		

Basic Information: Vernal Pool Systems

CRAM Site ID: Yang Property (CMP)						
Project Site ID: Fresno to Bakersfield HST						
Assessment Area Name: VS301						
Project Name: Fresno to Bakersfield HST (CMP)		Date (m/d/y)		5	15	12
Assessment Team Members for This AA						
A. Langston		G. Peracca				
E. Maroni						
Wetland Category:						
<input checked="" type="checkbox"/> Natural <input type="checkbox"/> Constructed <input type="checkbox"/> Restoration (Rehabilitation OR Enhancement)						
If Created or Restored, does the action encompass:						
<input type="checkbox"/> entire wetland <input type="checkbox"/> portion of the wetland						
What best describes the hydrologic state of the wetland at the time of assessment?						
<input type="checkbox"/> ponded/inundated <input type="checkbox"/> saturated soil, but no surface water <input checked="" type="checkbox"/> dry						
What is the apparent hydrologic regime of the wetland?						
<input type="checkbox"/> long-duration <input type="checkbox"/> medium-duration <input checked="" type="checkbox"/> short-duration						
Does the vernal pool system connect with the floodplain of a nearby stream?						
<input type="checkbox"/> yes <input checked="" type="checkbox"/> no						
Photo Identification Numbers and Description:						
	Photo ID No.	Description	Latitude	Longitude	Datum	
1	5653	North	35°48'01 N	119°23'25 W		
2	5657	South				
3	5656	East				
4	5654	West				
5						
6						
Comments:						

Scoring Sheet: Vernal Pool Systems

AA Name: VS301				(m/d/y)	05/15/2012	
Attributes and Metrics			Alpha.	Numeric	Comments/Scores	
Buffer and Landscape Context						
(A) Aquatic Area Connectivity			A	12	Avg= 92.9%	
(B): Percent of AA with Buffer	Alpha.	Numeric				
	A	12				100% with buffer
(C): Average Buffer Width	A	12				Avg= 250 meters
(D): Buffer Condition	B	9				
Initial Attribute Score = $A + [D \times (B \times C)^{1/2}]^{1/2}$				22.4	Final Attribute Score = (Initial Score/24) x 100	93.3
Hydrology						
Water Source			B	9		
Hydroperiod			A	12		
Hydrologic Connectivity			A	12		
Initial Attribute Score				33	Final Attribute Score = (Initial Score/36) x 100	91.7
Physical Structure						
Structural Patch Richness			C	6	7 patch types	
Pool and Swale Density			A	12	Avg= 52.5 %	
Topographic Complexity			A	12		
Initial Attribute Score				30	Final Attribute Score = (Initial Score/36) x 100	83.3
Biotic Structure						
Plant Community submetric A: Number of Co-dominant species	Alpha.	Numeric				
	B	9				Avg = 4.7 co-dominant spp.
Plant Community submetric B: Percent Non Native	D	3				50% non-native spp.
Plant Community submetric C: Endemic Species Richness	D	3				0 endemic spp.
Plant Community Metric (average of submetrics A-C)				5		
Horizontal Interspersion and Zonation			A	12		
Initial Attribute Score				17	Final Attribute Score = (Initial Score/24) x 100	70.8
Overall AA Score (Average of Final Attribute Scores)					84.8	

Worksheet 9: Stressor Checklist.

HYDROLOGY ATTRIBUTE (WITHIN 50 M OF AA)	Present	Present and likely to have significant negative effect on AA
Point Source (PS) discharges (POTW, other non-stormwater discharge)		
Non-point Source (Non-PS) discharges (urban runoff, farm drainage)		
Flow diversions or unnatural inflows		
Dams (reservoirs, detention basins, recharge basins)		
Flow obstructions (culverts, paved stream crossings)		
Weir/drop structure, tide gates		
Dredged inlet/channel		
Engineered channel (riprap, armored channel bank, bed)		
Dike/levees		
Groundwater extraction		
Ditches (borrow, agricultural drainage, mosquito control, etc.)		
Actively managed hydrology		
Comments		
No Stressors.		

PHYSICAL STRUCTURE ATTRIBUTE (WITHIN 50 M OF AA)	Present	Present and likely to have significant negative effect on AA
Filling or dumping of sediment or soils (N/A for restoration areas)		
Grading/ compaction (N/A for restoration areas)		
Plowing/Discing (N/A for restoration areas)		
Resource extraction (sediment, gravel, oil and/or gas)		
Vegetation management		
Excessive sediment or organic debris from watershed		
Excessive runoff from watershed		
Nutrient impaired (PS or Non-PS pollution)		
Heavy metal impaired (PS or Non-PS pollution)		
Pesticides or trace organics impaired (PS or Non-PS pollution)		
Bacteria and pathogens impaired (PS or Non-PS pollution)		
Trash or refuse		
Comments		
No Stressors.		

BIOTIC STRUCTURE ATTRIBUTE (WITHIN 50 M OF AA)	Present	Present and Likely to Have Significant negative effect on AA
Mowing, grazing, excessive herbivory (within AA)		
Excessive human visitation		
Predation and habitat destruction by non-native vertebrates (e.g., <i>Virginia opossum</i> and domestic predators, such as feral pets)		
Tree cutting/sapling removal		
Removal of woody debris		
Treatment of non-native and nuisance plant species		
Pesticide application or vector control		
Biological resource extraction or stocking (fisheries, aquaculture)		
Excessive organic debris in matrix (for vernal pools)		
Lack of vegetation management to conserve natural resources		
Lack of treatment of invasive plants adjacent to AA or buffer		
Comments		
No Stressors.		

BUFFER AND LANDSCAPE CONTEXT ATTRIBUTE (WITHIN 500 M OF AA)	Present	Present and likely to have significant negative effect on AA
Urban residential		
Industrial/commercial		
Military training/Air traffic		
Dams (or other major flow regulation or disruption)		
Dryland farming		
Intensive row-crop agriculture		
Orchards/nurseries	X	X
Commercial feedlots		
Dairies		
Ranching (enclosed livestock grazing or horse paddock or feedlot)		
Transportation corridor		
Rangeland (livestock rangeland also managed for native vegetation)		
Sports fields and urban parklands (golf courses, soccer fields, etc.)		
Passive recreation (bird-watching, hiking, etc.)		
Active recreation (off-road vehicles, mountain biking, hunting, fishing)		
Physical resource extraction (rock, sediment, oil/gas)		
Biological resource extraction (aquaculture, commercial fisheries)		
Comments		

Basic Information: Vernal Pool Systems

CRAM Site ID: Yang Property (CMP)					
Project Site ID: Fresno to Bakersfield HST					
Assessment Area Name: VS303					
Project Name: Fresno to Bakersfield HST (CMP)	Date (m/d/y)	5	15	12	
Assessment Team Members for This AA					
A. Langston		G. Peracca			
E. Maroni					
Wetland Category:					
<input checked="" type="checkbox"/> Natural <input type="checkbox"/> Constructed <input type="checkbox"/> Restoration (Rehabilitation OR Enhancement)					
If Created or Restored, does the action encompass:					
<input type="checkbox"/> entire wetland <input type="checkbox"/> portion of the wetland					
What best describes the hydrologic state of the wetland at the time of assessment?					
<input type="checkbox"/> ponded/inundated <input type="checkbox"/> saturated soil, but no surface water <input checked="" type="checkbox"/> dry					
What is the apparent hydrologic regime of the wetland?					
<input type="checkbox"/> long-duration <input type="checkbox"/> medium-duration <input checked="" type="checkbox"/> short-duration					
Does the vernal pool system connect with the floodplain of a nearby stream?					
<input type="checkbox"/> yes <input checked="" type="checkbox"/> no					
Photo Identification Numbers and Description:					
	Photo ID No.	Description	Latitude	Longitude	Datum
1	5651	North			
2	5649	South			
3	5652	East			
4	5650	West			
5					
6					
Comments:					

Scoring Sheet: Vernal Pool Systems

AA Name: VS303				(m/d/y)	05/15/2012	
Attributes and Metrics			Alpha.	Numeric	Comments/Scores	
Buffer and Landscape Context						
(A) Aquatic Area Connectivity			A	12	Avg= 95%	
(B): Percent of AA with Buffer	Alpha.	Numeric				
	A	12				100% with buffer
(C): Average Buffer Width	A	12				Avg= 250 meters
(D): Buffer Condition	B	9				
Initial Attribute Score = $A + [D \times (B \times C)^{1/2}]^{1/2}$				22.4	Final Attribute Score = (Initial Score/24) x 100	93.3
Hydrology						
Water Source			B	9		
Hydroperiod			A	12		
Hydrologic Connectivity			A	12		
Initial Attribute Score				33	Final Attribute Score = (Initial Score/36) x 100	91.7
Physical Structure						
Structural Patch Richness			B	9	9 patch types	
Pool and Swale Density			A	12	Avg= 76.3 %	
Topographic Complexity			C	6		
Initial Attribute Score				27	Final Attribute Score = (Initial Score/36) x 100	75.0
Biotic Structure						
Plant Community submetric A: Number of Co-dominant species	Alpha.	Numeric				
	B	9				Avg = 4 co-dominant spp.
Plant Community submetric B: Percent Non Native	C	6				43% non-native spp.
Plant Community submetric C: Endemic Species Richness	D	3				0 endemic spp.
Plant Community Metric (average of submetrics A-C)				6		
Horizontal Interspersion and Zonation			B	9		
Initial Attribute Score				15	Final Attribute Score = (Initial Score/24) x 100	62.5
Overall AA Score (Average of Final Attribute Scores)					80.6	

Worksheet 9: Stressor Checklist.

HYDROLOGY ATTRIBUTE (WITHIN 50 M OF AA)	Present	Present and likely to have significant negative effect on AA
Point Source (PS) discharges (POTW, other non-stormwater discharge)		
Non-point Source (Non-PS) discharges (urban runoff, farm drainage)		
Flow diversions or unnatural inflows		
Dams (reservoirs, detention basins, recharge basins)		
Flow obstructions (culverts, paved stream crossings)		
Weir/drop structure, tide gates		
Dredged inlet/channel		
Engineered channel (riprap, armored channel bank, bed)		
Dike/levees		
Groundwater extraction		
Ditches (borrow, agricultural drainage, mosquito control, etc.)		
Actively managed hydrology		
Comments		
No Stressors.		

PHYSICAL STRUCTURE ATTRIBUTE (WITHIN 50 M OF AA)	Present	Present and likely to have significant negative effect on AA
Filling or dumping of sediment or soils (N/A for restoration areas)		
Grading/ compaction (N/A for restoration areas)		
Plowing/Discing (N/A for restoration areas)		
Resource extraction (sediment, gravel, oil and/or gas)		
Vegetation management		
Excessive sediment or organic debris from watershed		
Excessive runoff from watershed		
Nutrient impaired (PS or Non-PS pollution)		
Heavy metal impaired (PS or Non-PS pollution)		
Pesticides or trace organics impaired (PS or Non-PS pollution)		
Bacteria and pathogens impaired (PS or Non-PS pollution)		
Trash or refuse		
Comments		
No Stressors.		

BIOTIC STRUCTURE ATTRIBUTE (WITHIN 50 M OF AA)	Present	Present and Likely to Have Significant negative effect on AA
Mowing, grazing, excessive herbivory (within AA)		
Excessive human visitation		
Predation and habitat destruction by non-native vertebrates (e.g., <i>Virginia opossum</i> and domestic predators, such as feral pets)		
Tree cutting/sapling removal		
Removal of woody debris		
Treatment of non-native and nuisance plant species		
Pesticide application or vector control		
Biological resource extraction or stocking (fisheries, aquaculture)		
Excessive organic debris in matrix (for vernal pools)		
Lack of vegetation management to conserve natural resources		
Lack of treatment of invasive plants adjacent to AA or buffer		
Comments		
No Stressors.		

BUFFER AND LANDSCAPE CONTEXT ATTRIBUTE (WITHIN 500 M OF AA)	Present	Present and likely to have significant negative effect on AA
Urban residential		
Industrial/commercial		
Military training/Air traffic		
Dams (or other major flow regulation or disruption)		
Dryland farming		
Intensive row-crop agriculture		
Orchards/nurseries		
Commercial feedlots		
Dairies		
Ranching (enclosed livestock grazing or horse paddock or feedlot)		
Transportation corridor		
Rangeland (livestock rangeland also managed for native vegetation)		
Sports fields and urban parklands (golf courses, soccer fields, etc.)		
Passive recreation (bird-watching, hiking, etc.)		
Active recreation (off-road vehicles, mountain biking, hunting, fishing)		
Physical resource extraction (rock, sediment, oil/gas)		
Biological resource extraction (aquaculture, commercial fisheries)		
Comments		
No Stressors.		

Basic Information Sheet: Riverine Wetlands

CRAM Site ID: Clark River Ranch			
Project Site ID: FB HST CMP			
Assessment Area Name: R401			
Project Name: FB HST Mitigation	Date (m/d/y)	01	03 13
Assessment Team Members for This AA:			
A. Langston			
T. Lim			
Average Bankfull Width: 33 m			
Approximate Length of AA (10 times bankfull width, min 100 m, max 200 m): 200 m			
Upstream Point Latitude:		Longitude:	
Downstream Point Latitude:		Longitude:	
Wetland Sub-type:			
<input checked="" type="checkbox"/> Confined <input type="checkbox"/> Non-confined			
AA Category:			
<input type="checkbox"/> Restoration <input type="checkbox"/> Mitigation <input type="checkbox"/> Impacted <input checked="" type="checkbox"/> Ambient <input checked="" type="checkbox"/> Reference <input type="checkbox"/> Training			
<input type="checkbox"/> Other:			
Did the river/stream have flowing water at the time of the assessment? <input type="checkbox"/> yes <input checked="" type="checkbox"/> no			
What is the apparent hydrologic flow regime of the reach you are assessing?			
<p>The hydrologic flow regime of a stream describes the frequency with which the channel conducts water. <i>Perennial</i> streams conduct water all year long, whereas <i>ephemeral</i> streams conduct water only during and immediately following precipitation events. <i>Intermittent</i> streams are dry for part of the year, but conduct water for periods longer than ephemeral streams, as a function of watershed size and water source.</p>			
<input checked="" type="checkbox"/> perennial <input type="checkbox"/> intermittent <input type="checkbox"/> ephemeral			

Photo Identification Numbers and Description:

	Photo ID No.	Description	Latitude	Longitude	Datum
1	1977	Upstream			
2	1973, 1974	Middle Left			
3	1975, 1976	Middle Right			
4	1972	Downstream			
5					
6					
7					
8					
9					
10					

Site Location Description:

Clarks Fork Kings River

Comments:

Scoring Sheet: Riverine Wetlands

AA Name: R401				(m/d/y)	01	03	13		
Attribute 1: Buffer and Landscape Context				Comments					
Aquatic Area Abundance Score (D)			Alpha.	Numeric	100m total non-buffer				
			A	12					
Buffer:									
<i>Buffer submetric A: Percent of AA with Buffer</i>		Alpha.	Numeric					100% with buffer	
		A	12						
<i>Buffer submetric B: Average Buffer Width</i>		D	3					Average = 19.6 meters	
<i>Buffer submetric C: Buffer Condition</i>		C	6					Buffer is road berm	
Raw Attribute Score = $D + [C \times (A \times B)^{1/2}]^{1/2}$ (use numerical value to nearest whole integer)				18		Final Attribute Score = (Raw Score/24) x 100		75.0	
Attribute 2: Hydrology									
Water Source			Alpha.	Numeric	>20% drainage basin is agricultural				
			C	6					
Channel Stability			B	9					
Hydrologic Connectivity			B	9	Average = 1.63 meters				
Raw Attribute Score = sum of numeric scores				24		Final Attribute Score = (Raw Score/36) x 100		66.7	
Attribute 3: Physical Structure									
Structural Patch Richness			Alpha.	Numeric	0 patch types				
			D	3					
Topographic Complexity			C	6					
Raw Attribute Score = sum of numeric scores				9		Final Attribute Score = (Raw Score/24) x 100		37.5	
Attribute 4: Biotic Structure									
Plant Community Composition (based on sub-metrics A-C)									
<i>Plant Community submetric A: Number of plant layers</i>		Alpha.	Numeric						
		B	9					3 layers	
<i>Plant Community submetric B: Number of Co-dominant species</i>		C	6	6 co-dominant spp.					
<i>Plant Community submetric C: Percent Invasion</i>		B	9	17% invasive spp.					
Plant Community Composition (average of submetrics A-C rounded to nearest whole integer)				8					
Horizontal Interspersion			C	6					
Vertical Biotic Structure			C	6					
Raw Attribute Score = sum of numeric scores				20		Final Attribute Score = (Raw Score/36) x 100		55.6	
Overall AA Score (average of four final Attribute Scores)				58.7					

Stressor Checklist Worksheet

HYDROLOGY ATTRIBUTE (WITHIN 50 M OF AA)	Present	Significant negative effect on AA
Point Source (PS) discharges (POTW, other non-stormwater discharge)		
Non-point Source (Non-PS) discharges (urban runoff, farm drainage)		
Flow diversions or unnatural inflows		
Dams (reservoirs, detention basins, recharge basins)		
Flow obstructions (culverts, paved stream crossings)		
Weir/drop structure, tide gates		
Dredged inlet/channel		
Engineered channel (riprap, armored channel bank, bed)		
Dike/levees	X	X
Groundwater extraction		
Ditches (borrow, agricultural drainage, mosquito control, etc.)		
Actively managed hydrology	X	X
Comments		

PHYSICAL STRUCTURE ATTRIBUTE (WITHIN 50 M OF AA)	Present	Significant negative effect on AA
Filling or dumping of sediment or soils (N/A for restoration areas)		
Grading/ compaction (N/A for restoration areas)	X	
Plowing/Discing (N/A for restoration areas)	X	X
Resource extraction (sediment, gravel, oil and/or gas)		
Vegetation management		
Excessive sediment or organic debris from watershed	X	X
Excessive runoff from watershed		
Nutrient impaired (PS or Non-PS pollution)		
Heavy metal impaired (PS or Non-PS pollution)		
Pesticides or trace organics impaired (PS or Non-PS pollution)		
Bacteria and pathogens impaired (PS or Non-PS pollution)		
Trash or refuse		
Comments		

BIOTIC STRUCTURE ATTRIBUTE (WITHIN 50 M OF AA)	Present	Significant negative effect on AA
Mowing, grazing, excessive herbivory (within AA)		
Excessive human visitation		
Predation and habitat destruction by non-native vertebrates (e.g., <i>Virginia opossum</i> and domestic predators, such as feral pets)		
Tree cutting/sapling removal		
Removal of woody debris		
Treatment of non-native and nuisance plant species		
Pesticide application or vector control		
Biological resource extraction or stocking (fisheries, aquaculture)		
Excessive organic debris in matrix (for vernal pools)		
Lack of vegetation management to conserve natural resources		
Lack of treatment of invasive plants adjacent to AA or buffer		
Comments		

BUFFER AND LANDSCAPE CONTEXT ATTRIBUTE (WITHIN 500 M OF AA)	Present	Significant negative effect on AA
Urban residential		
Industrial/commercial		
Military training/Air traffic		
Dams (or other major flow regulation or disruption)		
Dryland farming		
Intensive row-crop agriculture	X	X
Orchards/nurseries	X	X
Commercial feedlots		
Dairies		
Ranching (enclosed livestock grazing or horse paddock or feedlot)		
Transportation corridor		
Rangeland (livestock rangeland also managed for native vegetation)		
Sports fields and urban parklands (golf courses, soccer fields, etc.)		
Passive recreation (bird-watching, hiking, etc.)		
Active recreation (off-road vehicles, mountain biking, hunting, fishing)		
Physical resource extraction (rock, sediment, oil/gas)		
Biological resource extraction (aquaculture, commercial fisheries)		
Comments		

Basic Information Sheet: Riverine Wetlands

CRAM Site ID: Clark River Ranch			
Project Site ID: FB HST CMP			
Assessment Area Name: R402			
Project Name: FB HST Mitigation	Date (m/d/y)	01	04 13
Assessment Team Members for This AA:			
A. Langston			
T. Lim			
Average Bankfull Width: 31 m			
Approximate Length of AA (10 times bankfull width, min 100 m, max 200 m): 200 m			
Upstream Point Latitude:		Longitude:	
Downstream Point Latitude:		Longitude:	
Wetland Sub-type:			
<input checked="" type="checkbox"/> Confined <input type="checkbox"/> Non-confined			
AA Category:			
<input type="checkbox"/> Restoration <input type="checkbox"/> Mitigation <input type="checkbox"/> Impacted <input checked="" type="checkbox"/> Ambient <input checked="" type="checkbox"/> Reference <input type="checkbox"/> Training			
<input type="checkbox"/> Other:			
Did the river/stream have flowing water at the time of the assessment? <input type="checkbox"/> yes <input checked="" type="checkbox"/> no			
What is the apparent hydrologic flow regime of the reach you are assessing?			
<p>The hydrologic flow regime of a stream describes the frequency with which the channel conducts water. <i>Perennial</i> streams conduct water all year long, whereas <i>ephemeral</i> streams conduct water only during and immediately following precipitation events. <i>Intermittent</i> streams are dry for part of the year, but conduct water for periods longer than ephemeral streams, as a function of watershed size and water source.</p>			
<input checked="" type="checkbox"/> perennial <input type="checkbox"/> intermittent <input type="checkbox"/> ephemeral			

Photo Identification Numbers and Description:

	Photo ID No.	Description	Latitude	Longitude	Datum
1	1996	Upstream			
2	1994	Middle Left			
3	1995	Middle Right			
4	1993	Downstream			
5					
6					
7					
8					
9					
10					

Site Location Description:

"Island" area of River Ranch.

Comments:

1-sided AA due to presence of water and steep banks.

Additional photos: 1997-2001

Scoring Sheet: Riverine Wetlands

AA Name: R402				(m/d/y)	01	04	13
Attribute 1: Buffer and Landscape Context				Comments			
Aquatic Area Abundance Score (D)			Alpha.	Numeric	100m total non-buffer (1-sided)		
			B	9			
Buffer:							
<i>Buffer submetric A: Percent of AA with Buffer</i>		Alpha.	Numeric	100% with buffer			
		A	12				
<i>Buffer submetric B: Average Buffer Width</i>		D	3	Average = 7 meters			
		<i>Buffer submetric C: Buffer Condition</i>		C	6	Buffer is road berm	
Raw Attribute Score = $D + [C \times (A \times B)^{1/2}]^{1/2}$ (use numerical value to nearest whole integer)				15	Final Attribute Score = (Raw Score/24) x 100		62.5
Attribute 2: Hydrology							
Water Source			Alpha.	Numeric	>20% drainage basin is agricultural		
			C	6			
Channel Stability			B	9			
Hydrologic Connectivity			C	6	Average = 1.54 meters		
Raw Attribute Score = sum of numeric scores				21	Final Attribute Score = (Raw Score/36) x 100		58.3
Attribute 3: Physical Structure							
Structural Patch Richness			Alpha.	Numeric	5 patch types		
			C	6			
Topographic Complexity			C	6			
Raw Attribute Score = sum of numeric scores				12	Final Attribute Score = (Raw Score/24) x 100		50.0
Attribute 4: Biotic Structure							
Plant Community Composition (based on sub-metrics A-C)							
<i>Plant Community submetric A: Number of plant layers</i>		Alpha.	Numeric	3 layers			
		B	9				
<i>Plant Community submetric B: Number of Co-dominant species</i>		C	6	5 co-dominant spp.			
		<i>Plant Community submetric C: Percent Invasion</i>		B	9	20% invasive spp.	
Plant Community Composition (average of submetrics A-C rounded to nearest whole integer)				8			
Horizontal Interspersion			B	9			
Vertical Biotic Structure			B	9			
Raw Attribute Score = sum of numeric scores				26	Final Attribute Score = (Raw Score/36) x 100		72.2
Overall AA Score (average of four final Attribute Scores)				60.8			

Stressor Checklist Worksheet

HYDROLOGY ATTRIBUTE (WITHIN 50 M OF AA)	Present	Significant negative effect on AA
Point Source (PS) discharges (POTW, other non-stormwater discharge)		
Non-point Source (Non-PS) discharges (urban runoff, farm drainage)		
Flow diversions or unnatural inflows	X	X
Dams (reservoirs, detention basins, recharge basins)		
Flow obstructions (culverts, paved stream crossings)		
Weir/drop structure, tide gates		
Dredged inlet/channel		
Engineered channel (riprap, armored channel bank, bed)		
Dike/levees	X	X
Groundwater extraction		
Ditches (borrow, agricultural drainage, mosquito control, etc.)		
Actively managed hydrology	X	X
Comments		

PHYSICAL STRUCTURE ATTRIBUTE (WITHIN 50 M OF AA)	Present	Significant negative effect on AA
Filling or dumping of sediment or soils (N/A for restoration areas)		
Grading/ compaction (N/A for restoration areas)	X	X
Plowing/Discing (N/A for restoration areas)	X	X
Resource extraction (sediment, gravel, oil and/or gas)		
Vegetation management		
Excessive sediment or organic debris from watershed	X	X
Excessive runoff from watershed		
Nutrient impaired (PS or Non-PS pollution)		
Heavy metal impaired (PS or Non-PS pollution)		
Pesticides or trace organics impaired (PS or Non-PS pollution)		
Bacteria and pathogens impaired (PS or Non-PS pollution)		
Trash or refuse		
Comments		

BIOTIC STRUCTURE ATTRIBUTE (WITHIN 50 M OF AA)	Present	Significant negative effect on AA
Mowing, grazing, excessive herbivory (within AA)		
Excessive human visitation		
Predation and habitat destruction by non-native vertebrates (e.g., <i>Virginia opossum</i> and domestic predators, such as feral pets)		
Tree cutting/sapling removal		
Removal of woody debris		
Treatment of non-native and nuisance plant species		
Pesticide application or vector control		
Biological resource extraction or stocking (fisheries, aquaculture)		
Excessive organic debris in matrix (for vernal pools)		
Lack of vegetation management to conserve natural resources		
Lack of treatment of invasive plants adjacent to AA or buffer		
Comments		

BUFFER AND LANDSCAPE CONTEXT ATTRIBUTE (WITHIN 500 M OF AA)	Present	Significant negative effect on AA
Urban residential		
Industrial/commercial		
Military training/Air traffic		
Dams (or other major flow regulation or disruption)	X	X
Dryland farming		
Intensive row-crop agriculture	X	X
Orchards/nurseries	X	X
Commercial feedlots		
Dairies		
Ranching (enclosed livestock grazing or horse paddock or feedlot)		
Transportation corridor		
Rangeland (livestock rangeland also managed for native vegetation)		
Sports fields and urban parklands (golf courses, soccer fields, etc.)		
Passive recreation (bird-watching, hiking, etc.)		
Active recreation (off-road vehicles, mountain biking, hunting, fishing)		
Physical resource extraction (rock, sediment, oil/gas)		
Biological resource extraction (aquaculture, commercial fisheries)		
Comments		

Appendix D
Photographs of Representative
Assessment Areas

Appendix D
Photographs of Representative
Assessment Areas

Assessment Area D147



North

South



Northwest

Southwest

Assessment Area D203



North



South



East



West

Assessment Area D204



North



South



East



West

Assessment Area D205



North



South



East



West

Assessment Area D206



North

South



East

West

Assessment Area D212



North

South



East

West

Assessment Area D213



North



South



East



West

Assessment Area D214



North

South



East

West

Assessment Area R8



Northeast



Southeast

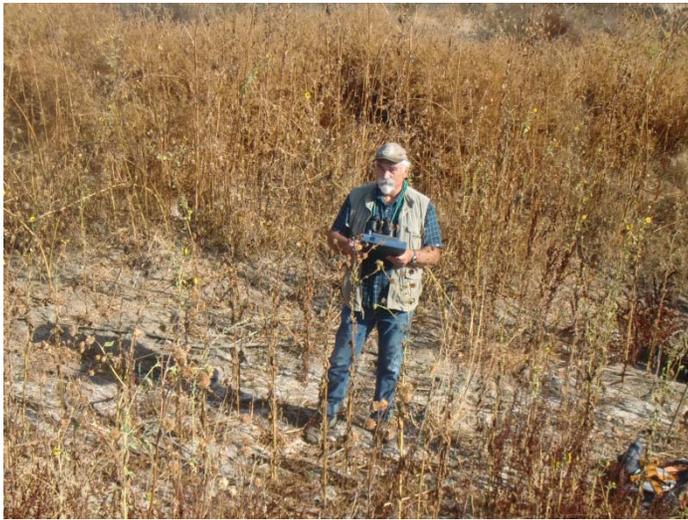


Northwest



Southwest

Assessment Area R63A



North

South



East

West

Assessment Area R66



North



South



East



West

Assessment Area R71A



North



South



East



West

Assessment Area R146



North

South



N/A

East

West

Assessment Area R149



Northeast

Southeast



Northwest

Southwest

Assessment Area 150



Northeast



Southeast



Northwest



Southwest

Assessment Area R157A



N/A

North

South



East

West

Assessment Area R160

N/A	N/A
-----	-----

North

South



East

West

Assessment Area R203



Northeast

Southeast



Northwest

Southwest

Assessment Area R205



Northwest

Southeast



Northwest

Southwest

Assessment Area R208



Northeast

Southeast



Northwest

Southwest

Assessment Area R209

N/A	N/A
-----	-----

North

South



East

West

Assessment Area R211



Northeast

Southeast

N/A	N/A
-----	-----

Northwest

Southwest

Assessment Area R212



Northeast

Southeast



Northwest

Southwest

Assessment Area R213



Northeast

Southeast



Northwest

Southwest

Assessment Area R220



Northeast

Southeast



Northwest

Southwest

Assessment Area V62A



North



South



East



West

Assessment Area V65



North



South



East



West

Assessment Area V70



North



South



East



West

Assessment Area V72



North

South



East

West

Assessment Area V74



North



South



East



West

Assessment Area V75



North



South



East



West

Assessment Area V76A



North



South



East



West

Assessment Area V76D



North

South



East

West

Assessment Area V104



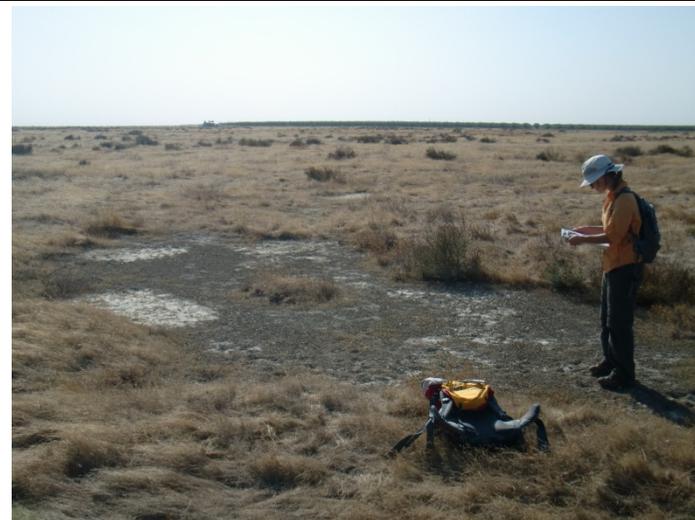
North



South

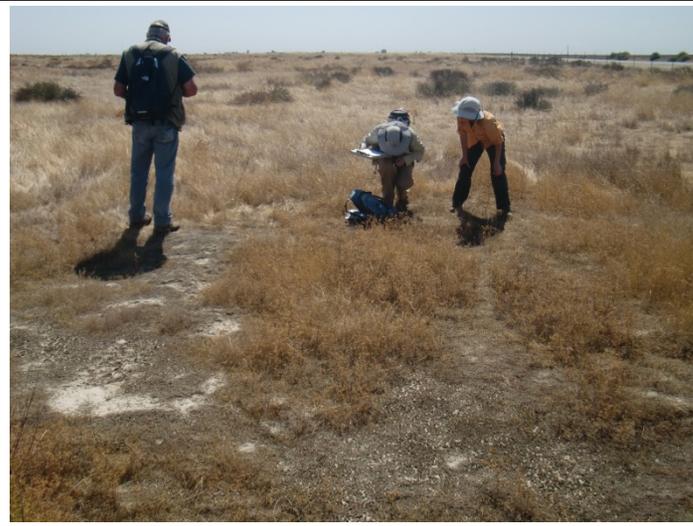
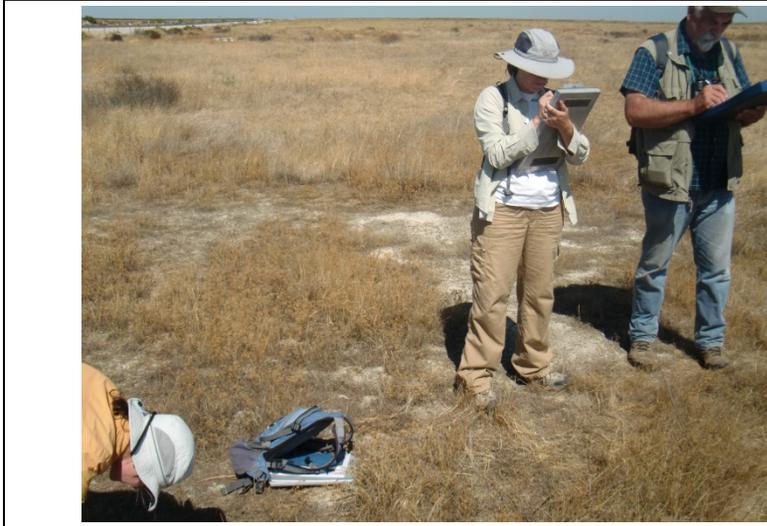


East



West

Assessment Area V114



North

South



East

West

Assessment Area V115A



North



South



East



West

Assessment Area VS97A



North



South



East



West

Assessment Area VS99A



North

South



East

West

Assessment Area VS104A



North



South



East



West

Assessment Area VS107A



North

South



East

West

Assessment Area VS112



North

South



East

West

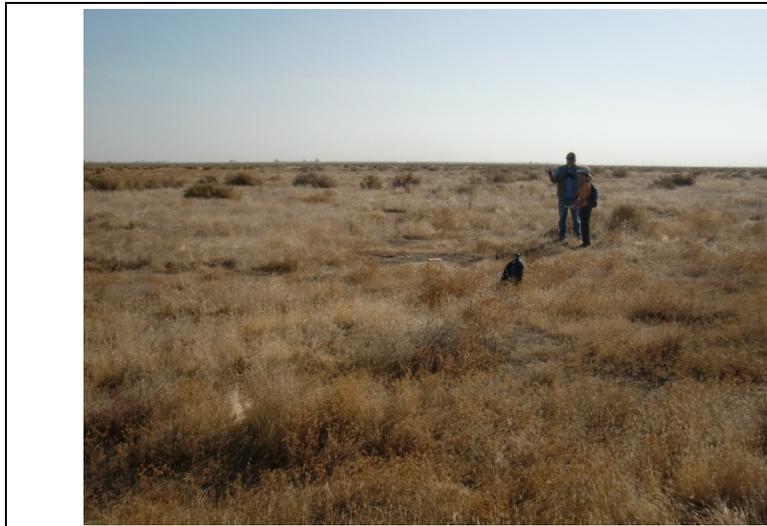
Assessment Area VS114A



North



South



East



West

Buena Vista Dairy D304



North



South



East



West

Buena Vista Dairy D305



North

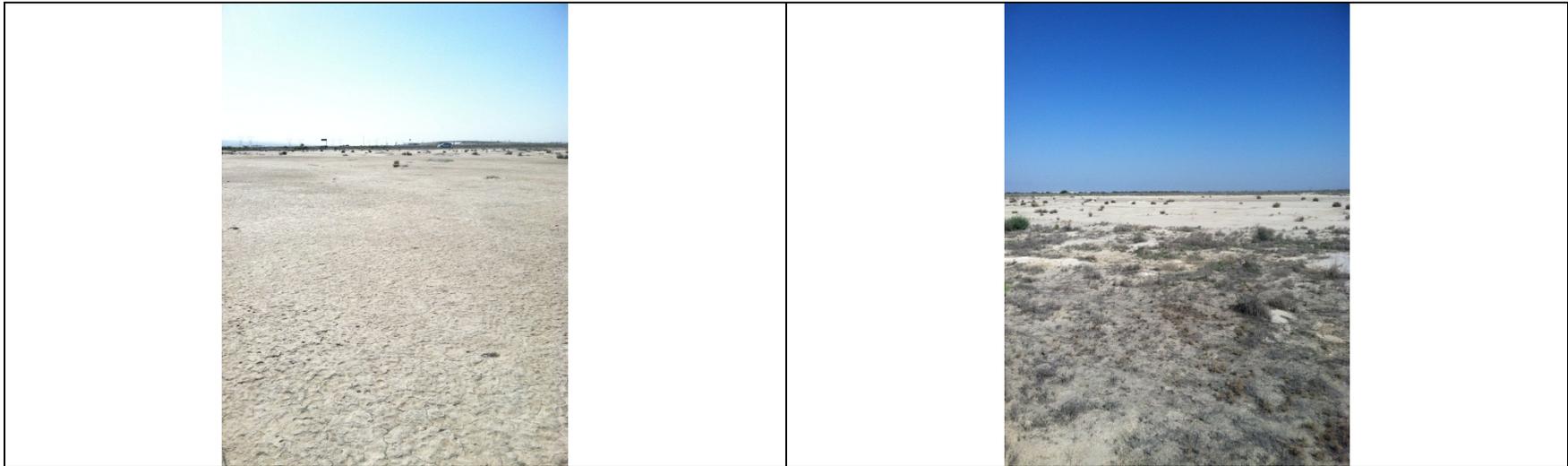
South



East

West

Buena Vista Dairy V305



North

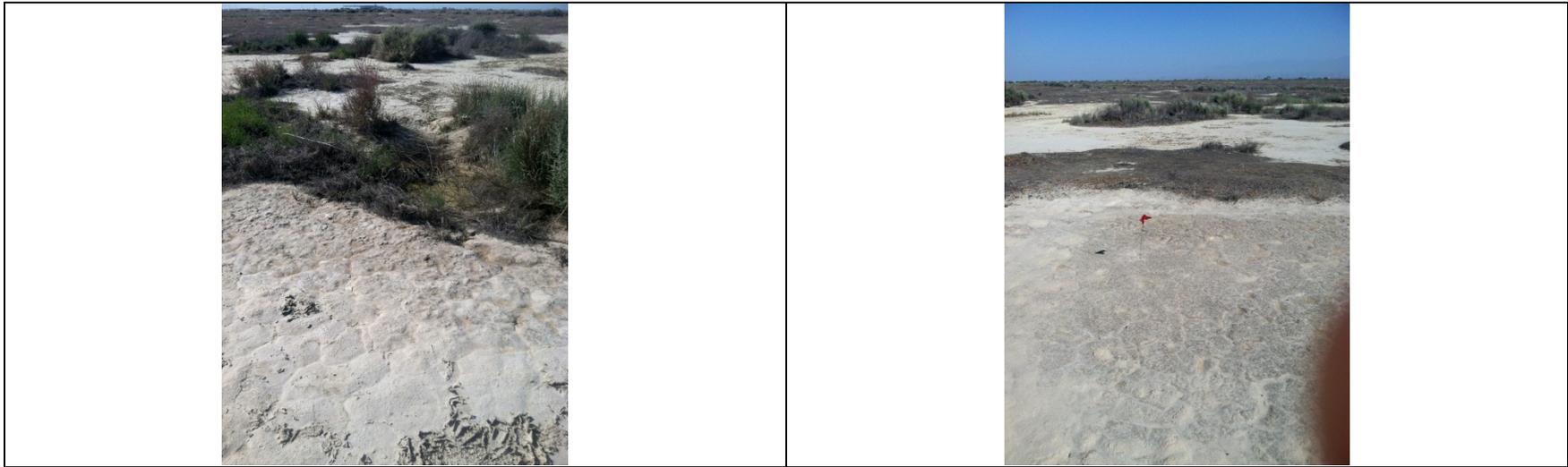
South



East

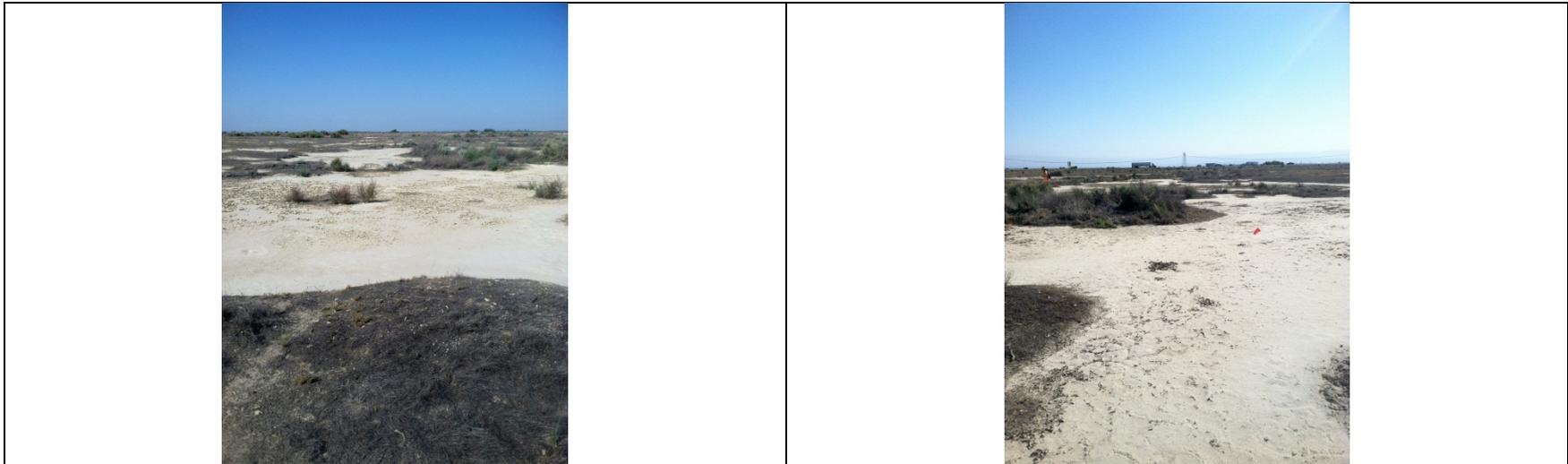
West

Buena Vista Dairy VS305



North

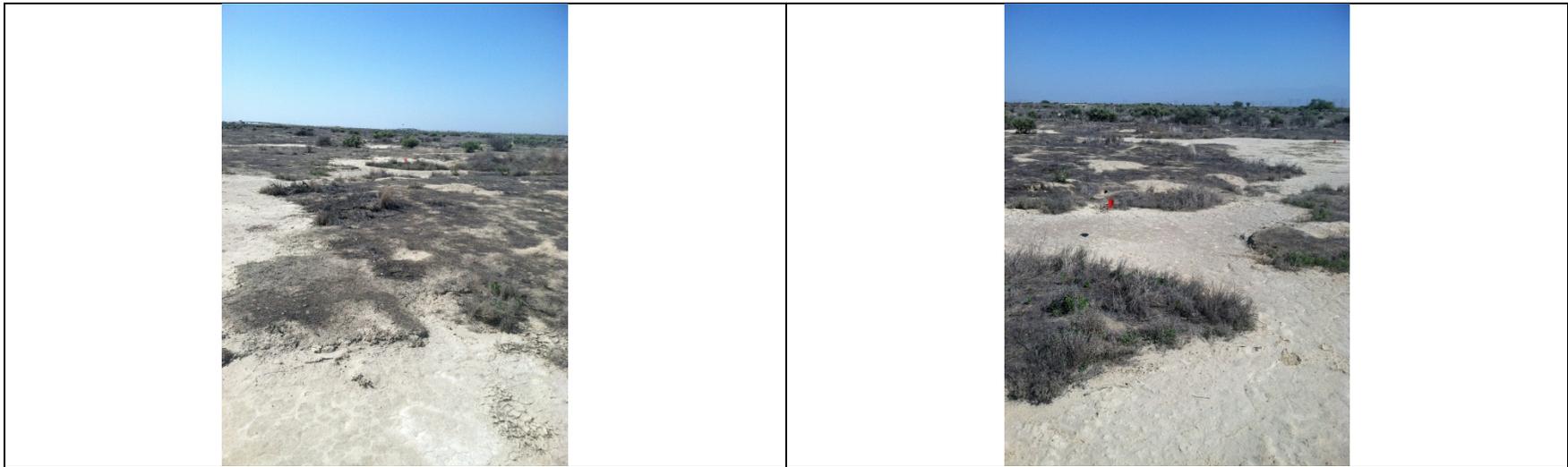
South



East

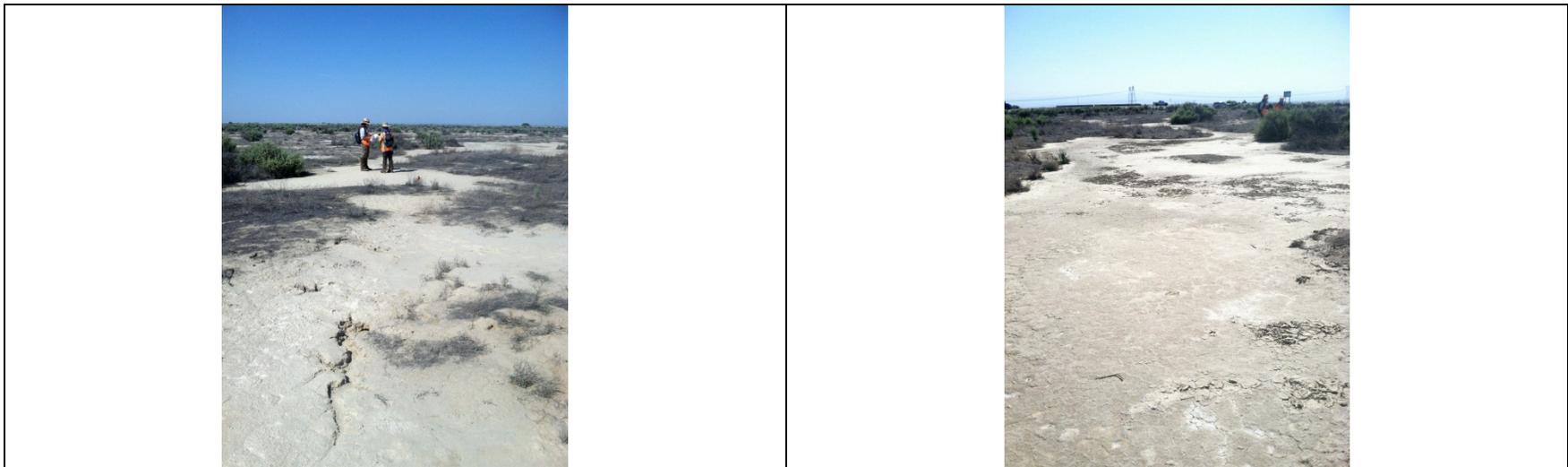
West

Buena Vista Dairy VS307



North

South



East

West

Davis D301



North

South



East

West

Davis D301A



North

South



East

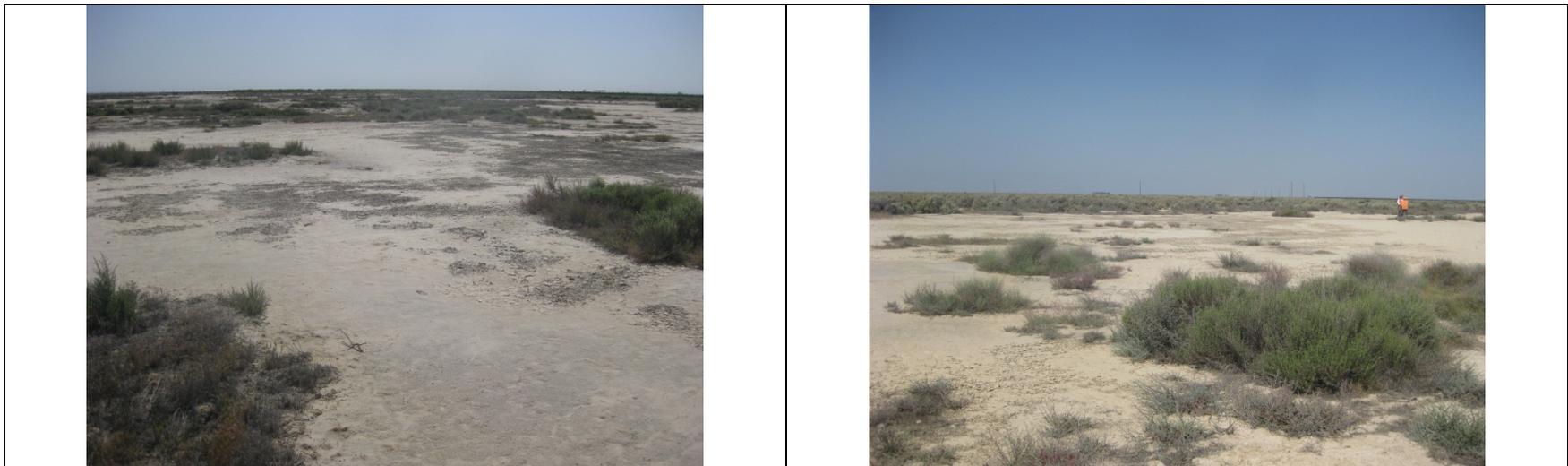
West

Staffel V301



North

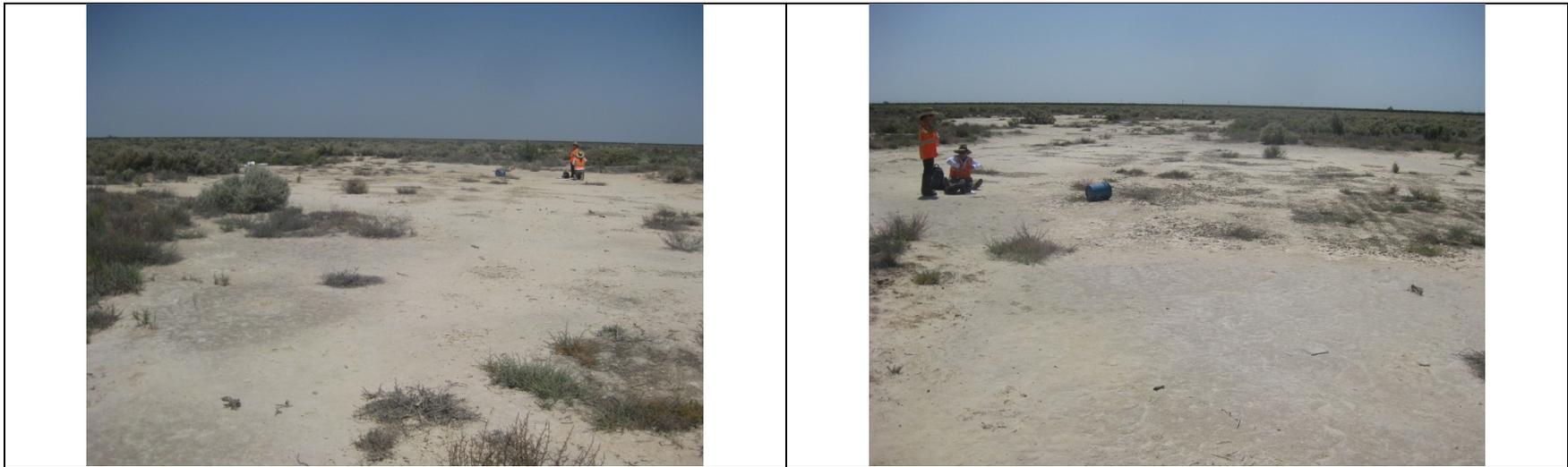
South



East

West

Staffel V302



North

South



East

West

Te Velde R300



Upstream



Middle Left



Middle Right



Downstream

Te Velde R302



Upstream



Middle Left



Middle Right



Downstream

Valadez D303



North

South



East

West

Valadez V303



North

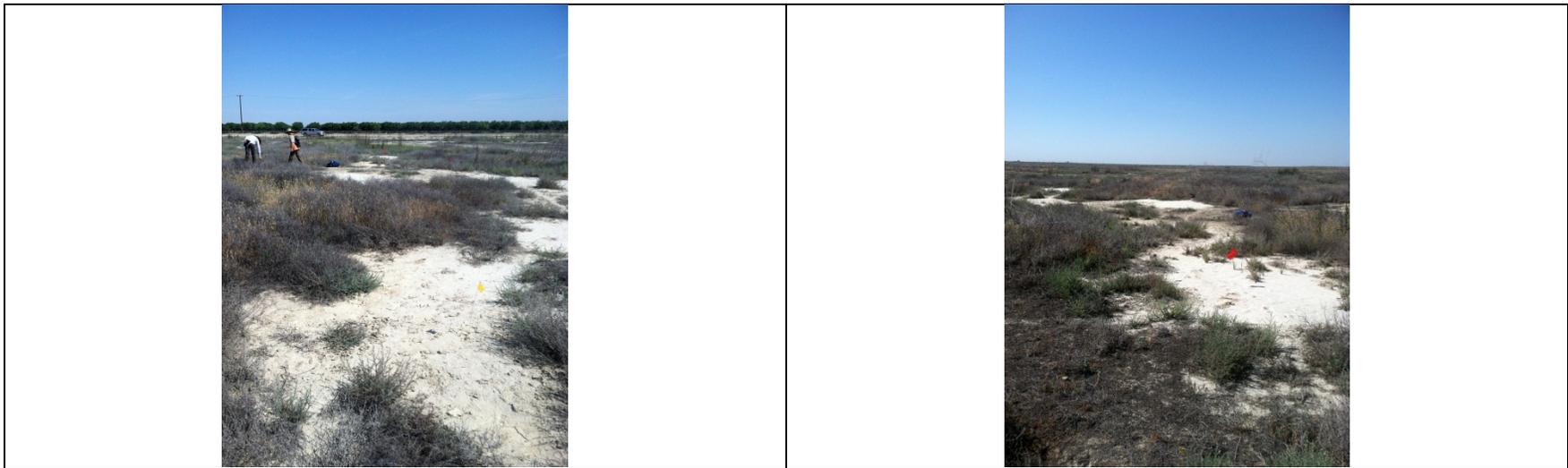
South



East

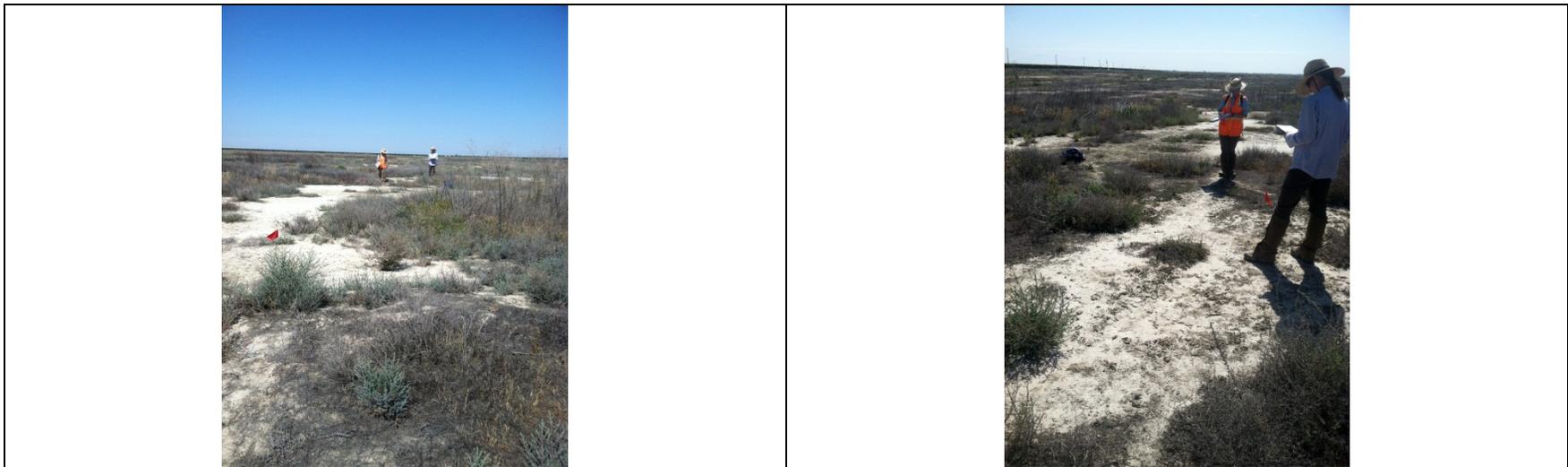
West

Yang VS300



North

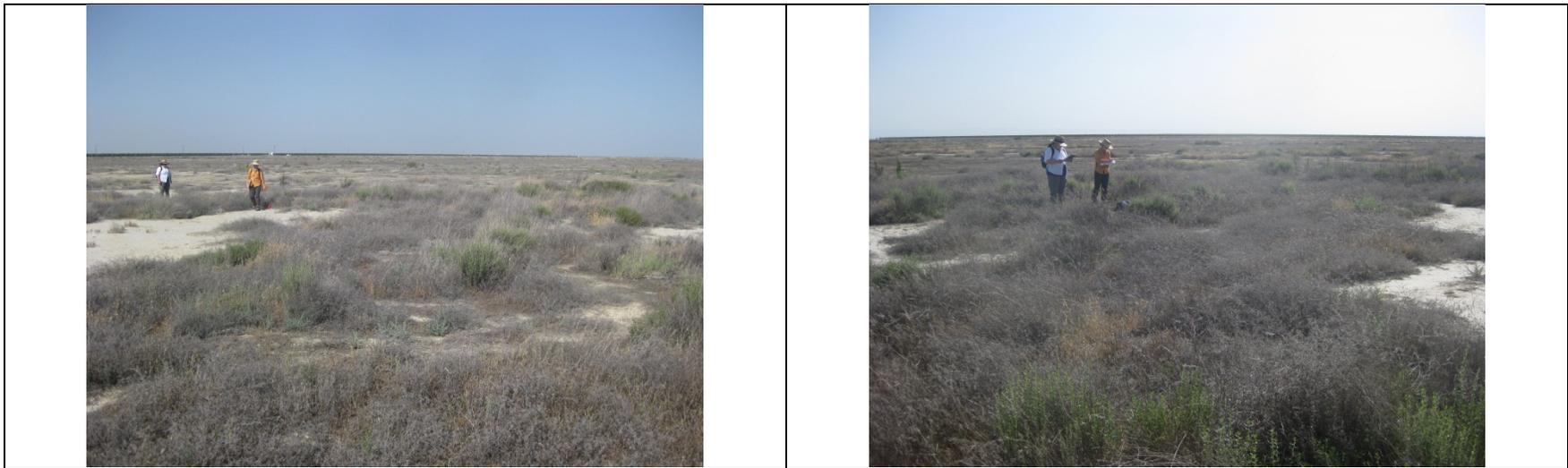
South



East

West

Yang VS301



North

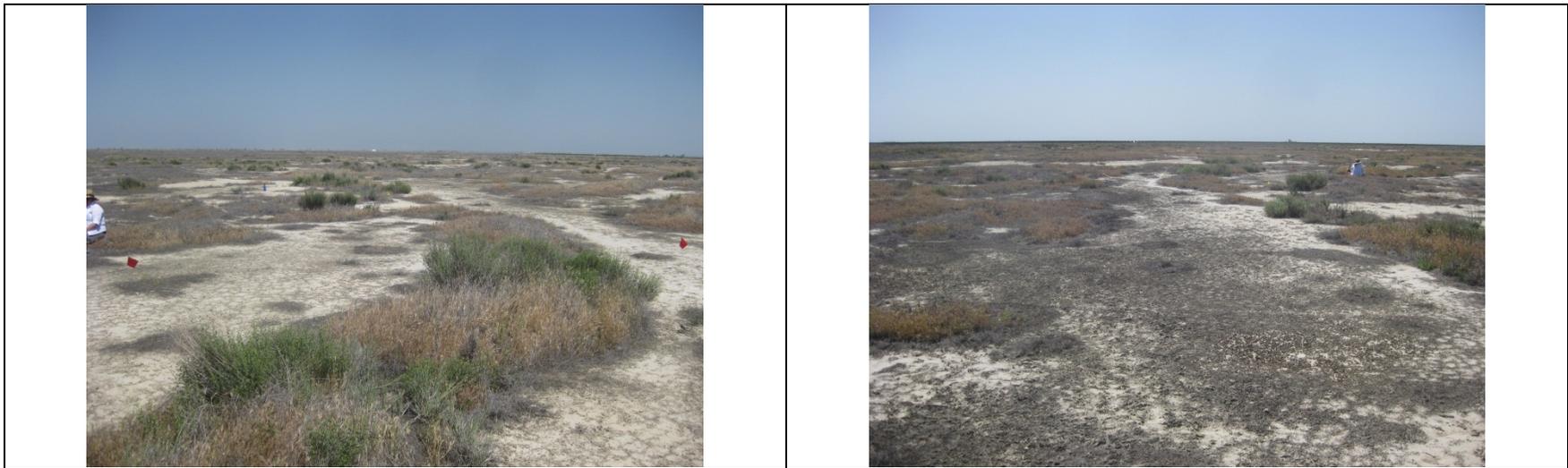
South



East

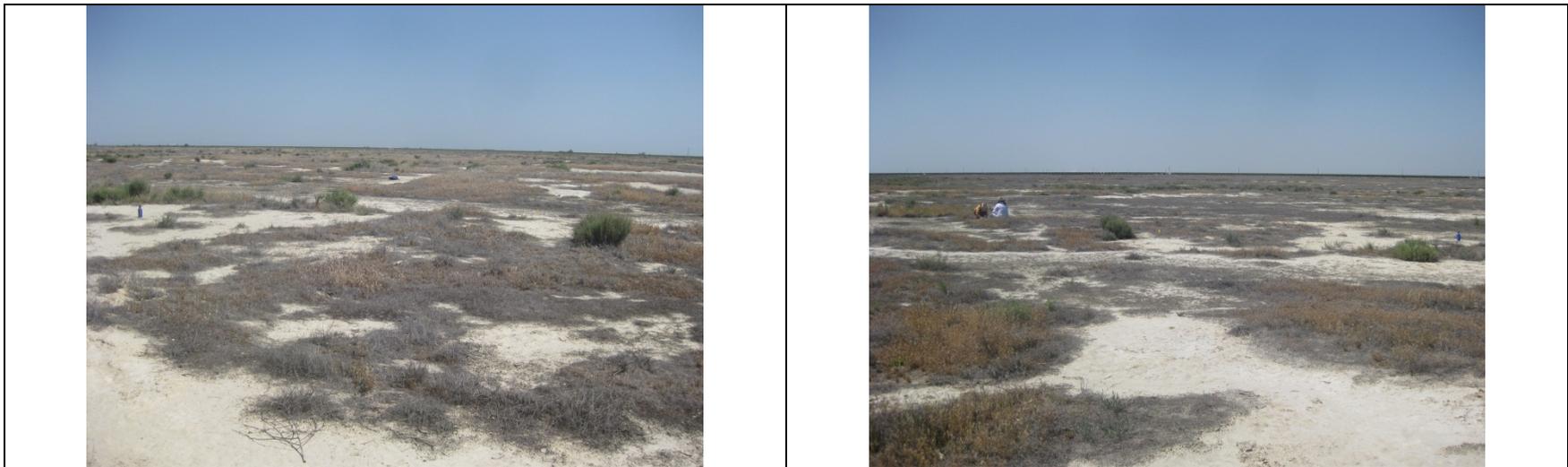
West

Yang VS303



North

South



East

West

Clark River Ranch R401



Upstream



Middle Left



Middle Right



Downstream

Clark River Ranch R402



Upstream



Middle Left



Middle Right



Downstream

Appendix E

Summary Table of Stressors

Table E-2
 Summary Table of Stressors for Potential Mitigation Sites

Attribute	Stressor	Assessment Areas (non-bold X=stressor present and likely to have a negative effect on AA; bold X=stressor has significant negative effect on AA)																	
		Buena Vista Dairy					Davis		Staffel		Te Velde		Valadez		Yang			Clark River Ranch	
		D304	D305	V305	VS305	VS307	D301	D301A	V301	V302	R300	R302	D303	V303	VS300	VS301	VS303	R401	R402
Hydrology Attribute (within 50 M of AA)	Point source discharges																		
	Non-point source discharges										X	X							
	Flow diversions/ unnatural inflows										X	X							X
	Dams																		
	Flow obstructions						X	X											
	Weir/drop structure, tide gates																		
	Dredged inlet/ channel																		
	Engineered channel																		
	Dike/levees	X	X	X	X	X												X	X
	Groundwater extraction																		
	Ditches																		
Actively managed hydrology																	X	X	
Physical Structure Attribute (within 50 M of AA)	Filling or dumping of sediments of soils																		
	Grading/ compaction										X	X	X					X	X
	Plowing/disking										X	X						X	X
	Resource extraction																		
	Vegetation manage-ment																		
	Excessive sediment or organic debris from watershed																	X	X
	Excessive runoff from watershed																		
Nutrient impaired																			
Physical Structure Attribute (within 50 M of AA)	Heavy metal impaired																		
	Pesticides or trace organics impaired																		
	Bacteria and pathogens impaired										X	X							
	Trash or refuse									X	X								

Table E-2
 Summary Table of Stressors for Potential Mitigation Sites

Attribute	Stressor	Assessment Areas (non-bold X=stressor present and likely to have a negative effect on AA; bold X=stressor has significant negative effect on AA)																	
		Buena Vista Dairy					Davis		Staffel		Te Velde		Valadez		Yang			Clark River Ranch	
		D304	D305	V305	VS305	VS307	D301	D301A	V301	V302	R300	R302	D303	V303	VS300	VS301	VS303	R401	R402
Biotic Structure Attribute (within 50 M of AA)	Mowing, grazing, excessive herbivory																		
	Excessive human visitation																		
	Predation and habitat destruction by non-native vertebrates																		
	Tree cutting/sapling removal																		
	Removal of woody debris																		
	Treatment of non-native and nuisance plant species																		
	Pesticide application or vector control																		
	Biological resource extraction or stocking																		
	Excessive organic debris in matrix																		
	Lack of vegetation management to conserve natural resources																		
	Lack of treatment of invasive plants																		
Buffer and Landscape Context Attribute (within 500 M of AA)	Urban residential												X						
	Industrial/commercial																		
	Military training/air traffic																		
	Dams																	X	
	Dryland farming																		
	Intensive row-crop agriculture	X	X															X	X
	Orchards/nurseries								X	X					X	X		X	X
	Commercial feedlots																		
	Dairies																		
	Ranching										X	X							
	Transportation corridor			X	X	X	X	X					X	X					
	Rangeland																		
	Sports fields and urban parklands																		
	Passive recreation						X	X											
	Active recreation	X	X																
Physical resource extraction																			
Biological resource extraction																			
TOTAL		3	3	2	2	2	3	3	2	2	6	6	3	1	1	1	0	7	9
Acronyms AA assessment area M meter(s)																			

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