

**WESTERN RIVERSIDE COUNTY
SPECIAL AREA MANAGEMENT PLAN**

**SUMMARY REPORT AND
USER MANUAL FOR GIS DATABASE**



**US Army Corps
of Engineers®**

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1.0 INTRODUCTION

1.1 BACKGROUND ON SPECIAL AREA MANAGEMENT PLANS

The 1980 Amendments to the Coastal Zone Management Act define the Special Area Management Plan (SAMP) process as "a comprehensive plan providing for natural resource protection and reasonable coastal-dependent economic growth containing a detailed and comprehensive statement of policies, standards and criteria to guide public and private uses of lands and waters; and mechanisms for timely implementation in specific geographic areas within the coastal zone."

The United States Army Corps of Engineers (USACE) indicated this process of collaborative interagency planning within a geographic area of special sensitivity is applicable in non-coastal areas and can be useful to reduce challenges associated with the traditional case-by-case review of projects. The objectives are that developmental interests can plan with predictability and environmental interests are assured that individual and cumulative impacts are analyzed in the context of broad ecosystem needs.

1.2 DEVELOPMENT OF THE WESTERN RIVERSIDE COUNTY SAMP

The Los Angeles District of the USACE initiated the Western Riverside County SAMP in 2001 as a watershed-based planning and regulatory tool to achieve a balance between aquatic resource conservation and reasonable economic development in the Upper Santa Margarita River Watershed and the San Jacinto River Watershed of western Riverside County. The Western Riverside County SAMP area covers approximately one-million acres comprised of 473,000 acres in the Upper Santa Margarita River Watershed and 470,000 acres in the San Jacinto River Watershed in western portion of Riverside County, California (see Figures 1 and 2 for the boundaries of the two watersheds). The SAMP area includes only those portions of these watersheds that are within the boundaries of Riverside County.

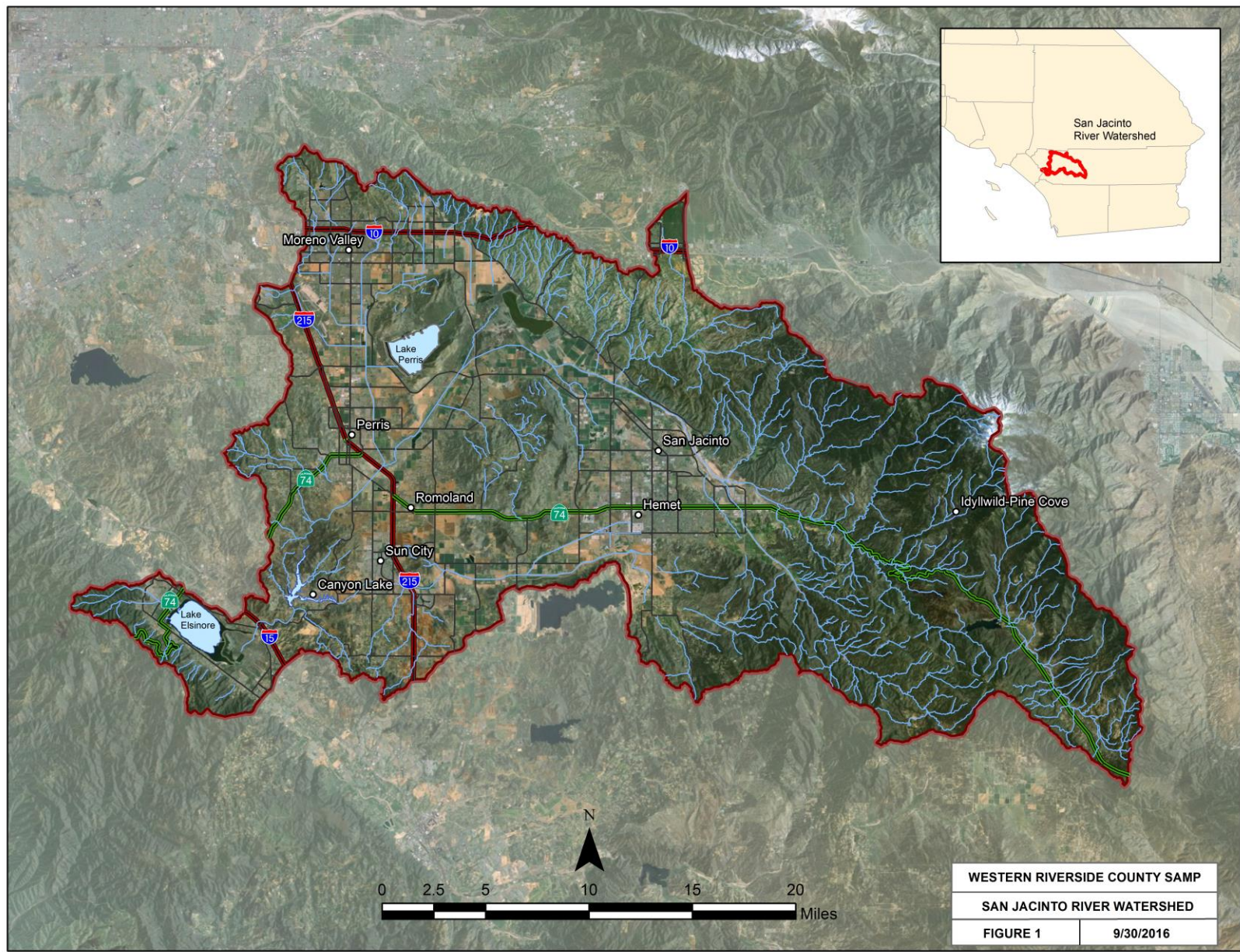
1.2.1 Goal and Objectives

The SAMP was intended to provide aquatic resource assessment tools and a watershed-specific regulatory framework to preserve, enhance, and restore aquatic resources, while allowing reasonable and responsible economic development within the watersheds.

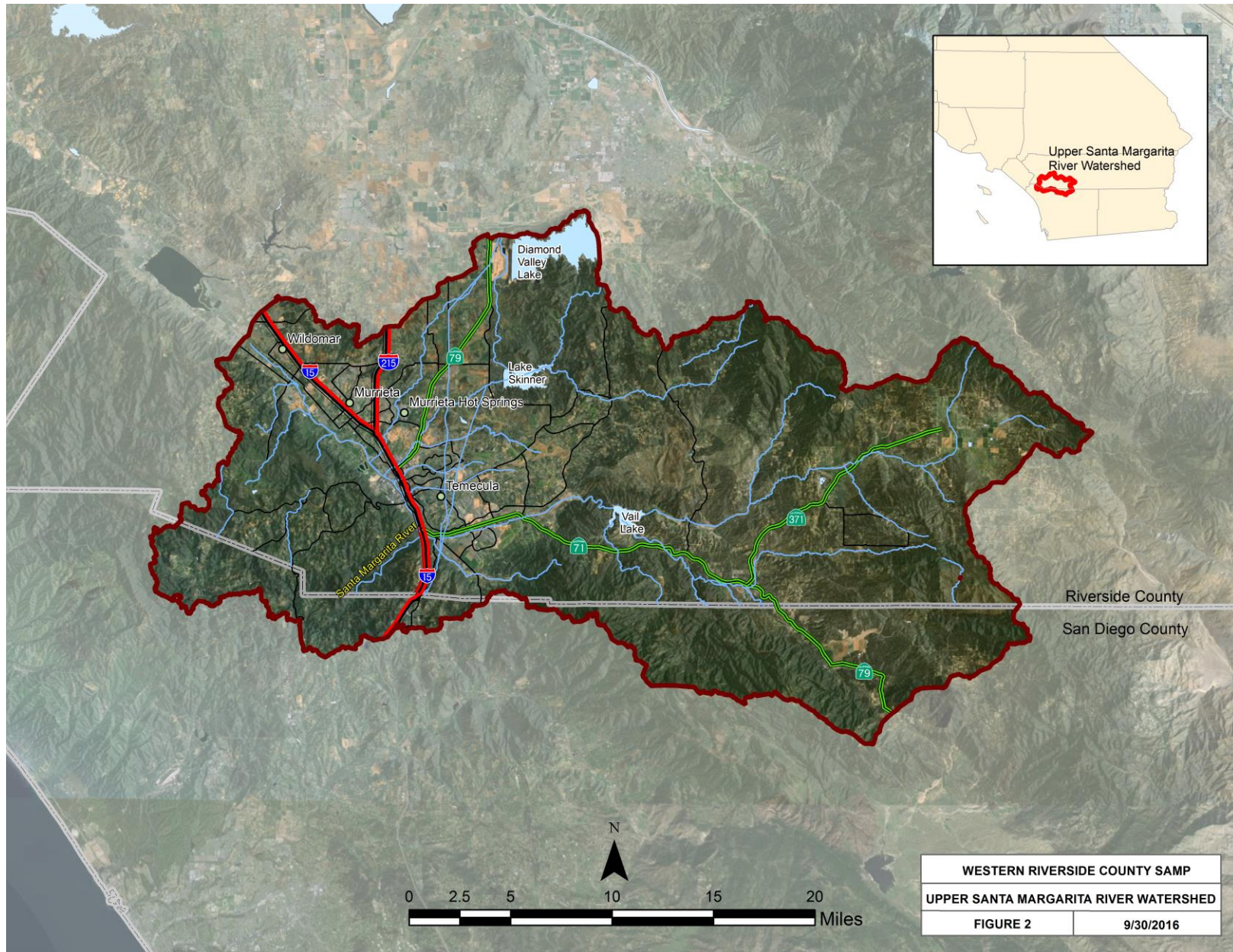
The goals of the Western Riverside County SAMP process included: 1) establishing a watershed-wide aquatic resource reserve program; and 2) minimizing individual and cumulative impacts of future projects in these watersheds. At the end of the SAMP process, it was intended that there would be areas to be protected and preserved, as well as areas where future regulated activities would be allowed to occur, provided they meet specific criteria developed for the protection of aquatic resources within the watersheds. These regulated activities would include residential, commercial, industrial, recreational development; public infrastructure (e.g. roads and utilities);

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and maintenance of public facilities. The anticipated end result was a SAMP programmatic permitting framework for compliance with Section 404 of the Clean Water Act (CWA).

The objectives of the Western Riverside County SAMP included: (1) evaluate the extent and condition of existing aquatic resources in the watersheds; (2) develop a comprehensive management plan and reserve program to preserve and enhance existing aquatic resources; and (3) identify alternative land development scenarios in the context of the aquatic resource management actions and reserve designs.

1.2.2 Coordination with County Planning Process and Stakeholders

The SAMP was originally initiated in coordination with the Riverside County Integrated Plan (RCIP) planning process for the Santa Margarita and San Jacinto Watersheds of Riverside County. The RCIP is a three-part program that addressed transportation; habitat conservation (Multi-Species Habitat Conservation Plan (MSHCP)); and the County's General Plan. The SAMP was intended as a separate, stand-alone process to address aquatic resources but considered the conservation strategy and reserve program that was developed for upland threatened and endangered species as part of the MSHCP.

In development of the SAMP, the USACE committed to working cooperatively with local, state and federal stakeholder agencies, including:

- Riverside County Flood Control and Water Conservation District (RCFCD)
- Riverside County Transportation Department (RCTD)
- California Department of Fish and Wildlife (CDFW) (formerly California Department of Fish and Game), South Coast Region;
- U.S. Fish and Wildlife Service (USFWS) Region I;
- U.S. Environmental Protection Agency (USEPA) Region IX; and
- California Regional Water Quality Control Board (RWQCB) (Region 8 – Santa Ana and Region 9 - San Diego).

1.2.3 USACE Assessment and Restoration of Aquatic Resources

The SAMP began with two key USACE studies that defined and characterized aquatic/riparian resources within the watersheds:

- Planning Level Delineation and Geospatial Characterization of Aquatic Resources for San Jacinto and Portions of Santa Margarita Watersheds, Riverside County, California (PLD) prepared by Robert Lichvar (2003) of the USACE's Engineering Research

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Development Center (ERDC) Cold Regions Research and Engineering Laboratory (CRREL)

- Assessment of Riparian Ecosystem Integrity: San Jacinto and Upper Santa Margarita River Watersheds, Riverside County, California prepared by R. Daniel Smith (2003) of the USACE's ERDC Waterways Experiment Station (WES), also referred to as the Landscape Level Functional Assessment (LLFA).

A third study was prepared that identified a series of Restoration Templates that could be applied to various reaches of the riparian ecosystems to help improve ecosystem functional integrity:

- Riparian Ecosystem Restoration Plan for the San Jacinto and Upper Santa Margarita River Watersheds: General Design Criteria and Site Selection (Restoration Plan) by R. Daniel Smith (2003) of the USACE's ERDC WES.

The GIS mapping data produced from these three studies are key GIS layers in Western Riverside County SAMP GIS database and are briefly described in the following three subsections.

1.2.3.1 PLD

The PLD was performed to describe the baseline occurrence of aquatic resources observed in the watersheds, and is defined as the identification of areas that meet both the jurisdictional requirements under Section 404 of the CWA and the California Fish and Game (CFG) Code Section 1600 at a watershed scale. For the PLD, sampling protocols outlined in the Corps of Engineers Wetlands Delineation Manual (Environmental Laboratory 1987) and 33 CFR 328 were modified for use at the watershed scale. The PLD was accomplished by combining onsite mapping efforts for vegetation and hydrogeomorphic surfaces with detailed field sampling to provide locations of aquatic resources and their regulatory status under Section 404. The work required interpretation of orthophoto quadrangles and stereoscopic aerial photography, and verifying the jurisdictional status and location of identified aquatic resources using sampling and global positioning system (GPS) techniques at representative numbers of field locations. A planning level map of aquatic resources including jurisdictional waters of the U.S. was created which provided a tool for the visualization of these resources within an ARC INFO or ArcView based GIS. With this data, a GIS database of riparian ecosystems and watershed characteristics was developed, which was subsequently used in the LLFA process (as described below). Although the PLD is considered highly accurate at the planning level, it does not replace the need for project-specific delineations for permitting purposes.

1.2.3.2 LLFA

The LLFA was conducted to characterize and rank the functional "integrity" of the watershed's riparian ecosystems for the purpose of evaluating SAMP alternatives. Integrity refers to the quality, or state of being complete, and implies correspondence with a natural or original

condition of the resource. Riparian ecosystems with high ecosystem “integrity” were considered to: (1) exhibit the full range of physical, chemical, and biological attributes and processes that characterized riparian ecosystems in the southern California region over short and long term cycles prior to cultural alteration; and (2) support a balanced, integrated, and adaptive biological community resulting from natural evolutionary and biogeographic processes.

The LLFA was accomplished by dividing the riparian ecosystem along the project site drainages into assessment units or “riparian reaches”, taking into account the influence of the adjacent upland areas and drainage basin on the aquatic resources. Riparian reaches were defined as the segment of the main stem bankfull stream channel and adjacent riparian ecosystem that was relatively homogenous in term of geologic, geomorphic, biological, hydrologic and cultural alteration characteristics.

Each riparian reach was assessed using a suite of indicators for three selected endpoints of ecosystem integrity: hydrology, water quality, and habitat. A characterization of the riparian reaches based on these endpoint indicators was accomplished using data from field visits and use of aerial photographs and topographic maps, and assigning values representing a percentage deviation from the culturally-unaltered (reference) condition for each of the three endpoint indicators. The indicator values were then converted to numerical scores with the highest values representing a riparian reach in close concurrence with the reference condition (high integrity), and the lowest scores having deviation of 50% or more from the reference condition (low integrity). Maps showing functional integrity rankings for hydrology, water quality and habitat indices were then developed for the riparian reaches of the two watersheds.

1.2.3.3 Restoration Plan

The Restoration Plan developed a classification of potential Restoration Templates for riparian ecosystems in various states of cultural alteration, applicable across all geomorphic zones. The study examined each riparian reach to establish specific restoration criteria in terms of channel cross section and form, the scale of terraces present, and dominant vegetation types appropriate to each of the Restoration Templates. Using aerial photography and field assessment data, six restoration templates were assigned to each riparian reach based on the condition of the channel, riparian vegetation, and surrounding land uses. The assigned restoration template was intended to represent the best possible restoration target, given the potential natural patterns expected for the riparian reach’s geomorphic conditions. The objective of each template was to re-establish, to the extent possible, all of the vegetation zones present under relatively natural conditions, and in relative proportions approximately corresponding to the extent of the geomorphic surfaces found in relatively intact reference reaches.

It was recognized that the restoration templates were intended to be general templates structured specifically to determine the feasibility of restoring individual reaches, and to prioritize restoration actions based on the functional benefits likely to be realized. While final restoration designs could resemble these templates and associated relative dimensions, site-specific

restoration designs would have to be developed and include grading plans and specifications for planting stock, planting densities, irrigation practices, and similar requirements.

1.3 OUTCOME OF THE WESTERN RIVERSIDE COUNTY SAMP

Between 2004 and 2010, the USACE Los Angeles District conducted extensive outreach and held coordination meetings with the various stakeholder agencies including the CDFW, RWQCBs, USEPA, USFWS, RCFCD and RCTD, among others, to establish SAMP program elements consisting of an aquatic resource conservation area and a watershed-wide SAMP permitting framework. The intent of the SAMP program elements was to conserve existing high integrity aquatic resources; streamline Section 404 permitting in areas with lower integrity aquatic resources; prioritize and restore riparian reaches of the watersheds to achieve an overall increase the watersheds' ecosystem integrity; and minimize overall cumulative impacts of new development and infrastructure maintenance activities in the watersheds.

A consensus among stakeholders to formally establish the SAMP program elements was not ultimately achieved. The USACE redirected resources into establishing a SAMP GIS database that incorporates ERDC's PLD, LLFA and Restoration Plan elements. The resulting SAMP GIS database is intended to be a practical tool for use by USACE staff in making well-informed decisions on CWA Section 404 permits with regard to the character and functions of existing jurisdictional aquatic resources and prioritization of mitigation/restoration in targeted areas of the watersheds. The GIS database will also be a useful tool for local stakeholders to use in watershed management and land use planning evaluations. Section 4.0 addresses intended uses of the database in further detail.

2.0 WESTERN RIVERSIDE COUNTY SAMP GIS DATABASE

The USACE Los Angeles District contracted with AECOM (formerly URS Corporation) to compile and create a SAMP GIS database to help assess the past, existing and future aquatic resource conditions of the two watersheds. The work was conducted under Contract No. W912EK-10-D-00002 Task Order CQ01.

The data compiled includes existing USACE SAMP data for the watersheds (PLD, LLFA and Restoration Plan as described previously in Section 1.2.3) as well as data on geology, geomorphology, hydrology, surface and groundwater quality, flood control facilities, land use, resource conservation, and wetland and biological information for the watersheds. The data was compiled in GIS format including tables for all available attributes of GIS layers.

2.1 PURPOSE OF THE SAMP GIS DATABASE

The purpose of the project is to create a comprehensive and well-documented GIS database of riparian ecosystem and related data, made available to USACE staff and other watershed

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GIS Layer	Source
<ul style="list-style-type: none"> • Baseline Habitat Integrity (Normalized Index Scores) • Level of Restoration Effort • Potential for Functional Gains • Restoration Scenarios to Increase Hydrologic Integrity • Restoration Scenarios to Increase Water Quality Integrity • Restoration Scenarios to Increase Habitat Integrity 	
<p>Riparian Ecosystems within Public/Conserved Lands</p> <ul style="list-style-type: none"> • Bureau of Land Management • State of California • County of Riverside • Center for Natural Land Management • Western Riverside County Regional Conservation Authority (Multiple Species Habitat Conservation Plan) • Public-Quasi-Public Conserved Lands, Riverside County 	<p>County of Riverside and other public agencies</p>
<p><u>Analysis of Future Land Use</u></p> <ul style="list-style-type: none"> • Vacant Land (% Undeveloped/Vacant Land; 2015) • Vacant Land Planned for Development (2015) 	<p>Aerial Map 2015 General Plans for Riverside County and local cities</p>
<p><u>Geology & Soils Data</u></p> <ul style="list-style-type: none"> • Faults • Liquefaction Zones • Rock Type • Soils (SSURGO) Soil Survey 	<p>California Geologic Survey, USGS California Division of Mines and Geology United States Department of Agriculture - National Resource Conservation Service</p>
<p><u>Hydrography and Hydrologic Data</u></p> <ul style="list-style-type: none"> • National Wetland Inventory (NWI) • National Hydrography Dataset (NHD) Flowline • FEMA Flood Zones (100-year floodplain) • Stream Hydromodification/Hydrologic Condition of Concerns • Rain Gauges • Flood Infrastructure <ul style="list-style-type: none"> ○ Channels ○ Levees ○ Detention/Retention Basins 	<p>USFWS USGS Federal Emergency Management Agency (FEMA) RCFCF RCFCF RCFCF</p>
<p><u>Water Quality</u> Impaired Waterbodies (303(b) and 303(d)-Listed Waters)</p> <ul style="list-style-type: none"> • Streams • Lakes 	<p>SWRCB</p>
<p><u>Habitat & Wildlife Linkages for Riparian Species</u> Federally Designated Critical Habitats</p> <ul style="list-style-type: none"> • Arroyo (Southwestern Arroyo) Toad 	<p>USFWS</p>

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GIS Layer	Source
<ul style="list-style-type: none"> • Coastal California Gnatcatcher • Munz’s Onion • Quino Checkerspot Butterfly • San Bernardino Kangaroo Rat • Southwestern Willow Flycatcher • Spreading Naverretia • Thread-leaved Brodiaea <p>Wildlife Linkages and Corridors (as provided in the Western Riverside County Multiple Species Habitat Conservation Plan)</p> <ul style="list-style-type: none"> • Proposed Constrained Linkage Areas • Proposed Core • Proposed Cores and Habitat Blocks • Proposed Extensions of Existing Cores • Proposed Linkage <p>Missing Wildlife Linkages</p>	<p>Western Riverside County Regional Conservation Authority (RCA)</p> <p>South Coast Wildlands</p>
<p><u>Land Use & Land Cover</u> Land Use Land Cover</p>	<p>SCAG, RCFCD</p>
<p><u>Aerial Photos as Background Layer</u> 1977/1978 Digital Historical Aerial Photo 1995/1996 Digital Historical Aerial Photo 2014- 2016 Digital Aerial Photos</p>	<p>NETR (see Section 2.3) NETR (see Section 2.3) ESRI</p>

2.3 AERIAL AND STREET IMAGERY

In addition to the GIS layers developed for use in the Western Riverside County SAMP GIS database, several different background layers are available for analysis. The ESRI platform that supports the system includes numerous background layers including current aerial photography covering the entire project area, USGS topographic maps, various street layer depictions, and special user layers.

This project also includes two additional layers of historic aerial photographs. Two black and white, ortho-rectified MrSid format files of compiled aerial photography were procured from National Environmental Title Research (NETR) for both the San Jacinto River Watershed and the Upper Santa Margarita River Watershed for two historical periods 1977/1978 and 1995/1996 to visually capture the change in landscape over time. Both of the two seamless photographs generally have a resolution of 1 meter per pixel and are almost completely continuous.

3.0 ANALYSIS USING THE SAMP GIS DATABASE

The Western Riverside County SAMP GIS database can be used to provide watershed information based on a single purpose GIS layer or combined to provide an overlay analysis using two or more GIS layers.

Example data from a single GIS layer:

- Identification of aquatic resources with degraded habitat integrity
- Identification of vacant land that is planned for development
- Analysis of historical land use using historical aerial photography
- Identification of lands designated in the Western Riverside County Multiple Species Habitat Conservation Plan
- Identification of facilities and infrastructure of the RCFC
- Analysis of the extent of stream channelization
- Increase in water quality integrity for restoration of riparian ecosystem immediately adjacent to waters of the U.S. (Restoration Scenario 1 – see discussion below)*
- Increase in habitat integrity for local drainage basins, based on restoration of rangeland in upland areas to native vegetation (Restoration Scenario 2 – see discussion below)*
- Increase in hydrologic integrity for local drainage basins based on restoration of agricultural land in upland areas to native vegetation (Restoration Scenario 3 – see discussion below)*

Example data from overlay analysis of combined GIS layers:

- Identification of areas of potential land development that may be intruding into high integrity riparian habitat
- Identification of areas of potential land development that may encroach into critical habitats or wildlife migration corridors
- Analysis of acreage of impacts to a riparian resource from a potential land development
- Analysis of high integrity riparian areas subject to erosion/sedimentation
- Analysis of historical change to aquatic resources from land development and flood control
- Analysis of the integrity of aquatic resources in areas designated Public-Quasi-Public Conserved lands
- Identification of soil type in riparian areas with low habitat integrity

*Restoration Scenario Layers:

The SAMP GIS database contains a series of individual restoration planning layers that show the increases in habitat, hydrologic and water quality integrity for three different restoration scenarios. These scenarios are:

- Scenario 1: Restoration within the riparian ecosystem immediately adjacent to waters of the U.S. (e.g., stream channel geomorphic features, riparian vegetation, etc). The increase in integrity under Scenario 1 was determined by subtracting the baseline integrity from the integrity calculated under Scenario 1 for each local drainage area. This was done for all three indices of integrity: habitat, hydrologic and water quality.
- Scenario 2: Restoration of active or former rangeland within upland areas to native vegetation. The increase in integrity under Scenario 2 was determined by subtracting the baseline integrity from the integrity calculated under Scenario 2 for each local drainage area. This was done for all three indices: habitat, hydrologic and water quality.
- Scenario 3: Restoration of agricultural lands as well as active or former rangeland within upland areas to native vegetation. The increase in integrity under Scenario 3 was determined by subtracting the baseline habitat integrity from the habitat integrity calculated under Scenario 3 for each local drainage area. This was done for all three indices: habitat, hydrologic and water quality.

4.0 INTENDED USES OF THE SAMP GIS DATABASE

The SAMP GIS database is intended for use by staff of the USACE Regulatory Division in making well-informed decisions on CWA Section 404 permits. The database provides staff with a USACE ERDC-prepared planning level delineation and functional integrity characterization of jurisdictional resources that may be impacted by a regulated activity. Staff can rely on this data for an initial desktop assessment of a project's potential impact to the functions and values of the jurisdictional resource (at the reach level) and facilitate decisions on the type and extent of compensatory mitigation that would be needed for no net loss in functions and values. Using the ERDC restoration planning layers, staff can also make decisions on the best locations for compensatory mitigation, as well as the type and level of restoration effort that would be needed to provide an increase in functional integrity of the aquatic resource. From a regulatory management perspective, use of the SAMP database promotes implementation of the Compensatory Mitigation Rule (33 CFR Parts 325 and 332) (40 CFR Part 230) which calls for a watershed approach to mitigation.

Other users of the database could include land use planners within Riverside County and the various cities who will now have access to detailed aquatic resources data that can help inform their decision making when evaluating land development plans or when updating their General Plan including the Open Space/Conservation Element to understand how aquatic resources could be affected by land use change. The data can also be used to help better inform land use planning decisions on new or expanded open space/conservation areas and riparian buffer zones.

Agencies and other stakeholders involved in watershed planning and management can use the SAMP GIS database to identify watershed stressors and impacted resources, restoration potential

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of various riparian resources, source analysis for assessing total daily maximum loads (TMDLs) and locations for implementing regional best management practices that help address water quality. The data can also be used to help inform decisions on flood plain restoration or riparian habitat restoration. Additionally, stakeholders can use a historical aerial photo layer, combined with overlays of aquatic resources, vacant land planned for development, and public/conserved lands, to analyze the extent of land use change that has occurred in the watershed, as well as changes to aquatic resources, and what areas of remaining resources could best be restored or conserved.

5.0 DATABASE ACCESSIBILITY, MAINTENANCE, AND LIMITATIONS

5.1 ACCESSIBILITY OF SAMP GIS DATABASE

The Western Riverside County SAMP GIS database is available to all users who access the USACE SAMP webpage, a public site at:

<http://www.spl.usace.army.mil/Missions/Regulatory/Projects-Programs/>

The GIS maps are provided in ArcGIS server format for non-technical users.

5.2 LONG-TERM MAINTENANCE OF THE DATABASE

GIS layers prepared by public agencies, other than SAMP data layers prepared by the USACE, are expected to be updated from time to time based on changing conditions. Therefore, once per year, GIS staff should review public agency GIS data layers used in the SAMP GIS database and identify if revised/updated postings of the data layers have been made. If revisions/updates have been made, GIS staff should evaluate the significance of the revisions, and consider updating the GIS layer in the SAMP GIS database. In particular, GIS staff should review layers for land use/land cover, property ownership, city boundaries, parcel maps, conserved lands, national wetland inventory, federally-designated critical habitats, impaired waters, and stream hydromodification. Data in these layers may change over time, while data in others layers may not. For example data for soils, rock type, faults and other geologic information is not likely to change on a regular basis, and therefore would not require regular review for map layer updates.

5.3 DATABASE LIMITATIONS

The data in the Western Riverside County SAMP GIS database is limited to the quality of the data received by public agencies. As discussed in Section 5.2, many data layers require regular review and update to ensure the data layers in the database are the most current.

USACE's SAMP data provided in the PLD, LLFA and Restoration Plan were prepared in the 2002/2003 timeframe. These SAMP data reflect conditions at the time these studies were conducted. Use of the SAMP data for evaluation of new development, infrastructure or maintenance projects will require review of current aerial maps and/or field verification to confirm present conditions.

APPENDIX

**DESCRIPTIONS, SOURCES, AND LIMITATIONS OF
WESTERN RIVERSIDE COUNTY SAMP GIS DATABASE**

APPENDIX A
DESCRIPTIONS, SOURCES, AND LIMITATIONS OF
GIS DATABASE
FOR
WESTERN RIVERSIDE COUNTY
SPECIAL AREA MANAGEMENT PLAN

SUMMARY REPORT AND USER MANUAL



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This appendix is divided into two sections: Section A-1 is for GIS database layers of the Santa Margarita River Watershed and Section A-2 is for GIS database layers of the San Jacinto River Watershed. Each of the two sections contain a subsection for U.S. Army Corps of Engineers (USACE) Special Area Management Plan (SAMP) GIS data layers followed by a subsection for non-USACE SAMP GIS layers.

A-1. Santa Margarita River Watershed

SAMP DATA LAYERS FOR SANTA MARGARITA RIVER WATERSHED.

PLANNING LEVEL DELINEATION AND GEOSPATIAL CHARACTERIZATION OF AQUATIC RESOURCES OF SAN JACINTO AND PORTIONS OF SANTA MARGARITA RIVER WATERSHEDS (PLD)

Santa Margarita River Watershed Boundary

Summary

The Santa Margarita River Watershed represents the land area that drains into the Santa Margarita River. The Western Riverside County SAMP encompasses the Santa Margarita River Watershed as well as the San Jacinto River Watershed. The boundary of the Santa Margarita River Watershed is the extent of the Santa Margarita section of the Western Riverside County SAMP.

Description

The boundary of the Santa Margarita River Watershed was developed by the USACE, Los Angeles District and the U.S. Army Engineer Research and Development Center (ERDC). The layer was developed based on hydrologic analysis of the topography and the storm water flow pattern.

Credits

USACE, Los Angeles District

Lichvar, R. 2003. Planning Level Delineation and Geospatial Characterization of Aquatic Resources for San Jacinto and Portions of Santa Margarita Watersheds, Riverside County, California U.S. Army Engineer Research Development Center (ERDC) Cold Regions Research and Engineering Laboratory (CRREL).

Use Limitations

There are no access or use limitations for this layer

Subwatersheds, Santa Margarita River Watershed

Summary

The PLD identified each of the hydrologic subareas in the Santa Margarita Watershed which drain to the Santa Margarita River based on a standard nested watershed delineation scheme developed by the State Water Resources Control Board.

Description

The subwatersheds are hydrologic units (or “subareas”) that represent a limited hydrologic system for analysis and assessment of the watershed.

Credits

Lichvar, R. 2003. Planning Level Delineation and Geospatial Characterization of Aquatic Resources for San Jacinto and Portions of Santa Margarita Watersheds, Riverside County, California U.S. Army Engineer Research Development Center (ERDC) Cold Regions Research and Engineering Laboratory (CRREL).

Use Limitations

There are no access or use limitations for this layer

Mainstem Waterways, Santa Margarita

Summary

Mainstem waterways in the Santa Margarita River Watershed were identified and mapped. The large differences in length and area of the mainstem channels in these reaches reflects the extreme differences between urban areas and more natural landscapes in terms of the longitudinal homogeneity of vegetation cover, engineering, and other types of disturbance that occur along stream channels and their associated riparian ecosystems.

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These mainstem waterways are Waters of the United States (WoUS) and regulated under Section 404 of the Clean Water Act (jurisdictional waters). The areas, delineated as WoUS in the PLD, met the requirements outlined in the Corps of Engineers Wetlands Delineation Manual (Environmental Laboratory 1987) and subsequent guidance from the Office of the Chief of Engineers, but are subject to field verification.

Description

A mainstem waterway is the primary downstream segment of a stream or river, classified in Strahler system of hydrologic classification as the highest order stream in a drainage basin, as contrasted to its upstream tributaries (lower classified streams). Water enters the mainstem from the upstream tributaries (riparian reaches). In general, as stream orders increase, the width of the bankfull channel increases, and the size of the area supporting riparian vegetation increases.

Credits

Lichvar, R. 2003. Planning Level Delineation and Geospatial Characterization of Aquatic Resources for San Jacinto and Portions of Santa Margarita Watersheds, Riverside County, California U.S. Army Engineer Research Development Center (ERDC) Cold Regions Research and Engineering Laboratory (CRREL).

Use Limitations

There are no access and use limitations for this layer. Waters delineated in the PLD are subject to field verification.

Mainstem Tributaries – Santa Margarita

Summary

Each of the mainstem tributaries in the Santa Margarita River Watershed were identified and mapped. These mainstem waterways are WoUS and regulated under Section 404 of the Clean Water Act (e.g. jurisdictional waters). The areas, delineated as WoUS in the PLD, met the requirements outlined in the Corps of Engineers Wetlands Delineation Manual (Environmental Laboratory 1987 and subsequent guidance from the Office of the Chief of Engineers, but are subject to field verification.

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Description

Mainstem tributaries are lower order streams that contribute drainage to mainstems (higher order streams). First order streams (i.e., the smallest mapped streams, or stream branches, without tributaries) discharge into second order streams (i.e., branches of streams receiving discharges from only first order streams). Lower order streams may discharge directly into a third order stream (i.e., larger branches of a stream receiving first and second order tributaries).

Credits

Lichvar, R. 2003. Planning Level Delineation and Geospatial Characterization of Aquatic Resources for San Jacinto and Portions of Santa Margarita Watersheds, Riverside County, California U.S. Army Engineer Research Development Center (ERDC) Cold Regions Research and Engineering Laboratory (CRREL).

Use Limitations

There are no access and use limitations for this layer. Waters delineated in the PLD are subject to field verification.

Springs, Santa Margarita

Summary

Jurisdictional springs were identified and mapped throughout the Santa Margarita River Watershed.

Description

Springs identified (at the planning level) as jurisdictional under the Clean Water Act and under the regulatory authority of the USACE.

Credits

Lichvar, R. 2003. Planning Level Delineation and Geospatial Characterization of Aquatic Resources for San Jacinto and Portions of Santa Margarita Watersheds, Riverside County, California U.S. Army Engineer Research Development Center (ERDC) Cold Regions Research and Engineering Laboratory (CRREL).

Use Limitations

There are no access and use limitations for this layer. Waters delineated in the PLD are subject to field verification.

Washes, Santa Margarita

Summary

Jurisdictional washes identified throughout the SAMP area.

Description

Jurisdictional washes identified (at the planning level) as jurisdictional under the Clean Water Act and under the regulatory authority of the USACE.

Credits

Lichvar, R. 2003. Planning Level Delineation and Geospatial Characterization of Aquatic Resources for San Jacinto and Portions of Santa Margarita Watersheds, Riverside County, California U.S. Army Engineer Research Development Center (ERDC) Cold Regions Research and Engineering Laboratory (CRREL).

Use Limitations

There are no access and use limitations for this layer. Waters delineated in the PLD are subject to field verification.

Hydrogeomorphic Floodplain Units, Santa Margarita

Summary

Hydrogeomorphic floodplain units were mapped for the purposes of indicating flood frequency for use in delineation purposes. Typically, floodplain terraces develop on second-order, third-order, and greater Strahler stream types. First-order streams typically lack floodplain terraces since they are located on steeper slopes, have smaller drainage areas, and are confined to bedrock channels that limit their ability to create floodplain terraces

Description

The two floodplain map units identified in the field were the active and abandoned floodplain terraces. The active floodplain contains the bankfull and the adjacent active floodplain terrace that contains features associated with frequent flooding. These features include high-flow channels, unvegetated surfaces, bed and bank, and a break in slope. The abandoned floodplain terrace is above the active floodplain and contains features associated with infrequent and seasonally wet areas. Potentially regulated hydrologic features in this terrace are driven by infrequent overbank flooding, local precipitation, and occasional groundwater discharge within

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paleo channels and other depressional features. Often there is a distinct change of vegetation community from the active to the abandoned floodplain.

Credits

Lichvar, R. 2003. Planning Level Delineation and Geospatial Characterization of Aquatic Resources for San Jacinto and Portions of Santa Margarita Watersheds, Riverside County, California U.S. Army Engineer Research Development Center (ERDC) Cold Regions Research and Engineering Laboratory (CRREL).

Regulatory Probability Rating Units, Santa Margarita

Summary

The modification of standard delineation sampling protocols and the development of wetland probability ratings for Section 404 regulatory purposes for the riparian vegetation map units allowed for a watershed-scale delineation. The sampling protocols outlined in the Corps of Engineers Wetlands Delineation Manual (Environmental Laboratory, 1987) and “Waters of the United States” (WoUS) at 33 CFR 328 were modified for use at the watershed scale. To delineate at this scale, riparian corridors were mapped for hydrogeomorphic surfaces representing a combined bankfull and active floodplain and a separate abandoned floodplain terrace, which were later interpreted for return-interval requirements under Section 404. Individual vegetation units at the species-association level were sampled at 169 sites to develop a characterization of the indicators for both wetlands and other WoUS.

Description

By combining field sampling results for wetland occurrences within various mapped vegetation types with the flood frequency information obtained from the geomorphic surface map, probability ratings intended for regulatory purposes were developed to accommodate all variations. Six categories of wetland or WoUS ratings were assigned to each of the riparian vegetation units, with ratings ranging from always regulated to upland or not regulated.

Credits

Lichvar, R. 2003. Planning Level Delineation and Geospatial Characterization of Aquatic Resources for San Jacinto and Portions of Santa Margarita Watersheds, Riverside County, California U.S. Army Engineer Research Development Center (ERDC) Cold Regions Research and Engineering Laboratory (CRREL).

Vegetation Species Association Units, Santa Margarita

Summary

Vegetation map units were developed through a series of modifications to the California natural community classification by Holland (1986). In previous SAMP efforts in other watersheds in southern California, ERDC found that existing vegetation classifications lacked sensitivity for use in watershed-scale wetland delineations.

Description

To meet the needs of identifying wetlands, ERDC developed a classification that followed the hierarchical schemes of both Holland and Sawyer and Keeler-Wolf (1995) but added another level of specificity at the species level. This classification shares the use of growth forms and dominant species, with expanded use of additional species identifiers for both native and non-native units.

Credits

Lichvar, R. 2003. Planning Level Delineation and Geospatial Characterization of Aquatic Resources for San Jacinto and Portions of Santa Margarita Watersheds, Riverside County, California U.S. Army Engineer Research Development Center (ERDC) Cold Regions Research and Engineering Laboratory (CRREL).

Holland, R.F. (1986) Preliminary descriptions of the terrestrial natural communities of California. Unpublished report. California Department of Fish and Game, Sacramento, California.

Sawyer, J., and T. Keeler-Wolf (1995) A Manual of California Vegetation. California Native Plant Society, California.

Use Limitations

There are no access and use limitations for this layer.

ASSESSMENT OF RIPARIAN ECOSYSTEM INTEGRITY: SAN JACINTO AND UPPER SANTA MARGARITA RIVER WATERSHEDS

Habitat Integrity, Scores 7 – 29, Santa Margarita

Summary

Each of the 512 riparian reaches in the Santa Margarita River Watershed were identified and assessed for habitat integrity.

Description

Habitat integrity refers to the quality, or state of being complete, and implies correspondence with a natural or original condition of the resource. Riparian ecosystems that ranked high for high ecosystem “integrity” were considered to: (1) exhibit the full range of physical, chemical, and biological attributes and processes that characterized riparian ecosystems in the southern California region over short and long term cycles prior to cultural alteration; and (2) support a balanced, integrated, and adaptive biological community resulting from natural evolutionary and biogeographic processes. For detailed description of the habitat integrity rating methodology please refer to the USACE report "Assessment of Riparian Ecosystem Integrity: San Jacinto and Upper Santa Margarita River Watersheds, Riverside County, California" by R.D. Smith, dated January 2003.

Credits

Smith, R.D. 2003. Assessment of Riparian Ecosystem Integrity: San Jacinto and Upper Santa Margarita River Watersheds, Riverside County, California. U.S. Army Engineer Research and Development Center, Waterways Experiment Station, Vicksburg, MS. Final Report to the U.S. Army Corps of Engineers, Los Angeles District.

Use Limitations

There are no access and use limitations for this layer.

Hydrologic Integrity (Index Scores 12-25), Santa Margarita

Summary

Each of the 512 riparian reaches in the Santa Margarita River Watershed were identified and assessed for hydrologic integrity.

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Description

Hydrologic integrity refers to the quality, or state of being complete, and implies correspondence with a natural or original condition of the resource. Riparian ecosystems that ranked high for high ecosystem “integrity” were considered to: (1) exhibit the full range of physical, chemical, and biological attributes and processes that characterized riparian ecosystems in the southern California region over short and long term cycles prior to cultural alteration; and (2) support a balanced, integrated, and adaptive biological community resulting from natural evolutionary and biogeographic processes. For detailed description of the habitat integrity rating methodology please refer to the USACE report "Assessment of Riparian Ecosystem Integrity: San Jacinto and Upper Santa Margarita River Watersheds, Riverside County, California" by R.D. Smith, dated January 2003.

Credits

Smith, R.D. 2003. Assessment of Riparian Ecosystem Integrity: San Jacinto and Upper Santa Margarita River Watersheds, Riverside County, California. U.S. Army Engineer Research and Development Center, Waterways Experiment Station, Vicksburg, MS. Final Report to the U.S. Army Corps of Engineers, Los Angeles District.

Use Limitations

There are no access and use limitations for this layer.

Water Quality Integrity (Index Scores 16-40), Santa Margarita

Summary

Each of the 512 riparian reaches in the Santa Margarita River Watershed were identified and assessed for water quality integrity

Description

Water Quality integrity refers to the quality, or state of being complete, and implies correspondence with a natural or original condition of the resource. Riparian ecosystems that ranked high for high ecosystem “integrity” were considered to: (1) exhibit the full range of physical, chemical, and biological attributes and processes that characterized riparian ecosystems in the southern California region over short and long term cycles prior to cultural alteration; and (2) support a balanced, integrated, and adaptive biological community resulting from natural evolutionary and biogeographic processes. For detailed description of the habitat integrity rating methodology please refer to the USACE report "Assessment of Riparian Ecosystem Integrity:

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San Jacinto and Upper Santa Margarita River Watersheds, Riverside County, California" by R.D. Smith, dated January 2003.

Credits

Smith, R.D. 2003. Assessment of Riparian Ecosystem Integrity: San Jacinto and Upper Santa Margarita River Watersheds, Riverside County, California. U.S. Army Engineer Research and Development Center, Waterways Experiment Station, Vicksburg, MS. Final Report to the U.S. Army Corps of Engineers, Los Angeles District.

Use Limitations

There are no access and use limitations for this layer.

RIPARIAN ECOSYSTEM RESTORATION PLAN FOR THE SANTA MARGARITA RIVER WATERSHED: GENERAL DESIGN CRITERIA AND SITE SELECTION

Baseline Habitat Integrity – 2006 Normalized Version, Santa Margarita

Summary

The change in habitat integrity of each riparian reach was assessed using three different restoration scenarios (normalized index scores) described in the Riparian Ecosystem Restoration Plan for the Santa Margarita River Watershed: General Design Criteria and Site Selection (Restoration Plan) by R. Daniel Smith (2006) of ERDC.

Description

One of the primary applications of the Assessment of Riparian Ecosystem Integrity (Smith 2003) is to identify specific riparian reaches where restoration will maximize the increase in riparian ecosystem integrity in the watershed, given a specific set of criteria or objectives. Three restoration scenarios were simulated and changes in integrity were mapped at the local drainage area scale to facilitate a comparison between riparian reaches.

Credits

Smith, R. D. and C. V. Klimas. 2006. Riparian Ecosystem Restoration Plan for the Santa Margarita River Watershed: General Design Criteria and Site Selection. U.S. Army Engineer Research and Development Center, Environmental Laboratory, Vicksburg, MS. Final Report to the U.S. Army Corps of Engineers, Los Angeles District, Regulatory Branch.

Use Limitations

There are no access and use limitations for this layer.

Baseline Hydrologic Integrity Normalized Index Scores

The change in hydrologic integrity of each riparian reach was assessed using three different restoration scenarios (normalized index scores) described in the Riparian Ecosystem Restoration Plan for the Santa Margarita River Watershed: General Design Criteria and Site Selection (Restoration Plan) by R. Daniel Smith (2006) of ERDC.

Description

One of the primary applications of the Assessment of Riparian Ecosystem Integrity (Smith 2003) is to identify specific riparian reaches where restoration will maximize the increase in riparian ecosystem integrity in the watershed, given a specific set of criteria or objectives. Three restoration scenarios were simulated and changes in integrity were mapped at the local drainage area scale to facilitate a comparison between riparian reaches.

Credits

Smith, R. D. and C. V. Klimas. 2006. Riparian Ecosystem Restoration Plan for the Santa Margarita River Watershed: General Design Criteria and Site Selection. U.S. Army Engineer Research and Development Center, Environmental Laboratory, Vicksburg, MS. Final Report to the U.S. Army Corps of Engineers, Los Angeles District, Regulatory Branch.

Baseline Water Quality Integrity Normalized Index Scores

Summary

The change in water quality integrity of each riparian reach was assessed using three different restoration scenarios (normalized index scores) described in the Riparian Ecosystem Restoration Plan for the Santa Margarita River Watershed: General Design Criteria and Site Selection (Restoration Plan) by R. Daniel Smith (2006) of ERDC.

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Description

One of the primary applications of the Assessment of Riparian Ecosystem Integrity (Smith 2003) is to identify specific riparian reaches where restoration will maximize the increase in riparian ecosystem integrity in the watershed, given a specific set of criteria or objectives. Three restoration scenarios were simulated and changes in integrity were mapped at the local drainage area scale to facilitate a comparison between riparian reaches.

Credits

Smith, R. D. and C. V. Klimas. 2006. Riparian Ecosystem Restoration Plan for the Santa Margarita River Watershed: General Design Criteria and Site Selection. U.S. Army Engineer Research and Development Center, Environmental Laboratory, Vicksburg, MS. Final Report to the U.S. Army Corps of Engineers, Los Angeles District, Regulatory Branch.

Geomorphic Zones of the Watershed, Santa Margarita

Summary

The geomorphic zones reflect fundamental geomorphic characteristics under “equilibrium” conditions. Geomorphology rating is an indicator of the likelihood of erosion from storm water flow.

Description

Seven different geomorphology zones were identified in the analysis of the geomorphology zones of the Upper Santa Margarita River Watershed. Each assigned riparian reach was classified using aerial photography, baseline assessment data and field evaluations. The Geomorphic zones are as follows:

V-shaped Valley: High-gradient stream channel systems that are located within the mountains or are first-order streams in the foothills.

Colluvial Valley: Streams confined by colluvium, boulder bar deposits, or bedrock, having narrow floodplains and narrow, discontinuous terraces.

Boulder Dominated Floodplain/Terrace: Characterized by deep, extensive accumulations of boulders and cobble that extend from valley wall to valley wall.

Steep Alluvial Fan: Fairly steep, truncated tributaries that occur where streams enter large valleys in mountainous terrain.

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Alluvial Valley with Meandering Stream: Sinuous channel systems that meander widely across the valley floor, have well-developed floodplains with alternating bars, and have one or more broad terraces that dominate the remainder of the valley bottom.

Valley Fill: Stream reaches of major stream valleys that have been filled with deep, well-drained sediments and that show only trace channel systems and little or no terrace development.

Sandy Wash: Channel type consisting of a relatively narrow, flow-bottomed channel with low, distinct banks that give way to gentle sloping alluvial and/or colluvial deposits.

Credits

USACE ERDC

Smith, R. D. and C. V. Klimas. 2006. Riparian Ecosystem Restoration Plan for the Santa Margarita River Watershed: General Design Criteria and Site Selection. U.S. Army Engineer Research and Development Center, Environmental Laboratory, Vicksburg, MS. Final Report to the U.S. Army Corps of Engineers, Los Angeles District, Regulatory Branch.

Use Limitations

There are no access and use limitations for this layer.

Level of Restoration Effort – San Jacinto

Summary

Using the riparian reaches of the Watershed identified in the Assessment of Riparian Ecosystem Integrity (Smith 2003), each of the reaches were rated for the level of effort required to restore the watershed riparian habitats. The Restoration Plan developed a classification of potential Restoration Templates for riparian ecosystems in various states of cultural alteration, applicable across all geomorphic zones. The study examined each riparian reach to establish specific restoration criteria in terms of channel cross section and form, the scale of terraces present, and dominant vegetation types appropriate to each of the Restoration Templates. Using aerial photography and field assessment data, six restoration templates were assigned to each riparian reach based the condition of the channel, riparian vegetation, and surrounding land uses. The assigned restoration template was intended to represent the best possible restoration target, given the potential natural patterns expected for the riparian reach's geomorphic conditions. The objective of each template was to re-establish, to the extent possible, all of the vegetation zones present under relatively natural conditions, and in relative proportions approximately corresponding to the extent of the geomorphic surfaces found in relatively intact reference reaches.

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It was recognized that the restoration templates were intended to be general templates structured specifically to determine the feasibility of restoring individual reaches, and to prioritize restoration actions based on the functional benefits likely to be realized. While final restoration designs could resemble these templates and associated relative dimensions, site-specific restoration designs would have to be developed and include grading plans and specifications for planting stock, planting densities, irrigation practices, and similar requirements.

Description

Each riparian reach identified for the level of restoration effort required corresponds to the individual reach and the corresponding reach ID.

LOE (Level of Effort) Classification:

Heavy Earth / Heavy Plant: Stream reaches for which a large numbers of plants must be introduced and/or substantial mechanical site preparation is needed. These reaches may be deeply incised channel segments that require extensive soil removal to re-establish floodplains and terrace systems tens of feet below the current grade, and grading back of high vertical banks to stable angles of repose.

Light Earth / Heavy Plant: Stream reaches requiring a large numbers of plants to be introduced and/or substantial mechanical site preparation is needed. Planting activities may involve hand-planting of willows at the base of an unstable bank, or adding species that may have been grazed from a community back into an otherwise intact riparian area or upland buffer.

Light Planting: No reconfiguration of the land surface is needed. Treatment consists of spot-planting of native plants. Typically, this would involve hand-planting of willows at the base of an unstable bank, or adding species that may have been grazed from a community back into an otherwise intact riparian area or upland buffer.

Light Plant / Exotic Control: No reconfiguration of the land surface is needed. Treatment consists of control of exotic species and spot-planting of native plants. Typically, this would involve hand-planting of willows at the base of an unstable bank, or adding species that may have been grazed from a community back into an otherwise intact riparian area or upland buffer.

Moderate Earth / Heavy Plant: Stream segments and associated riparian areas that require reconfiguration in some areas. Moderate Earthwork is intended to indicate widening of floodplains and terraces in systems where channels are not deeply incised, but need more space to re-establish equilibrium and community diversity. Typically, this will involve excavation of

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less than 6 feet of soil depth, though there is no implication regarding the lateral extent of the excavation.

None: Stream reaches in which no restoration is considered necessary because they are functional in their current condition, requiring only vigilance to prevent invasion of exotic plant species.

Credits

Smith, R. D. and C. V. Klimas. 2006. Riparian Ecosystem Restoration Plan for the Santa Margarita River Watershed: General Design Criteria and Site Selection. U.S. Army Engineer Research and Development Center, Environmental Laboratory, Vicksburg, MS. Final Report to the U.S. Army Corps of Engineers, Los Angeles District, Regulatory Branch.

Use Limitations

There are no access and use limitations for this layer.

Possible Opportunities (Priorities by Restoration Goal) – Santa Margarita

Summary

This layer contains sections of the mainstem waterways that have been identified as strong candidates for restoration

Description

This layer represents each reach identified as a possible opportunity for restoration areas.

REST_CAT (“Restoration Category”)

Definitions:

Restoration adjacent to open space: Riparian areas in which compensatory mitigation would be located adjacent to existing open space such that the open space would provide buffer benefits to the riparian area.

Connectivity: Riparian areas in which compensatory mitigation would connect two areas of natural open space to create a continuous open space feature. Restoration of connectivity was evaluated in a riverine hydrogeomorphic context to identify riverine/riparian features that would allow for the movement of wildlife, sediments, and nutrients.

Sensitive species habitat: Riparian areas in which compensatory mitigation would meet the habitat needs of sensitive species.

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Water quality + wildlife habitat: Riparian areas in which compensatory mitigation would increase water quality and flood control functions and services while also providing benefits to wildlife habitat.

Water quality only: Riparian areas in which compensatory mitigation would increase water quality and flood control functions and services without benefits to wildlife habitat.

Credits

Smith, R. D. and C. V. Klimas. 2006. Riparian Ecosystem Restoration Plan for the Santa Margarita River Watershed: General Design Criteria and Site Selection. U.S. Army Engineer Research and Development Center, Environmental Laboratory, Vicksburg, MS. Final Report to the U.S. Army Corps of Engineers, Los Angeles District, Regulatory Branch.

Use Limitations

There are no access and use limitations for this layer.

Restoration Templates, Santa Margarita

Summary

A study was performed by the U.S. Army Engineer Research and Development Center to determine waterways in western Riverside County that had the potential of undergoing restoration. This layer identifies those waterways and indicates restoration potential.

Description

ERDC developed a classification of potential Restoration Templates for riparian ecosystems in various states of cultural alteration, applicable across all Geomorphic Zones and established specific restoration criteria in terms of channel cross section and form, the scale of terraces present, and dominant vegetation types appropriate to each of the restoration Templates. A particular restoration template was assigned to each riparian reach based the condition of the channel, riparian vegetation, and surrounding land uses. The assigned restoration template was intended to represent the best possible restoration target, given the potential natural patterns expected for the Geomorphic Zone. The objective of each template is to re-establish, to the extent possible, all of the vegetation zones present under relatively natural conditions, and in relative proportions approximately corresponding to the extent of the geomorphic surfaces found in relatively intact reference reaches. The templates include:

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REST_CAT (Restoration Category) Definitions

Restoration adjacent to open space: Riparian areas in which compensatory mitigation would be located adjacent to existing open space such that the open space would provide buffer benefits to the riparian area.

Connectivity: Riparian areas in which compensatory mitigation would connect two areas of natural open space to create a continuous open space feature. Restoration of connectivity was evaluated in a riverine hydrogeomorphic context to identify riverine/riparian features that would allow for the movement of wildlife, sediments, and nutrients.

Sensitive species habitat: Riparian areas in which compensatory mitigation would meet the habitat needs of sensitive species.

Water quality + wildlife habitat: Riparian areas in which compensatory mitigation would increase water quality and flood control functions and services while also providing benefits to wildlife habitat.

Water quality only: Riparian areas in which compensatory mitigation would increase water quality and flood control functions and services without benefits to wildlife habitat

Credits

Smith, R. D. and C. V. Klimas. 2006. Riparian Ecosystem Restoration Plan for the San Jacinto River Watershed: General Design Criteria and Site Selection. U.S. Army Engineer Research and Development Center, Environmental Laboratory, Vicksburg, MS. Final Report to the U.S. Army Corps of Engineers, Los Angeles District, Regulatory Branch.

Use Limitations

There are no access and use limitations for this layer.

Increase in Habitat Integrity Index Scenario 1 – Santa Margarita

Summary

Increase in habitat integrity expected to result from Scenario 1: restoration within the riparian ecosystem immediately adjacent to waters of the U.S., e.g., stream channel geomorphic features, riparian vegetation, etc.

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Description

The increase in habitat integrity under Scenario 1 was determined by subtracting the baseline habitat integrity from the habitat integrity calculated under Scenario 1 for each local drainage area.

Credits

Smith, R. D. and C. V. Klimas. 2006. Riparian Ecosystem Restoration Plan for the San Jacinto River Watershed: General Design Criteria and Site Selection. U.S. Army Engineer Research and Development Center, Environmental Laboratory, Vicksburg, MS. Final Report to the U.S. Army Corps of Engineers, Los Angeles District, Regulatory Branch
USACE

Use Limitations

There are no access and use limitations for this layer.

Increase in Habitat Integrity Index Scenario 2 – Santa Margarita

Summary

Increase in habitat integrity expected to result from Scenario 2; restoration of active or former rangeland within upland areas to native vegetation.

Description

The increase in habitat integrity under Scenario 2 was determined by subtracting the baseline habitat integrity from the habitat integrity calculated under Scenario 2 for each local drainage area.

Credits

Smith, R. D. and C. V. Klimas. 2006. Riparian Ecosystem Restoration Plan for the San Jacinto River Watershed: General Design Criteria and Site Selection. U.S. Army Engineer Research and Development Center, Environmental Laboratory, Vicksburg, MS. Final Report to the U.S. Army Corps of Engineers, Los Angeles District, Regulatory Branch

Use Limitations

There are no access and use limitations for this layer.

Increase in Habitat Integrity Index Scenario 3 – Santa Margarita

Summary

Increase in habitat integrity expected to result from Scenario 3: restoration of agricultural lands as well as active or former rangeland within upland areas to native vegetation.

Description

The increase in habitat integrity under Scenario 3 was determined by subtracting the baseline habitat integrity from the habitat integrity calculated under Scenario 3 for each local drainage area.

Credits

Smith, R. D. and C. V. Klimas. 2006. Riparian Ecosystem Restoration Plan for the San Jacinto River Watershed: General Design Criteria and Site Selection. U.S. Army Engineer Research and Development Center, Environmental Laboratory, Vicksburg, MS. Final Report to the U.S. Army Corps of Engineers, Los Angeles District, Regulatory Branch

Use Limitations

There are no access and use limitations for this layer.

Increase in Hydrologic Integrity Index Scenario 1 – Santa Margarita

Summary

Increase in hydrologic integrity expected to result from Scenario 1: restoration within the riparian ecosystem immediately adjacent to waters of the U.S., e.g., stream channel geomorphic features, riparian vegetation, etc.

Description

The increase in hydrologic integrity under Scenario 1 was determined by subtracting the baseline hydrologic integrity from the hydrologic integrity calculated under Scenario 1 for each local drainage area.

Credits

Smith, R. D. and C. V. Klimas. 2006. Riparian Ecosystem Restoration Plan for the San Jacinto River Watershed: General Design Criteria and Site Selection. U.S. Army Engineer Research and Development Center, Environmental Laboratory, Vicksburg, MS. Final Report to the U.S. Army Corps of Engineers, Los Angeles District, Regulatory Branch

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Use Limitations

There are no access and use limitations for this layer.

Increase in Hydrologic Integrity Index Scenario 2 – Santa Margarita

Summary

Increase in hydrologic integrity expected to result from Scenario 2: restoration of active or former rangeland within upland areas to native vegetation.

Description

The increase in hydrologic integrity under Scenario 2 was determined by subtracting the baseline hydrologic integrity from the hydrologic integrity calculated under Scenario 2 for each local drainage area.

Credits

Smith, R. D. and C. V. Klimas. 2006. Riparian Ecosystem Restoration Plan for the San Jacinto River Watershed: General Design Criteria and Site Selection. U.S. Army Engineer Research and Development Center, Environmental Laboratory, Vicksburg, MS. Final Report to the U.S. Army Corps of Engineers, Los Angeles District, Regulatory Branch

Use Limitations

There are no access and use limitations for this layer.

Increase in Hydrologic Integrity Index Scenario 3 – Santa Margarita

Summary

Increase in hydrologic integrity expected to result from restoration of agricultural lands as well as active or former rangeland within upland areas to native vegetation.

Description

The increase in hydrologic integrity under Scenario 3 was determined by subtracting the baseline hydrologic integrity from the hydrologic integrity calculated under Scenario 3 for each local drainage area.

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Credits

Smith, R. D. and C. V. Klimas. 2006. Riparian Ecosystem Restoration Plan for the San Jacinto River Watershed: General Design Criteria and Site Selection. U.S. Army Engineer Research and Development Center, Environmental Laboratory, Vicksburg, MS. Final Report to the U.S. Army Corps of Engineers, Los Angeles District, Regulatory Branch

Use Limitations

There are no access and use limitations for this layer.

Increase in Water Quality Integrity Index Scenario 1 – Santa Margarita

Summary

Increase in water quality integrity expected to result from Scenario 1: restoration within the riparian ecosystem immediately adjacent to waters of the U.S., e.g., stream channel geomorphic features, riparian vegetation, etc.

Description

The increase in water quality integrity under Scenario 1 was determined by subtracting the baseline hydrologic integrity from the water quality integrity calculated under Scenario 1 for each local drainage area.

Credits

Smith, R. D. and C. V. Klimas. 2006. Riparian Ecosystem Restoration Plan for the San Jacinto River Watershed: General Design Criteria and Site Selection. U.S. Army Engineer Research and Development Center, Environmental Laboratory, Vicksburg, MS. Final Report to the U.S. Army Corps of Engineers, Los Angeles District, Regulatory Branch

Use Limitations

There are no access and use limitations for this layer.

Increase in Water Quality Integrity Index Scenario 2 – Santa Margarita

Summary

Increase in water quality integrity expected to result from Scenario 2: restoration of active or former rangeland within upland areas to native vegetation.

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Description

The increase in water quality integrity under Scenario 2 was determined by subtracting the baseline water quality integrity from the water quality integrity calculated under Scenario 2 for each local drainage area.

Credits

Smith, R. D. and C. V. Klimas. 2006. Riparian Ecosystem Restoration Plan for the San Jacinto River Watershed: General Design Criteria and Site Selection. U.S. Army Engineer Research and Development Center, Environmental Laboratory, Vicksburg, MS. Final Report to the U.S. Army Corps of Engineers, Los Angeles District, Regulatory Branch

Use Limitations

There are no access and use limitations for this layer.

Increase in Water Quality Integrity Index Scenario 3 – Santa Margarita

Summary

Increase in water quality integrity expected to result from Scenario 3: restoration of agricultural lands as well as active or former rangeland within upland areas to native vegetation.

Description

The increase in water quality integrity under Scenario 3 was determined by subtracting the baseline water quality integrity from the water quality integrity calculated under Scenario 3 for each local drainage area.

Credits

Smith, R. D. and C. V. Klimas. 2006. Riparian Ecosystem Restoration Plan for the San Jacinto River Watershed: General Design Criteria and Site Selection. U.S. Army Engineer Research and Development Center, Environmental Laboratory, Vicksburg, MS. Final Report to the U.S. Army Corps of Engineers, Los Angeles District, Regulatory Branch.

Use Limitations

There are no access and use limitations for this layer

OTHER GIS LAYERS (NON - USACE SAMP) FOR SANTA MARGARITA RIVER WATERSHED

U.S. EPA Assessed Impaired Waterbodies, 303(B) and 303(D) Streams, Santa Margarita

Summary

This is a line topology layer for the Santa Margarita River Watershed. Under Section 303(d) of the federal Clean Water Act, states, territories and authorized tribes are required to develop a list of water quality limited segments. The 303(d)-listed waters do not meet water quality standards, even after minimum required levels of pollution control technology have been installed. The Clean Water Act requires that in California, the State Water Resources Control Board (SWRCB) establish priority rankings for water bodies on the lists and develop action plans, called Total Maximum Daily Loads (TMDLs), to improve water quality. Every two years, the SWRCB submits a report on the State's water quality to the U.S. EPA pursuant to Section 305(b) of the Clean Water Act. The report provides water quality information to the general public and serves as the basis for U.S. EPA's National Water Quality Inventory Report to Congress.

Description

This dataset is a compilation of the linear water bodies (rivers, streams, coastlines) in California assessed under Sections 303(d) and 305(b) of the Clean Water Act for the 2010 listing cycle. Each water body is assigned a unique Water Body ID (WBID) number as well as selected associated information (water body name, Regional Water Quality Control Board number, etc.).

This layer provides a spatial representation of the assessed and pollutant-impaired water bodies in California for the 2010 listing cycle.

Credits

SWRCB

U.S. EPA, Office of Information Management and Analysis

Use Limitations

There are no access and use limitations for this layer.

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Faults, Santa Margarita

Summary

The purpose of this data layer is to show all known fault lines in the Upper Santa Margarita River Watershed of Riverside County. This includes Alquist-Priolo linework and County Geology linework. The accuracy of this data allows for general reference analysis and mapping. Detailed spatial calculations and confirmation of location can be obtained from the Chief Geologist of Riverside County at (951) 955-6863.

Description

County Faults/Fault Zones (Per Riverside County General Plan 10/2003) Alquist-Priolo Earthquake Fault Zones have been designated by the California Division of Mines and Geology (CDMG) for the Elsinore, San Jacinto, and San Andreas fault zones in Riverside County. The County of Riverside has zoned fault systems and required special studies prior to development. These are referred to as County Fault Zones. The County regulates most development projects within earthquake fault zones. Before a project can be permitted within an Alquist Priolo Earthquake Fault Zone, County Fault Zone, or within 150 feet of any other potentially active or active fault mapped in published USGS or CDMG reports, a geologic investigation must demonstrate that proposed buildings will not be constructed across active faults.

Credits

USGS, CDMG, Riverside County Planning Department

Use Limitations

There are no access or use limitations for this layer.

Flood Control Facilities (Detention Basins) - Riverside County Flood Control District, Santa Margarita

Summary

This layer contains the RCFCD facilities within the Upper Santa Margarita River Watershed

Description

This is a polygon layer showing the extent of the RCFCD detention, debris and retention basin facilities.

Credits

This layer was developed by RCFCD, 12/11/14.

Use Limitations

There are no access and use limitations for this layer.

Flood Control, Other Structures - RCFCD, Santa Margarita

Summary

This layer was provided by the RCFCD. It represents bridges, channels, canals, aqueducts and other structures used for flood control.

Description

The Structures layer is composed using a line topology. All structures features are named by both structure name and water body name. This layer has been clipped to the boundary of the Upper Santa Margarita River Watershed.

Credits

RCFCD, 12/11/2014

Use Limitations

There are no access and use limitations for this layer.

Flood Zones - FEMA 100 Years , Santa Margarita

Summary

The flood data used in this layer is Q3 flood data derived from the Flood Insurance Rate Maps (FIRM) published by the Federal Emergency Management Agency (FEMA). The file is georeferenced to earth's surface using geographic projection and decimal degree coordinate system. The specifications for the horizontal control of Q3 Flood Data files are consistent with those required for mapping at a scale of 1:24000.

Description

The FIRM is the basis for floodplain management, mitigation, and insurance activities for the National Flood Insurance Program (NFIP). Insurance applications include enforcement of the mandatory purchase requirement of the Flood Disaster Protection Act which "... requires the purchase of flood insurance by property owners who are being assisted by Federal programs or by Federally supervised, regulated or insured agencies or institutions in the acquisition or improvement of land facilities located or to be located in identified areas having special flood hazards" (Section 2 (b) (4) of the 1973 Flood Disaster Protection Act). In addition to the identification of Special Flood Hazard Areas, the risk zones shown on the FIRMs are the basis

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for the establishment of premium rates for flood coverage offered through the NFIP. Q3 Flood Data files are intended to convey certain key features from the existing hard copy FIRM to provide users with automated flood risk data. Edge-matching errors, overlaps and deficiencies in coverage, and similar problems are not corrected during digitizing or post-processing. These data may be used to locate Special Flood Hazard Areas (SFHAs). More detailed information may be obtained from the paper FIRM.

Credits

FEMA Mitigation Directorate Q3 Flood Data Program 500 C Street, SW Washington, D.C.
20472

Use Limitations

There are no access and use limitations for this layer.

Rock Type (Geology), Santa Margarita

Summary

This layer was downloaded from the California Geological Survey (CGS) and provides a common geology structure and format to allow creation of regional maps that depict age and lithology of geological units.

Description

These digital maps are a reformulation of previously published maps, primarily maps of states. The reformulation gives all the maps the same structure and format, allowing them to be combined into regional maps. The associated data tables have information about age and lithology of the map units, also in a standard format.

Credits

USGS, CGS

Use Limitations

There are no access and use limitations for this layer.

Habitat, Critical, US Fish and Wildlife, Santa Margarita

Summary

Critical habitat areas are considered essential for the conservation of a listed species. Federal agencies are required to consult with the U.S. Fish and Wildlife Service (USFWS) on actions they carry out, fund, or authorize to ensure that their actions will not destroy or adversely modify critical habitat. These areas provide notice to the public and land managers of the importance of these areas to the conservation of a listed species. Special protections and/or restrictions are possible in areas where Federal funding, permits, licenses, authorizations, or actions occur or are required.

Description

When a species is proposed for listing as endangered or threatened under the Endangered Species Act, the USFWS must consider whether there are areas of habitat believed to be essential the species' conservation. Those areas may be proposed for designation as "critical habitat." Critical habitat is a term defined and used in the Endangered Species Act. It is a specific geographic area(s) that contains features essential for the conservation of a threatened or endangered species and that may require special management and protection. Critical habitat may include an area that is not currently occupied by the species but that will be needed for its recovery. An area is designated as "critical habitat" after the USFWS publishes a proposed Federal regulation in the Federal Register and receives and considers public comments on the proposal. The final boundaries of the critical habitat are also published in the Federal Register.

Credits

USFWS

Use Limitations

There are no access and use limitations for this layer.

Land Cover, Santa Margarita

Summary

National Land Cover Database 2006 (NLCD 2006) is a 16-class land cover classification scheme that has been applied consistently across the conterminous United States at a spatial resolution of 30 meters. NLCD 2006 is based primarily on a decision-tree classification of circa 2006 Landsat satellite data. NLCD 2006 also quantifies land cover change between the years 2001 to 2006.

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Description

The NLCD2006 land cover change product was generated by comparing spectral characteristics of Landsat imagery between 2001 and 2006, on an individual path/row basis, using protocols to identify and label change based on the trajectory from NLCD 2001 products. The National Land Cover Database was provided by RCFCD.

Credits

USGS Earth Resources Observation and Science (EROS) Center MRLC Project 47914 252nd Street Sioux Falls, SD 57198-0001

Use Limitations

There are no access and use limitations for this layer.

Land Use, Southern California Association of Governments (SCAG), Santa Margarita

Summary

The SCAG periodically performs a survey of land use in the greater Los Angeles area including Riverside County. The SCAG classifications are based on a review of aerial photography within the boundaries of parcels as determined by Riverside County.

Description

This is a polygon layer with 3 categories have increasing levels of specificity. Category 1 is the most general and Category 3 is the most specific. The version used for the SAMP GIS database was completed in 2008.

Credits

SCAG, 2008

Use Limitations

There are no access and use limitations for this layer.

Levees - RCFCD, Santa Margarita

Summary

This layer represents levee structures managed by the RCFCD.

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Description

The levee structures in this layer are associated with rivers and reservoirs. They prevent flooding and are maintained by the RCFCD.

Credits

RCFCD, 2014

Use Limitations

There are no access and use limitations for this layer.

Liquefaction, Santa Margarita

Summary

This layer is a generalized description of areas of liquefaction susceptibility. This coverage is intended for reference only in cartographic products and analysis.

Description

This data set of polygon features represents Riverside County's liquefaction zones. At each location, the map predicts the approximate probability that shallow wet sands will liquefy and cause surface manifestations of liquefaction such as sand boils and ground cracking.

Credits

Prepared by Earth Consultants International for Riverside County.

Use Limitations

This coverage is intended for reference only in cartographic products and analysis.

Multi-Species Habitat Conservation Plan (MSHCP) Conserved Areas, Santa Margarita

Summary

The Western Riverside County Regional Conservation Authority (RCA) was created as a public agency to secure, control, and perpetuate land and facilities to establish habitat reserves for conservation and the protection of species covered by the MSHCP. The main objective is to create a reserve system that provides habitat for approximately 146 species of plants and animals. The goal of the MSHCP is to obtain approximately 153,000 acres of open space, ensuring linkage to existing reserves within the western portion of Riverside County. The RCA

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MSHCP Conserved Lands dataset defines these acquisitions and enumerates the progress toward the MSHCP acreage goal.

Description

This layer represents a polygon layer depicting a mixture of lands that have been designated in the MSHCP.

Credits

RCA

Use Limitations

There are no access and use limitations for this layer.

National Wetlands Inventory, Santa Margarita

Summary

The present goal of the USFWS is to provide the citizens of the United States and its Trust Territories with current geospatially referenced information on the status, extent, characteristics and functions of wetlands, riparian, deepwater and related aquatic habitats in priority areas to promote the understanding and conservation of these resources.

Description

This data set represents the extent, approximate location and type of wetlands and deepwater habitats in the conterminous United States. These data delineate the areal extent of wetlands and surface waters as defined by Cowardin et al. (1979). Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and near shore coastal waters. Some deepwater reef communities (coral or tubercid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery. By policy, the USFWS also excludes certain types of "farmed wetlands" as may be defined by the Food Security Act or that do not coincide with the Cowardin et al. definition. More information is available by contacting the USFWS' Regional Wetland Coordinator (<https://www.fws.gov/Wetlands/nwi/RWC.html>) for additional information on what types of farmed wetlands are included on wetland maps.

Credits

USFWS

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Use Limitations

None. Acknowledgement of the USFWS and (or) the National Wetlands Inventory would be appreciated in products derived from these data. There are no access or use limitations for this layer.

National Hydrography Dataset (NHD), Santa Margarita

Summary

The NHD is a national framework for assigning reach addresses to water-related entities, such as industrial discharges, drinking water supplies, fish habitat areas, wild and scenic rivers. Reach addresses establish the locations of these entities relative to one another within the NHD surface water drainage network, much like addresses on streets. Once linked to the NHD by their reach addresses, the upstream/downstream relationships of these water-related entities--and any associated information about them--can be analyzed using software tools ranging from spreadsheets to geographic information systems (GIS). GIS can also be used to combine NHD-based network analysis with other data layers, such as soils, land use and population, to help understand and display their respective effects upon one another. Furthermore, because the NHD provides a nationally consistent framework for addressing and analysis, water-related information linked to reach addresses by one organization (national, state, local) can be shared with other organizations and easily integrated into many different types of applications to the benefit of all.

Description

The NHD is a feature-based database that interconnects and uniquely identifies the stream segments or reaches that make up the nation's surface water drainage system. NHD data was originally developed at 1:100,000-scale and exists at that scale for the whole country. This high-resolution NHD, generally developed at 1:24,000/1:12,000 scale, adds detail to the original 1:100,000-scale NHD. (Data for Alaska, Puerto Rico and the Virgin Islands was developed at high-resolution, not 1:100,000 scale.) Local resolution NHD is being developed where partners and data exist. The NHD contains reach codes for networked features, flow direction, names, and centerline representations for areal water bodies. Reaches are also defined on waterbodies and the approximate shorelines of the Great Lakes, the Atlantic and Pacific Oceans and the Gulf of Mexico. The NHD also incorporates the National Spatial Data Infrastructure framework criteria established by the Federal Geographic Data Committee.

Credits

USGS

Use Limitations

There are no access or use limitation for this layer.

Rain Gauges – Santa Margarita

Summary

The rain gauge locations were provided by RCFCDD.

Description

The Gauge name: Temecula - Located in the City of Temecula

Credits

RCFCDD, 2014

Use Limitations

There are no access and use limitations for this layer.

Soil Survey (SSURGO) – Santa Margarita

Summary

The SSURGO Soils database is produced by the Natural Resource Conservation Service (NRCS) of the U.S. Department of Agriculture (USDA). It provides a detailed delineation of soil types.

Description

The SSURGO soils database contains information about soil as collected by the National Cooperative Soil Survey over the course of a century. The information was gathered by walking over the land and observing the soil. Many soil samples were analyzed in laboratories. The map units describe soils and other components that have unique properties, interpretations, and productivity. The information was collected at scales ranging from 1:12,000 to 1:63,360. More details were gathered at a scale of 1:12,000 than at a scale of 1:63,360. The mapping is intended for natural resource planning and management by landowners, townships, and counties. Some knowledge of soils data and map scale is necessary to avoid misunderstandings.

Credits

NRCS, USDA, 2014

Use Limitations

There are no access and use limitations for this layer.

Stream Hydromodification, Santa Margarita

Summary

The Semi-Regional Watershed Boundary dataset was developed for the Stormwater and Water Conservation Tracking Tool for Riverside County and its co-permittee cities under the NPDES municipal separate storm sewer system (MS4) permit. This layer was developed to identify existing channels' susceptible to Hydromodification, (channel engineering configuration) and display susceptibility to Total Maximum Daily Loads (TMDLs) and Clean Water Act Section 303d-listings of water quality impaired receiving waters.

Description

This layer was developed to delineate and locate the channelized drainage features in Riverside County and to provide pertinent information for inventory and analysis. The attributes collected included but were not limited to:

- a. Physical Characteristics (material)
- b. Susceptibility to Hydromodification
- c. Facilities draining to water bodies with an assigned TMDL or 303(d)-listed water bodies

Data was provided by RCFCD. The channel data was checked and/or field verified, and topology was applied for purposes of linear referencing. State-provided TMDL and 303d layers were applied to the data and channels and were attributed with facilities where TMDL or 303d occurred downstream. Channels were attributed as being susceptible or not susceptible to hydromodification.

The Channel Lines are classified as Engineered, Earthen; Engineered Fully Hardened, Engineered, Partially Hardened, Natural, Not Engineered, Earthen, RBF Added Facility, Unknown. Original Feature Class created by the Riverside County Transportation Department (RCTD).

Credits

RCFCD

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Use Limitations

There are no access and use limitations for this layer.

Vacant Land, Planned for Development, Santa Margarita

Summary

This layer was derived from currently vacant land that is planned for development by either the General Plan of the County of Riverside or the General Plans of the cities, for portions within the boundaries of the Upper Santa Margarita River Watershed.

Description

The boundaries of the vacant areas are from the Riverside County Assessor parcels. Each vacant parcel has an Assessor Parcel Number (APN) which can be used to determine parcel specific information. Vacant parcels shown have an area of at least 100,000 square feet and have no structures based on tax records and visual assessment.

Credits

Riverside County TLMA – parcel boundaries

Riverside County Assessor – APN and tax data

Riverside County General Plan, General Plans of local municipalities

AECOM - Parcel vacancy assessment

Use Limitations

There are no access or use limitations for this layer.

Wildlife Linkages - RCA, Santa Margarita

Summary

This layer was derived from a board presentation made to the RCA. It details wildlife corridors or linkages between reserves and conservation areas in western Riverside County.

Description

The main focus of this plan is to provide paths for the mountain lion to move between habitats. Proposed and existing connectors between the Cleveland National Forest, and various wilderness areas were presented to the board and are planned for implementation.

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Credits

RCA

AECOM - GIS data digitized from RCA data

Use Limitations

This layer has been digitized from a briefing and may not be sufficiently accurate for detailed analysis.

Wildlife Linkages-South Coast Wildlands , Santa Margarita

Summary

The purpose of this generalized feature class is to delineate the outer boundaries of the linkages identified by the South Coast Missing Linkages Project.

Description

A Linkage Design addresses the potential movement needs for several focal species. For more details on the methods used for creating each Linkage Design refer to the individual linkage reports at <http://www.scwildlands.org/reports.aspx>

Credits

South Coast Wildlands: www.scwildlands.org

South Coast Missing Linkages: A Wildland Network for the South Coast Ecoregion

Use Limitations

A data sharing agreement is required to access this feature class.

CPAD 2016a SuperUnits

Summary

The California Protected Areas Database (CPAD) is suitable for a wide range of planning, assessment, analysis and display purposes. CPAD should not be used as the basis for regulatory, legal or other specific governmental actions. See the CPAD Data Disclaimer for more information.

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Description

The CPAD contains data on lands owned in fee by governments, non-profits and some private entities that are protected for open space purposes. Data includes all such areas in California, from small urban parks to large national parks and forests, mostly aligned to assessor parcel boundaries. Data is collected by Holdings (parcels) which are aggregated to Units (commonly named areas within counties) and Super Units (commonly named areas generally).

Credits

California Protected Areas Database (CPAD - www.calands.org)

Use Limitations

All users must review the CPAD Data Disclaimer before using the dataset - CPAD is generally available to any user.

PQP Conserved Lands, Santa Margarita

Summary

The identification of Public/Quasi-Public Conserved lands for Western Riverside County (WRC-PQP) is used as a baseline for implementation of the MSHCP reserve design, as adopted by the Riverside County Board of Supervisors June 17, 2003 in order to monitor and meet the reporting requirements of the MSHCP. It is a subset of the MSHCP Plan Area, lands known to be in public/private ownership and expected to be managed for open space value and/or in a manner that contributes to the conservation of covered species as depicted in FIGURE 3-1 of the MSHCP, Volume1.

Description

This feature class contains properties within Western Riverside County owned, managed or maintained by public agencies for the purposes of conservation. Additional reserve lands that contribute toward the MSHCP acreage goal of 153,000 acres of conservation, are depicted in an additional data set called RCA MSHCP Conserved Lands. Together these two datasets represent a more complete portrayal of open space areas reserved for conservation.

Credits

RCA

Use Limitation

There are no access and use limitations for this layer.

A-2. San Jacinto River Watershed

SAMP DATA LAYERS FOR SAN JACINTO RIVER WATERSHED

PLANNING LEVEL DELINEATION AND GEOSPATIAL CHARACTERIZATION OF AQUATIC RESOURCES OF SAN JACINTO AND PORTIONS OF SANTA MARGARITA RIVER WATERSHEDS (PLD)

San Jacinto River Watershed Boundary

Summary

The San Jacinto River Watershed represents the land area that drains into the San Jacinto River. The Western Riverside County SAMP encompasses the San Jacinto River Watershed as well as the San Jacinto River Watershed. The boundary of the San Jacinto River Watershed is the extent of the San Jacinto section of the Western Riverside County SAMP.

Description

The boundary of the San Jacinto River Watershed was developed by the USACE, Los Angeles District and the U.S. Army Engineer Research and Development Center (ERDC). The layer was developed based on hydrologic analysis of the topography and the storm water flow pattern.

Credits

USACE, Los Angeles District

Lichvar, R. 2003. Planning Level Delineation and Geospatial Characterization of Aquatic Resources for San Jacinto and Portions of Santa Margarita Watersheds, Riverside County, California U.S. Army Engineer Research Development Center (ERDC) Cold Regions Research and Engineering Laboratory (CRREL).

Use Limitations

There are no access and use limitations for this layer.

Mainstem Waterways, San Jacinto

Summary

Mainstem waterways in the San Jacinto River Watershed were identified and mapped. The large differences in length and area of the mainstem channels in these reaches reflects the extreme differences between urban areas and more natural landscapes in terms of the longitudinal homogeneity of vegetation cover, engineering, and other types of disturbance that occur along stream channels and their associated riparian ecosystems.

These mainstem waterways are Waters of the United States (WoUS) and regulated under Section 404 of the Clean Water Act (jurisdictional waters). The areas, delineated as WoUS in the PLD, met the requirements outlined in the Corps of Engineers Wetlands Delineation Manual (Environmental Laboratory 1987) and subsequent guidance from the Office of the Chief of Engineers, but are subject to field verification.

Description

A mainstem waterway is the primary downstream segment of a stream or river, classified in Strahler system of hydrologic classification as the highest order stream in a drainage basin, as contrasted to its upstream tributaries (lower classified streams). Water enters the mainstem from the upstream tributaries (riparian reaches). In general, as stream orders increase, the width of the bankfull channel increases, and the size of the area supporting riparian vegetation increases.

Credits

Lichvar, R. 2003. Planning Level Delineation and Geospatial Characterization of Aquatic Resources for San Jacinto and Portions of Santa Margarita Watersheds, Riverside County, California U.S. Army Engineer Research Development Center (ERDC) Cold Regions Research and Engineering Laboratory (CRREL).

Use Limitations

There are no access and use limitations for this layer. Waters delineated in the PLD are subject to field verification.

Mainstem Tributaries – San Jacinto

Summary

Each of the mainstem tributaries in the San Jacinto River Watershed were identified and mapped. These mainstem waterways are WoUS and regulated under Section 404 of the Clean Water Act (e.g. jurisdictional waters). The areas, delineated as WoUS in the PLD, met the requirements

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outlined in the Corps of Engineers Wetlands Delineation Manual (Environmental Laboratory 1987 and subsequent guidance from the Office of the Chief of Engineers, but are subject to field verification.

Description

Mainstem tributaries are lower order streams that contribute drainage to mainstems (higher order streams). First order streams (i.e., the smallest mapped streams, or stream branches, without tributaries) discharge into second order streams (i.e., branches of streams receiving discharges from only first order streams). Lower order streams may discharge directly into a third order stream (i.e., larger branches of a stream receiving first and second order tributaries).

Credits

Lichvar, R. 2003. Planning Level Delineation and Geospatial Characterization of Aquatic Resources for San Jacinto and Portions of Santa Margarita Watersheds, Riverside County, California U.S. Army Engineer Research Development Center (ERDC) Cold Regions Research and Engineering Laboratory (CRREL).

Use Limitations

There are no access and use limitations for this layer. Waters delineated in the PLD are subject to field verification.

Springs, San Jacinto

Summary

Jurisdictional springs were identified and mapped throughout the San Jacinto River Watershed.

Description

Springs identified (at the planning level) as jurisdictional under the Clean Water Act and under the regulatory authority of the USACE.

Credits

Lichvar, R. 2003. Planning Level Delineation and Geospatial Characterization of Aquatic Resources for San Jacinto and Portions of Santa Margarita Watersheds, Riverside County, California U.S. Army Engineer Research Development Center (ERDC) Cold Regions Research and Engineering Laboratory (CRREL).

Use Limitations

There are no access and use limitations for this layer. Waters delineated in the PLD are subject to field verification.

Washes, San Jacinto

Summary

Jurisdictional washes identified throughout the SAMP area.

Description

Jurisdictional washes identified (at the planning level) as jurisdictional under the Clean Water Act and under the regulatory authority of the USACE.

Credits

Lichvar, R. 2003. Planning Level Delineation and Geospatial Characterization of Aquatic Resources for San Jacinto and Portions of Santa Margarita Watersheds, Riverside County, California U.S. Army Engineer Research Development Center (ERDC) Cold Regions Research and Engineering Laboratory (CRREL).

Use Limitations

There are no access and use limitations for this layer. Waters delineated in the PLD are subject to field verification.

Hydrogeomorphic Floodplain Units, San Jacinto

Summary

Hydrogeomorphic floodplain units were mapped for the purposes of indicating flood frequency for use in delineation purposes. Typically, floodplain terraces develop on second-order, third-order, and greater Strahler stream types. First-order streams typically lack floodplain terraces since they are located on steeper slopes, have smaller drainage areas, and are confined to bedrock channels that limit their ability to create floodplain terraces

Description

The two floodplain map units identified in the field were the active and abandoned floodplain terraces. The active floodplain contains the bankfull and the adjacent active floodplain terrace that contains features associated with frequent flooding. These features include high-flow channels, unvegetated surfaces, bed and bank, and a break in slope. The abandoned floodplain terrace is above the active floodplain and contains features associated with infrequent and seasonally wet areas. Potentially regulated hydrologic features in this terrace are driven by infrequent overbank flooding, local precipitation, and occasional groundwater discharge within paleo channels and other depressional features. Often there is a distinct change of vegetation community from the active to the abandoned floodplain.

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Credits

Lichvar, R. 2003. Planning Level Delineation and Geospatial Characterization of Aquatic Resources for San Jacinto and Portions of Santa Margarita Watersheds, Riverside County, California U.S. Army Engineer Research Development Center (ERDC) Cold Regions Research and Engineering Laboratory (CRREL).

Regulatory Probability Rating Units, San Jacinto

Summary

The modification of standard delineation sampling protocols and the development of wetland probability ratings for Section 404 regulatory purposes for the riparian vegetation map units allowed for a watershed-scale delineation. The sampling protocols outlined in the Corps of Engineers Wetlands Delineation Manual (Environmental Laboratory, 1987) and “Waters of the United States” (WoUS) at 33 CFR 328 were modified for use at the watershed scale. To delineate at this scale, riparian corridors were mapped for hydrogeomorphic surfaces representing a combined bankfull and active floodplain and a separate abandoned floodplain terrace, which were later interpreted for return-interval requirements under Section 404. Individual vegetation units at the species-association level were sampled at 169 sites to develop a characterization of the indicators for both wetlands and other WoUS.

Description

By combining field sampling results for wetland occurrences within various mapped vegetation types with the flood frequency information obtained from the geomorphic surface map, probability ratings intended for regulatory purposes were developed to accommodate all variations. Six categories of wetland or WoUS ratings were assigned to each of the riparian vegetation units, with ratings ranging from always regulated to upland or not regulated.

Credits

Lichvar, R. 2003. Planning Level Delineation and Geospatial Characterization of Aquatic Resources for San Jacinto and Portions of Santa Margarita Watersheds, Riverside County, California U.S. Army Engineer Research Development Center (ERDC) Cold Regions Research and Engineering Laboratory (CRREL).

Vegetation Species Association Units, San Jacinto

Summary

Vegetation map units were developed through a series of modifications to the California natural community classification by Holland (1986). In previous SAMP efforts in other watersheds in southern California, ERDC found that existing vegetation classifications lacked sensitivity for use in watershed-scale wetland delineations.

Description

To meet the needs of identifying wetlands, ERDC developed a classification that followed the hierarchical schemes of both Holland and Sawyer and Keeler-Wolf (1995) but added another level of specificity at the species level. This classification shares the use of growth forms and dominant species, with expanded use of additional species identifiers for both native and non-native units.

Credits

Lichvar, R. 2003. Planning Level Delineation and Geospatial Characterization of Aquatic Resources for San Jacinto and Portions of Santa Margarita Watersheds, Riverside County, California U.S. Army Engineer Research Development Center (ERDC) Cold Regions Research and Engineering Laboratory (CRREL).

Holland, R.F. (1986) Preliminary descriptions of the terrestrial natural communities of California. Unpublished report. California Department of Fish and Game, Sacramento, California.

Sawyer, J., and T. Keeler-Wolf (1995) A Manual of California Vegetation. California Native Plant Society, California.

Use Limitations

There are no access and use limitations for this layer.

ASSESSMENT OF RIPARIAN ECOSYSTEM INTEGRITY: SAN JACINTO AND UPPER SANTA MARGARITA RIVER WATERSHEDS

Habitat Integrity, Scores 7 – 29, San Jacinto

Summary

Each of the 643 riparian reaches in the San Jacinto River Watershed were identified and assessed for habitat integrity.

Description

Habitat integrity refers to the quality, or state of being complete, and implies correspondence with a natural or original condition of the resource. Riparian ecosystems that ranked high for high ecosystem “integrity” were considered to: (1) exhibit the full range of physical, chemical, and biological attributes and processes that characterized riparian ecosystems in the southern California region over short and long term cycles prior to cultural alteration; and (2) support a balanced, integrated, and adaptive biological community resulting from natural evolutionary and biogeographic processes. For detailed description of the habitat integrity rating methodology please refer to the USACE report "Assessment of Riparian Ecosystem Integrity: San Jacinto and Upper Santa Margarita River Watersheds, Riverside County, California" by R.D. Smith, dated January 2003.

Credits

Smith, R.D. 2003. Assessment of Riparian Ecosystem Integrity: San Jacinto and Upper Santa Margarita River Watersheds, Riverside County, California. U.S. Army Engineer Research and Development Center, Waterways Experiment Station, Vicksburg, MS. Final Report to the U.S. Army Corps of Engineers, Los Angeles District.

Use Limitations

There are no access and use limitations for this layer.

Hydrologic Integrity (Index Scores 12-25), San Jacinto

Summary

Each of the 643 riparian reaches in the San Jacinto River Watershed were identified and assessed for hydrologic integrity.

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Description

Hydrologic integrity refers to the quality, or state of being complete, and implies correspondence with a natural or original condition of the resource. Riparian ecosystems that ranked high for high ecosystem “integrity” were considered to: (1) exhibit the full range of physical, chemical, and biological attributes and processes that characterized riparian ecosystems in the southern California region over short and long term cycles prior to cultural alteration; and (2) support a balanced, integrated, and adaptive biological community resulting from natural evolutionary and biogeographic processes. For detailed description of the habitat integrity rating methodology please refer to the USACE report "Assessment of Riparian Ecosystem Integrity: San Jacinto and Upper Santa Margarita River Watersheds, Riverside County, California" by R.D. Smith, dated January 2003.

Credits

Smith, R.D. 2003. Assessment of Riparian Ecosystem Integrity: San Jacinto and Upper Santa Margarita River Watersheds, Riverside County, California. U.S. Army Engineer Research and Development Center, Waterways Experiment Station, Vicksburg, MS. Final Report to the U.S. Army Corps of Engineers, Los Angeles District.

Use Limitations

There are no access and use limitations for this layer.

Water Quality Integrity (Index Scores 16-40), San Jacinto

Summary

Each of the 643 riparian reaches in the San Jacinto River Watershed were identified and assessed for water quality integrity.

Description

Water Quality integrity refers to the quality, or state of being complete, and implies correspondence with a natural or original condition of the resource. Riparian ecosystems that ranked high for high ecosystem “integrity” were considered to: (1) exhibit the full range of physical, chemical, and biological attributes and processes that characterized riparian ecosystems in the southern California region over short and long term cycles prior to cultural alteration; and (2) support a balanced, integrated, and adaptive biological community resulting from natural evolutionary and biogeographic processes. For detailed description of the habitat integrity rating methodology please refer to the USACE report "Assessment of Riparian Ecosystem Integrity: San Jacinto and Upper Santa Margarita River Watersheds, Riverside County, California" by R.D. Smith, dated January 2003.

Credits

Smith, R.D. 2003. Assessment of Riparian Ecosystem Integrity: San Jacinto and Upper Santa Margarita River Watersheds, Riverside County, California. U.S. Army Engineer Research and Development Center, Waterways Experiment Station, Vicksburg, MS. Final Report to the U.S. Army Corps of Engineers, Los Angeles District.

Use Limitations

There are no access and use limitations for this layer.

**RIPARIAN ECOSYSTEM RESTORATION PLAN FOR THE SAN JACINTO RIVER
WATERSHED: GENERAL DESIGN CRITERIA AND SITE SELECTION**

Baseline Habitat Integrity – 2006 Normalized Version, San Jacinto

Summary

The change in habitat integrity of each riparian reach was assessed using three different restoration scenarios (normalized index scores) described in the Riparian Ecosystem Restoration Plan for the San Jacinto River Watershed: General Design Criteria and Site Selection (Restoration Plan) by R. Daniel Smith (2006) of ERDC.

Description

One of the primary applications of the Assessment of Riparian Ecosystem Integrity (Smith 2003) is to identify specific riparian reaches where restoration will maximize the increase in riparian ecosystem integrity in the watershed, given a specific set of criteria or objectives. Three restoration scenarios were simulated and changes in integrity were mapped at the local drainage area scale to facilitate a comparison between riparian reaches.

Credits

Smith, R. D. and C. V. Klimas. 2006. Riparian Ecosystem Restoration Plan for the San Jacinto River Watershed: General Design Criteria and Site Selection. U.S. Army Engineer Research and Development Center, Environmental Laboratory, Vicksburg, MS. Final Report to the U.S. Army Corps of Engineers, Los Angeles District, Regulatory Branch.

Use Limitations

There are no access and use limitations for this layer.

Baseline Hydrologic Integrity Normalized Index Scores

Summary

The change in hydrologic integrity of each riparian reach was assessed using three different restoration scenarios (normalized index scores) described in the Riparian Ecosystem Restoration Plan for the San Jacinto River Watershed: General Design Criteria and Site Selection (Restoration Plan) by R. Daniel Smith (2006) of ERDC.

Description

One of the primary applications of the Assessment of Riparian Ecosystem Integrity (Smith 2003) is to identify specific riparian reaches where restoration will maximize the increase in riparian ecosystem integrity in the watershed, given a specific set of criteria or objectives. Three restoration scenarios were simulated and changes in integrity were mapped at the local drainage area scale to facilitate a comparison between riparian reaches.

Credits

Smith, R. D. and C. V. Klimas. 2006. Riparian Ecosystem Restoration Plan for the San Jacinto River Watershed: General Design Criteria and Site Selection. U.S. Army Engineer Research and Development Center, Environmental Laboratory, Vicksburg, MS. Final Report to the U.S. Army Corps of Engineers, Los Angeles District, Regulatory Branch.

Baseline Water Quality Integrity Normalized Index Scores

Summary

The change in water quality integrity of each riparian reach was assessed using three different restoration scenarios (normalized index scores) described in the Riparian Ecosystem Restoration Plan for the San Jacinto River Watershed: General Design Criteria and Site Selection (Restoration Plan) by R. Daniel Smith (2006) of ERDC.

Description

One of the primary applications of the Assessment of Riparian Ecosystem Integrity (Smith 2003) is to identify specific riparian reaches where restoration will maximize the increase in riparian ecosystem integrity in the watershed, given a specific set of criteria or objectives. Three restoration scenarios were simulated and changes in integrity were mapped at the local drainage area scale to facilitate a comparison between riparian reaches.

Credits

Smith, R. D. and C. V. Klimas. 2006. Riparian Ecosystem Restoration Plan for the San Jacinto River Watershed: General Design Criteria and Site Selection. U.S. Army Engineer

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Western Riverside County Special Area Management Plan GIS Database

Research and Development Center, Environmental Laboratory, Vicksburg, MS. Final Report to the U.S. Army Corps of Engineers, Los Angeles District, Regulatory Branch.

Geomorphic Zones of the Watershed, San Jacinto

Summary

The geomorphic zones reflect fundamental geomorphic characteristics under “equilibrium” conditions. Geomorphology rating is an indicator of the likelihood of erosion from storm water flow.

Description

Seven different geomorphology zones were identified in the analysis of the geomorphology zones of the Upper San Jacinto River Watershed. Each assigned riparian reach was classified using aerial photography, baseline assessment data and field evaluations. The Geomorphic zones are as follows:

V-shaped Valley: High-gradient stream channel systems that are located within the mountains or are first-order streams in the foothills.

Colluvial Valley: Streams confined by colluvium, boulder bar deposits, or bedrock, having narrow floodplains and narrow, discontinuous terraces.

Boulder Dominated Floodplain/Terrace: Characterized by deep, extensive accumulations of boulders and cobble that extend from valley wall to valley wall.

Steep Alluvial Fan: Fairly steep, truncated tributaries that occur where streams enter large valleys in mountainous terrain.

Alluvial Valley with Meandering Stream: Sinuous channel systems that meander widely across the valley floor, have well-developed floodplains with alternating bars, and have one or more broad terraces that dominate the remainder of the valley bottom.

Valley Fill: Stream reaches of major stream valleys that have been filled with deep, well-drained sediments and that show only trace channel systems and little or no terrace development.

Sandy Wash: Channel type consisting of a relatively narrow, flow-bottomed channel with low, distinct banks that give way to gentle sloping alluvial and/or colluvial deposits.

Credits

Smith, R. D. and C. V. Klimas. 2006. Riparian Ecosystem Restoration Plan for the Santa Margarita River Watershed: General Design Criteria and Site Selection. U.S. Army Engineer

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Research and Development Center, Environmental Laboratory, Vicksburg, MS. Final Report to the U.S. Army Corps of Engineers, Los Angeles District, Regulatory Branch.

Use Limitations

There are no access and use limitations for this layer.

Level of Restoration Effort – San Jacinto

Summary

Using the riparian reaches of the Watershed identified in the Assessment of Riparian Ecosystem Integrity (Smith 2003), each of the reaches were rated for the level of effort required to restore the watershed riparian habitats. The Restoration Plan developed a classification of potential Restoration Templates for riparian ecosystems in various states of cultural alteration, applicable across all geomorphic zones. The study examined each riparian reach to establish specific restoration criteria in terms of channel cross section and form, the scale of terraces present, and dominant vegetation types appropriate to each of the Restoration Templates. Using aerial photography and field assessment data, six restoration templates were assigned to each riparian reach based the condition of the channel, riparian vegetation, and surrounding land uses. The assigned restoration template was intended to represent the best possible restoration target, given the potential natural patterns expected for the riparian reach's geomorphic conditions. The objective of each template was to re-establish, to the extent possible, all of the vegetation zones present under relatively natural conditions, and in relative proportions approximately corresponding to the extent of the geomorphic surfaces found in relatively intact reference reaches.

It was recognized that the restoration templates were intended to be general templates structured specifically to determine the feasibility of restoring individual reaches, and to prioritize restoration actions based on the functional benefits likely to be realized. While final restoration designs could resemble these templates and associated relative dimensions, site-specific restoration designs would have to be developed and include grading plans and specifications for planting stock, planting densities, irrigation practices, and similar requirements.

Description

Each riparian reach identified for the level of restoration effort required corresponds to the individual reach and the corresponding reach ID.

LOE (Level of Effort) Classification:

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Heavy Earth / Heavy Plant: Stream reaches for which a large numbers of plants must be introduced and/or substantial mechanical site preparation is needed. These reaches may be deeply incised channel segments that require extensive soil removal to re-establish floodplains and terrace systems tens of feet below the current grade, and grading back of high vertical banks to stable angles of repose.

Light Earth / Heavy Plant: Stream reaches requiring a large numbers of plants to be introduced and/or substantial mechanical site preparation is needed. Planting activities may involve hand-planting of willows at the base of an unstable bank, or adding species that may have been grazed from a community back into an otherwise intact riparian area or upland buffer.

Light Planting: No reconfiguration of the land surface is needed. Treatment consists of spot-planting of native plants. Typically, this would involve hand-planting of willows at the base of an unstable bank, or adding species that may have been grazed from a community back into an otherwise intact riparian area or upland buffer.

Light Plant / Exotic Control: No reconfiguration of the land surface is needed. Treatment consists of control of exotic species and spot-planting of native plants. Typically, this would involve hand-planting of willows at the base of an unstable bank, or adding species that may have been grazed from a community back into an otherwise intact riparian area or upland buffer.

Moderate Earth / Heavy Plant: Stream segments and associated riparian areas that require reconfiguration in some areas. Moderate Earthwork is intended to indicate widening of floodplains and terraces in systems where channels are not deeply incised, but need more space to re-establish equilibrium and community diversity. Typically, this will involve excavation of less than 6 feet of soil depth, though there is no implication regarding the lateral extent of the excavation.

None: Stream reaches in which no restoration is considered necessary because they are functional in their current condition, requiring only vigilance to prevent invasion of exotic plant species.

Credits

Smith, R. D. and C. V. Klimas. 2006. Riparian Ecosystem Restoration Plan for the San Jacinto River Watershed: General Design Criteria and Site Selection. U.S. Army Engineer Research and Development Center, Environmental Laboratory, Vicksburg, MS. Final Report to the U.S. Army Corps of Engineers, Los Angeles District, Regulatory Branch.

Use Limitations

There are no access and use limitations for this layer.

Possible Opportunities (Priorities by Restoration Goal), San Jacinto

Summary

This layer contains sections of the mainstem waterways that have been identified as strong candidates for restoration

Description

This layer represents each reach identified as a possible opportunity for restoration areas. REST_CAT (“Restoration Category”)

Definitions:

Restoration adjacent to open space: Riparian areas in which compensatory mitigation would be located adjacent to existing open space such that the open space would provide buffer benefits to the riparian area.

Connectivity: Riparian areas in which compensatory mitigation would connect two areas of natural open space to create a continuous open space feature. Restoration of connectivity was evaluated in a riverine hydrogeomorphic context to identify riverine/riparian features that would allow for the movement of wildlife, sediments, and nutrients.

Sensitive species habitat: Riparian areas in which compensatory mitigation would meet the habitat needs of sensitive species.

Water quality + wildlife habitat: Riparian areas in which compensatory mitigation would increase water quality and flood control functions and services while also providing benefits to wildlife habitat.

Water quality only: Riparian areas in which compensatory mitigation would increase water quality and flood control functions and services without benefits to wildlife habitat.

Credits

Smith, R. D. and C. V. Klimas. 2006. Riparian Ecosystem Restoration Plan for the San Jacinto River Watershed: General Design Criteria and Site Selection. U.S. Army Engineer Research and Development Center, Environmental Laboratory, Vicksburg, MS. Final

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Report to the U.S. Army Corps of Engineers, Los Angeles District, Regulatory Branch.

Use Limitations

There are no access and use limitations for this layer.

Restoration Templates, San Jacinto

Summary

A study was performed by the U.S. Army Engineer Research and Development Center to determine waterways in western Riverside County that had the potential of undergoing restoration. This layer identifies those waterways and indicates restoration potential.

Description

ERDC developed a classification of potential Restoration Templates for riparian ecosystems in various states of cultural alteration, applicable across all Geomorphic Zones and established specific restoration criteria in terms of channel cross section and form, the scale of terraces present, and dominant vegetation types appropriate to each of the restoration Templates. A particular restoration template was assigned to each riparian reach based on ion of the channel, riparian vegetation, and surrounding land uses. The assigned restoration template was intended to represent the best possible restoration target, given the potential natural patterns expected for the Geomorphic Zone. The objective of each template is to re-establish, to the extent possible, all of the vegetation zones present under relatively natural conditions, and in relative proportions approximately corresponding to the extent of the geomorphic surfaces found in relatively intact reference reaches. The templates include:

REST_CAT (Restoration Category) Definitions

Restoration adjacent to open space: Riparian areas in which compensatory mitigation would be located adjacent to existing open space such that the open space would provide buffer benefits to the riparian area.

Connectivity: Riparian areas in which compensatory mitigation would connect two areas of natural open space to create a continuous open space feature. Restoration of connectivity was evaluated in a riverine hydrogeomorphic context to identify riverine/riparian features that would allow for the movement of wildlife, sediments, and nutrients.

Sensitive species habitat: Riparian areas in which compensatory mitigation would meet the habitat needs of sensitive species.

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Water quality + wildlife habitat: Riparian areas in which compensatory mitigation would increase water quality and flood control functions and services while also providing benefits to wildlife habitat.

Water quality only: Riparian areas in which compensatory mitigation would increase water quality and flood control functions and services without benefits to wildlife habitat

Credits

Smith, R. D. and C. V. Klimas. 2006. Riparian Ecosystem Restoration Plan for the San Jacinto River Watershed: General Design Criteria and Site Selection. U.S. Army Engineer Research and Development Center, Environmental Laboratory, Vicksburg, MS. Final Report to the U.S. Army Corps of Engineers, Los Angeles District, Regulatory Branch.

Use Limitations

There are no access and use limitations for this layer.

Increase in Habitat Integrity Index Scenario 1 – San Jacinto

Summary

Increase in habitat integrity expected to result from Scenario 1: restoration within the riparian ecosystem immediately adjacent to waters of the U.S., e.g., stream channel geomorphic features, riparian vegetation, etc.

Description

The increase in habitat integrity under Scenario 1 was determined by subtracting the baseline habitat integrity from the habitat integrity calculated under Scenario 1 for each local drainage area.

Credits

Smith, R. D. and C. V. Klimas. 2006. Riparian Ecosystem Restoration Plan for the San Jacinto River Watershed: General Design Criteria and Site Selection. U.S. Army Engineer Research and Development Center, Environmental Laboratory, Vicksburg, MS. Final Report to the U.S. Army Corps of Engineers, Los Angeles District, Regulatory Branch
USACE

Use Limitations

There are no access and use limitations for this layer.

Increase in Habitat Integrity Index Scenario 2 – San Jacinto

Summary

Increase in habitat integrity expected to result from Scenario 2; restoration of active or former rangeland within upland areas to native vegetation.

Description

The increase in habitat integrity under Scenario 2 was determined by subtracting the baseline habitat integrity from the habitat integrity calculated under Scenario 2 for each local drainage area.

Credits

Smith, R. D. and C. V. Klimas. 2006. Riparian Ecosystem Restoration Plan for the San Jacinto River Watershed: General Design Criteria and Site Selection. U.S. Army Engineer Research and Development Center, Environmental Laboratory, Vicksburg, MS. Final Report to the U.S. Army Corps of Engineers, Los Angeles District, Regulatory Branch

Use Limitations

There are no access and use limitations for this layer.

Increase in Hydrologic Integrity Index Scenario 1 – San Jacinto

Summary

Increase in hydrologic integrity expected to result from Scenario 1: restoration within the riparian ecosystem immediately adjacent to waters of the U.S., e.g., stream channel geomorphic features, riparian vegetation, etc.

Description

The increase in hydrologic integrity under Scenario 1 was determined by subtracting the baseline hydrologic integrity from the hydrologic integrity calculated under Scenario 1 for each local drainage area.

Credits

Smith, R. D. and C. V. Klimas. 2006. Riparian Ecosystem Restoration Plan for the San Jacinto River Watershed: General Design Criteria and Site Selection. U.S. Army Engineer Research and

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Development Center, Environmental Laboratory, Vicksburg, MS. Final Report to the U.S. Army Corps of Engineers, Los Angeles District, Regulatory Branch

Use Limitations

There are no access and use limitations for this layer.

Increase in Hydrologic Integrity Index Scenario 2 – San Jacinto

Summary

Increase in hydrologic integrity expected to result from Scenario 2: restoration of active or former rangeland within upland areas to native vegetation.

Description

The increase in hydrologic integrity under Scenario 2 was determined by subtracting the baseline hydrologic integrity from the hydrologic integrity calculated under Scenario 2 for each local drainage area.

Credits

Smith, R. D. and C. V. Klimas. 2006. Riparian Ecosystem Restoration Plan for the San Jacinto River Watershed: General Design Criteria and Site Selection. U.S. Army Engineer Research and Development Center, Environmental Laboratory, Vicksburg, MS. Final Report to the U.S. Army Corps of Engineers, Los Angeles District, Regulatory Branch

Use Limitations

There are no access and use limitations for this layer.

Increase in Water Quality Integrity Index Scenario 1 – San Jacinto

Summary

Increase in water quality integrity expected to result from Scenario 1: restoration within the riparian ecosystem immediately adjacent to waters of the U.S., e.g., stream channel geomorphic features, riparian vegetation, etc.

Description

The increase in water quality integrity under Scenario 1 was determined by subtracting the baseline hydrologic integrity from the water quality integrity calculated under Scenario 1 for each local drainage area.

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Credits

Smith, R. D. and C. V. Klimas. 2006. Riparian Ecosystem Restoration Plan for the San Jacinto River Watershed: General Design Criteria and Site Selection. U.S. Army Engineer Research and Development Center, Environmental Laboratory, Vicksburg, MS. Final Report to the U.S. Army Corps of Engineers, Los Angeles District, Regulatory Branch

Use Limitations

There are no access and use limitations for this layer.

Increase in Water Quality Integrity Index Scenario 2 – San Jacinto

Summary

Increase in water quality integrity expected to result from Scenario 2: restoration of active or former rangeland within upland areas to native vegetation.

Description

The increase in water quality integrity under Scenario 2 was determined by subtracting the baseline water quality integrity from the water quality integrity calculated under Scenario 2 for each local drainage area.

Credits

Smith, R. D. and C. V. Klimas. 2006. Riparian Ecosystem Restoration Plan for the San Jacinto River Watershed: General Design Criteria and Site Selection. U.S. Army Engineer Research and Development Center, Environmental Laboratory, Vicksburg, MS. Final Report to the U.S. Army Corps of Engineers, Los Angeles District, Regulatory Branch

Use Limitations

There are no access and use limitations for this layer.

OTHER GIS LAYERS (NON - USACE SAMP) – SAN JACINTO RIVER WATERSHED

U.S. EPA Assessed Impaired Waterbodies, 303(B) and 303(D) Streams, San Jacinto

Summary

Under Section 303(d) of the federal Clean Water Act, states, territories and authorized tribes are required to develop a list of water quality limited segments. These waters on the list do not meet water quality standards, even after point sources of pollution have installed the minimum required levels of pollution control technology. The Clean Water Act requires that these jurisdictions establish priority rankings for water on the lists and develop action plans, called Total Maximum Daily Loads (TMDLs), to improve water quality. Every two years, the California State Water Resources Control Board submits a report on the State's water quality to the U.S. EPA pursuant to Section 305(b) of the Clean Water Act. The report provides water quality information to the general public and serves as the basis for U.S. EPA's National Water Quality Inventory Report to Congress.

Description

This dataset is a compilation of the linear water bodies (rivers, streams, coastlines) and lakes in the San Jacinto watershed assessed under Sections 303(d) and 305(b) of the Clean Water Act for the 2010 listing cycle. Each water body is assigned a unique Water Body ID (WBID) number as well as selected associated information (water body name, Regional Water Quality Control Board number, etc.).

Credits

Contact_Information: Office of Information Management and Analysis, California Water Resources Control Board

Contact_Person: Nancy Kapellas Contact_Address 1001 I Street, 8th Floor City: Sacramento State_or_Province: California Postal_Code: 95814

Use Limitations

There are no access and use limitations for this layer.

Faults, San Jacinto

Summary

The purpose of this data layer is to show all known fault lines in the San Jacinto watershed of Riverside County. This includes Alquist-Priolo linework and County Geology linework. The accuracy of this data allows for general reference analysis and mapping but for detailed spatial calculations and confirmation of location, please contact the Chief Geologist of Riverside County at (951) 955-6863.

Description

County Faults/Fault Zones (Per Riverside County General Plan 10/2003) Alquist-Priolo Earthquake Fault Zones have been designated by the California Division of Mines and Geology (CDMG) for the Elsinore, San Jacinto, and San Andreas fault zones in Riverside County. Within the rapidly growing county, State A-P mapping has not kept pace with development. The County of Riverside has zoned fault systems and required similar special studies prior to development. These are referred to as County Fault Zones on Figure S-2 and in the Technical Background Report. Within Alquist-Priolo and County Fault Zones, proposed tracts of four or more dwelling units must investigate the potential for and setback from ground rupture hazards. As there are many active faults in Riverside County, with new fault strands being continually discovered, all proposed structures designed for human occupancy should be required to investigate the potential for and setback from ground rupture. Also of concern are structures, not for human occupancy, that can cause harm if damaged by an earthquake, such as utility, communications, and transportation lifelines. The County regulates most development projects within earthquake fault zones (Figure S-2). Projects include all land divisions and most structures for human occupancy. Before a project can be permitted within an Alquist-Priolo Earthquake Fault Zone, County Fault Zone, or within 150 feet of any other potentially active or active fault mapped in published United States Geological Survey (USGS) or CDMG reports, a geologic investigation must demonstrate that proposed buildings will not be constructed across active faults.

Credits

USGS, CDMG

Use Limitations

There are no access and use limitations for this layer

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Flood Control Facilities (Detention Basins) - RCFCD, San Jacinto

Summary

This layer contains the RCFCD facilities within the San Jacinto Watershed.

Description

This is a polygon layer showing the extents of the RCFCD detention, debris and retention basin facilities.

Credits

This layer was developed by RCFCD and transmitted to the USACE. Received 2014.

Use Limitations

There are no access and use limitations for this layer.

Flood Control, Other Structures - RCFCD, San Jacinto

Summary

This layer was provided by the RCFCD. It represents bridges, channels, canals, aqueducts and other structures used for flood control.

Description

The Structures layer is composed using a line topology. All structures features are named by both structure name and water body name. This layer has been clipped to the boundary of the San Jacinto River Watershed.

Credits

RCFCD, 12/11/2014

Use Limitations

There are no access and use limitations for this layer.

FEMA 100 Years Flood, San Jacinto

Summary

The Q3 Flood Data are derived from the Flood Insurance Rate Maps (FIRMS) published by the Federal Emergency Management Agency (FEMA). The file is georeferenced to earth's surface

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using geographic projection and decimal degree coordinate system. The specifications for the horizontal control of Q3 Flood Data files are consistent with those required for mapping at a scale of 1:24000.

Description

The FIRM is the basis for floodplain management, mitigation, and insurance activities for the National Flood Insurance Program (NFIP). Insurance applications include enforcement of the mandatory purchase requirement of the Flood Disaster Protection Act which "... requires the purchase of flood insurance by property owners who are being assisted by Federal programs or by Federally supervised, regulated or insured agencies or institutions in the acquisition or improvement of land facilities located or to be located in identified areas having special flood hazards" (Section 2 (b) (4) of the 1973 Flood Disaster Protection Act). In addition to the identification of Special Flood Hazard Areas, the risk zones shown on the FIRMs are the basis for the establishment of premium rates for flood coverage offered through the NFIP. Q3 Flood Data files are intended to convey certain key features from the existing hard copy FIRM to provide users with automated flood risk data. Edge-matching errors, overlaps and deficiencies in coverage, and similar problems are not corrected during digitizing or post-processing. These data may be used to locate Special Flood Hazard Areas (SFHAs). More detailed information may be obtained from the paper FIRM.

Credits

Federal Emergency Management Agency Mitigation Directorate Q3 Flood Data Program 500 C Street, SW Washington, D.C. 20472

Use Limitations

There are no access and use limitations for this layer.

Rock Type (Geology CA), San Jacinto

Summary

This layer was downloaded from the State of California and provides a common geology structure and format to allow creation of regional maps that depict age and lithology of geological units.

Description

These digital maps are a reformulation of previously published maps, primarily maps of states. The reformulation gives all the maps the same structure and format, allowing them to be combined into regional maps. The associated data tables have information about age and lithology of the map units, also in a standard format.

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Credits

USGS, CGS

Use Limitations

There are no access and use limitations for this layer.

Geomorphic Zones of the Watershed, San Jacinto

Summary

Geomorphology rating is an indicator of the likelihood of erosion from storm water flow. The geomorphic zones reflect fundamental geomorphic characteristics under “equilibrium” conditions.

Description

Seven different geomorphology zones were identified in the analysis of the geomorphology zones of the San Jacinto River Watershed. Each assigned riparian reach was classified using aerial photography, baseline assessment data and field evaluations.

Definition of Geomorphic zone attribute:

V-shaped Valley: High-gradient stream channel systems that are located within the mountains or are first-order streams in the foothills

Colluvial Valley: Streams confined by colluvium, boulder bar deposits, or bedrock, having narrow floodplains and narrow, discontinuous terraces

Boulder Dominated Floodplain/Terrace: Characterized by deep, extensive accumulations of boulders and cobble that extend from valley wall to valley wall

Steep Alluvial Fan: Fairly steep, truncated tributaries that occur where streams enter large valleys in mountainous terrain

Alluvial Valley with Meandering Stream: Sinuous channel systems that meander widely across the valley floor, have well-developed floodplains with alternating bars, and have one or more broad terraces that dominate the remainder of the valley bottom.

Valley Fill: Stream reaches of major stream valleys that have been filled with deep, well-drained sediments and that show only trace channel systems and little or no terrace development

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Sandy Wash: Channel type consisting of a relatively narrow, flow-bottomed channel with low, distinct banks that give way to gentle sloping alluvial and/or colluvial deposits

Credits

Smith, R. D. and C. V. Klimas. 2006. Riparian Ecosystem Restoration Plan for the San Jacinto River Watershed: General Design Criteria and Site Selection. U.S. Army Engineer Research and Development Center, Environmental Laboratory, Vicksburg, MS. Final Report to the U.S. Army Corps of Engineers, Los Angeles District, Regulatory Branch.

Use Limitations

There are no access and use limitations for this layer.

Habitat, Critical, US Fish and Wildlife, San Jacinto

Summary

This layer defines critical habitat areas considered essential for the conservation of a listed species. Federal agencies are required to consult with the U.S. Fish and Wildlife Service (USFWS) on actions they carry out, fund, or authorize to ensure that their actions will not destroy or adversely modify critical habitat. These areas provide notice to the public and land managers of the importance of these areas to the conservation of a listed species. Special protections and/or restrictions are possible in areas where Federal funding, permits, licenses, authorizations, or actions occur or are required.

Description

When a species is proposed for listing as endangered or threatened under the Endangered Species Act, the USFWS must consider whether there are areas of habitat believed to be essential to species' conservation. Those areas may be proposed for designation as "critical habitat." Critical habitat is a term defined and used in the Endangered Species Act. It is a specific geographic area(s) that contains features essential for the conservation of a threatened or endangered species and that may require special management and protection. Critical habitat may include an area that is not currently occupied by the species but that will be needed for its recovery. An area is designated as "critical habitat" after the USFWS publishes a proposed Federal regulation in the Federal Register and receives and considers public comments on the proposal. The final boundaries of the critical habitat are also published in the Federal Register.

Credits

USFWS

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Use Limitations

There are no access and use limitations for this layer.

Land Cover, San Jacinto

Summary

National Land Cover Database 2006 (NLCD 2006) is a 16-class land cover classification scheme that has been applied consistently across the conterminous United States at a spatial resolution of 30 meters. NLCD 2006 is based primarily on a decision-tree classification of circa 2006 Landsat satellite data. NLCD 2006 also quantifies land cover change between the years 2001 to 2006. The NLCD 2006 land cover change product was generated by comparing spectral characteristics of Landsat imagery between 2001 and 2006, on an individual path/row basis, using protocols to identify and label change based on the trajectory from NLCD 2001 products.

Description

The RCFCDD used the National Land Cover Database.

Credits

USGS Earth Resources Observation and Science (EROS) Center MRLC Project 47914 252nd Street Sioux Falls, SD 57198-0001

Use Limitations

There are no access and use limitations for this layer.

Land Use, Southern California Association of Governments (SCAG), San Jacinto

Summary

The SCAG periodically performs a survey of land use in the greater Los Angeles area including Riverside County. The SCAG classifications are based on a review of aerial photography within the boundaries of parcels as determined by Riverside County.

Description

This is a polygon layer with 3 categories have increasing levels of specificity. Category 1 is the most general and Category 3 is the most specific. This version was completed in 2008.

Credits

SCAG, 2008.

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Use Limitations

There are no access and use limitations for this layer.

Levees – RCFCD, San Jacinto

Summary

This layer represents levee structures managed by the RCFCD.

Description

The levee structures in this layer are associated with rivers and reservoirs. They prevent flooding and are maintained by the RCFCD.

Credits

RCFCD, 2014

Use Limitations

There are no access and use limitations for this layer.

Liquefaction, San Jacinto

Summary

This layer is a generalized description of areas of liquefaction susceptibility. This coverage is intended for reference only in cartographic products and analysis.

Description

This data set of polygon features represents Riverside County's liquefaction zones. At each location, the map predicts the approximate probability that shallow wet sands will liquefy and cause surface manifestations of liquefaction such as sand boils and ground cracking.

Credits

Prepared Earth Consultants International for the Riverside County area

Use Limitations

This coverage is intended for reference only in cartographic products and analysis.

Multi-Species Habitat Conservation Plan (MSHCP) Conserved Areas, San Jacinto

Summary

The Western Riverside County Regional Conservation Authority (RCA) was created as a public agency to secure, control, and perpetuate land and facilities to establish habitat reserves for conservation and the protection of species covered by the MSHCP. The main objective is to create a reserve system that provides habitat for approx. 146 species of plants and animals. The goal of the MSHCP is to obtain approximately 153,000 acres of open space, ensuring linkage to existing reserves within the western portion of the county. The RCA MSHCP Conserved Lands dataset defines these acquisitions and enumerates the progress toward the MSHCP acreage goal. This dataset was updated by RCA (S. Baker-Stewart).

Description

This layer represents a polygon layer depicting a mixture of lands that have been designated in the MSHCP.

Credits

RCA

Use Limitations

There are no access and use limitations for this layer.

National Wetlands Inventory, San Jacinto

Summary

The present goal of the USFWS is to provide the citizens of the United States and its Trust Territories with current geospatially referenced information on the status, extent, characteristics and functions of wetlands, riparian, deepwater and related aquatic habitats in priority areas to promote the understanding and conservation of these resources.

Description

This data set represents the extent, approximate location and type of wetlands and deepwater habitats in the conterminous United States. These data delineate the areal extent of wetlands and surface waters as defined by Cowardin et al. (1979). Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and near shore coastal waters. Some deepwater reef communities (coral or tubercid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial

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imagery. By policy, the USFWS also excludes certain types of "farmed wetlands" as may be defined by the Food Security Act or that do not coincide with the Cowardin et al. definition. Contact the Service's Regional Wetland Coordinator for additional information on what types of farmed wetlands are included on wetland maps.

Credits

There are no credits for this layer.

Use Limitations

None. Acknowledgement of the USFWS and (or) the National Wetlands Inventory would be appreciated in products derived from these data.

National Hydrography Dataset (NHD), San Jacinto

Summary

The NHD is a national framework for assigning reach addresses to water-related entities, such as industrial discharges, drinking water supplies, fish habitat areas, wild and scenic rivers. Reach addresses establish the locations of these entities relative to one another within the NHD surface water drainage network, much like addresses on streets. Once linked to the NHD by their reach addresses, the upstream/downstream relationships of these water-related entities--and any associated information about them--can be analyzed using software tools ranging from spreadsheets to GIS. GIS can also be used to combine NHD-based network analysis with other data layers, such as soils, land use and population, to help understand and display their respective effects upon one another. Furthermore, because the NHD provides a nationally consistent framework for addressing and analysis, water-related information linked to reach addresses by one organization (national, state, local) can be shared with other organizations and easily integrated into many different types of applications to the benefit of all.

Description

The NHD is a feature-based database that interconnects and uniquely identifies the stream segments or reaches that make up the nation's surface water drainage system. NHD data was originally developed at 1:100,000-scale and exists at that scale for the whole country. This high-resolution NHD, generally developed at 1:24,000/1:12,000 scale, adds detail to the original 1:100,000-scale NHD. (Data for Alaska, Puerto Rico and the Virgin Islands was developed at high-resolution, not 1:100,000 scale.) Local resolution NHD is being developed where partners and data exist. The NHD contains reach codes for networked features, flow direction, names, and centerline representations for areal water bodies. Reaches are also defined on water bodies and the approximate shorelines of the Great Lakes, the Atlantic and Pacific Oceans and the Gulf of

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Mexico. The NHD also incorporates the National Spatial Data Infrastructure framework criteria established by the Federal Geographic Data Committee.

Credits

See dataset specific metadata.

Use Limitations

None. Acknowledgment of the originating agencies would be appreciated in products derived from these data.

Rain Gauges – San Jacinto

Summary

These two rain gauges are operated by the RCFCD.

Description

Gauge name: Elsinore - Located in the City of Lake Elsinore near the intersection of West Graham Ave and North Spring St.

Gauge name: San Jacinto - Located in the City of San Jacinto near the intersection of San Jacinto Ave and 1st St.

Credits

RCFCD, 2014

Use Limitations

There are no access and use limitations for this layer.

Soil Survey Geographic Database (SSURGO) –Soils, San Jacinto

Summary

The SSURGO Soils database is produced by the NRCS of the U.S. Department of Agriculture (USDA). It provides a detailed delineation of soil types. This layer is restricted to the San Jacinto Watershed.

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Description

The SSURGO database contains information about soil as collected by the National Cooperative Soil Survey over the course of a century. The information was gathered by walking over the land and observing the soil. Many soil samples were analyzed in laboratories. The map units describe soils and other components that have unique properties, interpretations, and productivity. The information was collected at scales ranging from 1:12,000 to 1:63,360. More details were gathered at a scale of 1:12,000 than at a scale of 1:63,360. The mapping is intended for natural resource planning and management by landowners, townships, and counties. Some knowledge of soils data and map scale is necessary to avoid misunderstandings.

Credits

NRCS, USDA, 2014

Use Limitations

There are no access and use limitations for this layer.

Stream Hydromodification, San Jacinto

Summary

This polyline layer describes the type of construction for the drainage structures managed by the RCFCD. The hydromodification classification is an indicator of the susceptibility of a stream to degradation or shoreline erosion.

Description

The hydromodification classification was determined by the RCFCD. The classification is important for planning as urban development increases and increases stress on drainage systems.

Credits

RCFCD, 2014

Use Limitations

There are no access and use limitations for this layer.

Vacant Land, Planned for Development, San Jacinto

Summary

This layer was derived from currently vacant land that is planned for development by either the General Plan of the County of Riverside or the General Plan of one of the cities in the San Jacinto watershed.

Description

The boundaries of the vacant areas are from the Riverside County Assessor parcels. Each vacant parcel has an APN which can be used to determine parcel specific information. Vacant parcels shown have an area of at least 100,000 square feet.

Credits

TLMA, AECOM (analysis of vacant parcels planned for development)

Use Limitations

There are no access or use limitations for this layer.

Wildlife Linkage - RCA, San Jacinto

Summary

This layer was derived from a board presentation made to the Western Riverside County RCA. It details wildlife corridors or linkages between reserves and conservation areas in western Riverside County.

Description

The main focus of this plan is to provide paths for the mountain lion to move between habitats. Proposed and existing connectors between the Cleveland National Forest, and various wilderness areas were presented to the board and are planned for implementation.

Credits

Western Riverside County RCA presentation, GIS data digitized by URS, 2015

Use Limitations

There are no access and use limitations for this layer.

Wildlife Linkages-South Coast Wildlands, San Jacinto

Summary

The purpose of this generalized feature class is to delineate the outer boundaries of the linkages identified by the South Coast Missing Linkages Project.

Description

A Linkage Design addresses the potential movement needs for several focal species. For more details on the methods used for creating each Linkage Design refer to the individual linkage reports at <http://www.scwildlands.org/reports.aspx>

Credits

South Coast Wildlands: www.scwildlands.org

Use Limitations

For cartographic purposes only.

CPAD 2016a SuperUnits

Summary

The California Protected Areas Database (CPAD) is suitable for a wide range of planning, assessment, analysis and display purposes. CPAD should not be used as the basis for regulatory, legal or other specific governmental actions. See the CPAD Data Disclaimer for more information.

Description

The CPAD contains data on lands owned in fee by governments, non-profits and some private entities that are protected for open space purposes. Data includes all such areas in California, from small urban parks to large national parks and forests, mostly aligned to assessor parcel boundaries. Data is collected by Holdings (parcels) which are aggregated to Units (commonly named areas within counties) and Super Units (commonly named areas generally).

Credits

California Protected Areas Database (CPAD - www.calands.org)

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Use Limitations

All users must review the CPAD Data Disclaimer before using the dataset - CPAD is generally available to any user.

PQP Conserved Lands, San Jacinto

Summary

The identification of Public/Quasi-Public Conserved lands for Western Riverside County (WRC-PQP) is used as a baseline for implementation of the MSHCP reserve design, as adopted by the Riverside County Board of Supervisors June 17, 2003 in order to monitor and meet the reporting requirements of the MSHCP. It is a subset of the MSHCP Plan Area, lands known to be in public/private ownership and expected to be managed for open space value and/or in a manner that contributes to the conservation of covered species as depicted in FIGURE 3-1 of the MSHCP, Volume1.

Description

This feature class contains properties within Western Riverside County owned, managed or maintained by public agencies for the purposes of conservation. Additional reserve lands that contribute toward the MSHCP acreage goal of 153,000 acres of conservation, are depicted in an additional data set called RCA MSHCP Conserved Lands. Together these two datasets represent a more complete portrayal of open space areas reserved for conservation.

Credits

RCA

Use Limitation

There are no access and use limitations for this layer.