

# **ENVIRONMENTAL CONSIDERATIONS**

**How to include environmental considerations in  
Route Concept Planning**

# SAFETEA-LU AND MAP-21

- SAFETEA-LU 6001

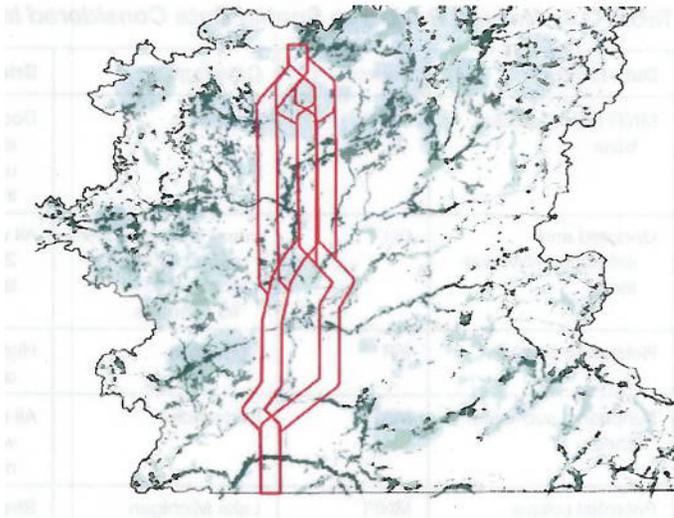
- Consideration of environmental resources early in long range plans.

- MAP-21

- Section 1310: Integration of Planning and Environmental Review
  - NEPA
  - Environmental Setting
  - Programmatic Level Mitigation



# ECO-LOGICAL



Alternatives for US-131 shown over conservation priority areas

	Corridor A	Corridor B	Corridor C	Corridor D	Corridor E
<b>Aquatic Elements</b>	<b>Acres Lost</b>				
Unique Lakes	0.00	0.00	9.50	4.75	4.75
Unique stream segments	21.25	21.75	21.25	71.25	71.00
High quality lakes	0.00	0.00	0.00	0.00	0.00
High quality stream segments	89.00	89.75	136.00	105.00	86.75
<b>Total</b>	<b>110.25</b>	<b>111.50</b>	<b>166.75</b>	<b>181.00</b>	<b>162.50</b>
<b>Terrestrial Elements</b>					
High quality natural patches	499.75	503.75	344.75	638.25	624.50
Large natural landscapes	1,945.75	1,963.50	2,097.25	1,889.00	2,215.75
<b>Total</b>	<b>2,445.50</b>	<b>2,467.25</b>	<b>2,442.00</b>	<b>2,527.25</b>	<b>2,840.25</b>

Summary of Aquatic and Terrestrial Element Impacts



# WHAT IS OUR PURPOSE

- The purpose of this section is to provide a high-level description of the general environmental setting of the route. While completing this section it is also suggested to consult with information sources from resource agencies, consider possible corridor development constraints the environmental setting may impose, and if possible, discuss potential solutions to those constraints. This does not need to be an exhaustive approach but one that considers the concerns on the route.
  - Determine your Evaluation or Scan Area- Determine on a resource by resource basis, taking into account the nature of the environmental resource and the context of the corridor.
  - Probability Determination- High, Medium, Low
  - Environmental Resources to Consider- The considerations at this level do not need to be exact or complex
  - Narrative and Concept Integration
    - summarize major environmental conditions found along the corridor route
    - have other sources has identified potential conservation areas or indicated a lack of potential areas
    - if applicable, identify potential solutions for corridor development constraints
    - consideration of possible solutions can help obtain streamlining benefits during project delivery and can help link planning with CEQA/NEPA requirements and analysis



# ENVIRONMENTAL SCAN

Segment	Section 4(f) Land	Coastal Zone	Farmland/ Timberland	Env. Justice	Cultural Resources	Visual Aesthetics	Geology/Soils/	Floodplain	Climate Change and	Hazardous Materials	Naturally Occurring	Ozone	Air Quality			Noise	Waters and Wetlands	Wild and Scenic Rivers	Special Status Species	Fish Passage	Habitat Connectivity
												2.5	10 PM	CO							
1	High	No	High	Low	Med	Low	Low	N/A	N/A	Low	Low	Attainment/Unclassified	Non-Attainment	Non-Attainment	Attainment/Maintenance	Low	Med	N/A	Low	N/A	Med
2																					
3																					
4	Med	No	Med	Med	High	Med	Low	N/A	N/A	High	Med	Attainment/Unclassified	Non-Attainment	Non-Attainment	Attainment/Maintenance	Low	Med	N/A	High	N/A	Med
5																					
6																					
7	Low	No	Low	Med	Low	Med	Med	N/A	N/A	Low	High	Attainment/Unclassified	Non-Attainment	Non-Attainment	Attainment/Maintenance	Med	Med	N/A	High	N/A	Low
1																					
2																					



# RESOURCES TO CONSIDER

- Recreational Land Use (Section 4(f))
- Coastal Zone
- Farmland/Timberland
- Air Quality
- Community Impacts/Environmental Justice
- Visual Aesthetics
- Cultural Resources
- Floodplain
- Climate Change and Sea Level Rise
- Geology/Soils/Seismic/Topography
- Waters and Wetlands
- Wild and Scenic Rivers
- Species Considerations (Special Status, Threatened, Endangered, Critical Habitat)
- Fish Passage
- Habitat Connectivity
- Hazardous Materials
- Noise
- Naturally Occurring Asbestos



# WHAT CAN WE DO?

## Impacting Resources can Impact projects

- Potential project delay
  - Added agency coordination
  - Public meetings
  - Relocations
  - Additional studies
  - Work windows
- Costs associated with Mitigation
- Impacts to Safety
- In some rare cases, impacts may mean that a project will not be permitted

## Early Identification of Impacts Allows for

- Changes in design to avoid or minimize impacts
  - Design standards/exemptions
  - Alternative alignments
- Proper programming to include costs for environmental concerns
- Schedule projects to allow time for agency consultation and public outreach
- Identify stakeholders



# CONSIDER YOUR SETTING



## OTHER PLANS?

- Regional Transportation Plans
- Natural Community Conservation Plans
- Habitat Conservation Plans
- General Plan
- Land Use Plans
- Forest Plans
- Species Recovery Plans
- Coastal Plans



# STANDARD ENVIRONMENTAL REFERENCE

http://www.dot.ca.gov/ser/



Firefox - SER - CT Environmental Documentation | www.dot.ca.gov/ser/vol1/vol1.htm

CA .GOV CALIFORNIA DEPARTMENT OF TRANSPORTATION

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SER Home  
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How To Use The SER  
- Finding Problems? Site Organization, Trouble with Acrobat Reader  
- Topics Matrices  
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Vol 1: General  
- Topics Chapters Overview  
- 1-Federal Requirements  
- 2-State Requirements  
- 3-Public Participation  
- 4-Environmental Considerations During Transportation Planning  
- 5-Preliminary Scoping  
- 6-Formal Scoping  
- 7-Topography/ Geology/ Soils/ Seismic  
- 8-Paleontology  
- 9-Hydrology/ Water Quality/ Storm Water In Prep  
- 10-Hazardous Materials, Hazardous Waste, and Contamination  
- 11-Air Quality  
- 12-Noise  
- 13-Energy  
- 14-Biological Resources  
Chapter 14 has been merged with Chapter 16 which was renamed to Biological Resources.  
- 15-Waters of the U.S. and the State  
- 17-Floodplains  
- 18-Coastal Zone  
- 19-Wild and Scenic Rivers  
- 20-Section 4(f) Resources and Related Requirements  
Chapter 21 (Section 6(f)) has been merged with Chapter

Caltrans > SER > EH Vol I: Guidance for Compliance

Last Updated: Thursday, September 27, 2012 3:06 PM

## Environmental Handbook, Volume I: Guidance for Compliance

This section of the SER includes the bulk of the reference materials used during the preparation of environmental documents.

**In Prep** Editor(s) are working on content.

### I: Overview

[Chapter 1 - Federal Requirements](#) introduces the federal laws, Executive Orders, and regulations applicable to transportation projects. There are links to policy, guidance, directives and advisories pertaining to federal environmental laws, and agreements pertaining to National Environmental Policy Act and Department of Transportation Act Section 4(f) compliance. Agreements pertaining to other federal and state requirements are listed in [Section III: Topics](#).

[Chapter 2 - State Requirements](#) addresses the requirements of California law and regulations, the California Environmental Quality Act (CEQA) and its Guidelines as well as related state environmental statutes and regulations. CEQA compliance is required for all projects for which a public agency has a discretionary action unless the project is exempted by statute in an act of the Legislature. Refer to Section V: CEQA for the preparation and processing of CEQA-only categorical exemptions, initial studies, negative declarations, and environmental impact reports. Section VI: Joint Documents discusses joint CEQA and NEPA environmental documentation.

[Chapter 3 - Public Participation](#) sets forth the legal requirements for public hearings and notices, describes the public participation process during project development and transportation planning, and discusses government-to-government relations between the federal government and recognized Native American Tribal governments.

### II: Project Planning and Development

[Chapter 4 - Environmental Considerations During Transportation Planning](#) provides a brief overview of the Transportation Planning and Project Initiation processes that occur prior to the Project Approval and Environmental Document phase.

[Chapter 5 - Preliminary Environmental Scoping](#) discusses the various types of Project Initiation Documents (PIDs) used to program funds for transportation projects. It then addresses the preliminary environmental scoping documents used to identify the efforts needed to conduct the subsequent environmental studies and prepare the environmental document. The types of programming documents and the timing of the preparation of the preliminary environmental scoping documents differ based on whether the project will be on or off the State Highway System.

[Chapter 6 - Formal Scoping Process](#) describes the requirements and process to engage other agencies and parties to formally provide their views on the range and breadth of issues to be addressed in Environmental Impact Statement (EIS) or Environmental Impact report (EIR).

### III: Topics

[Chapter 7 - Topography/Geology/Soils/Seismic](#) provides information and requirements for describing geologic, soil and seismic conditions in the vicinity of the project area as well as an analysis of the potential environmental impacts of project alternatives on these conditions and the potential impacts of geotechnical conditions on the transportation facility.

[Chapter 8 - Paleontology](#) provides guidance on pertinent Federal and State statutes as well as recommended procedures and document formats for conducting paleontological studies in response to Federal, State, and local laws, regulations, and ordinances.

[Chapter 10 - Hazardous Materials, Hazardous Waste, and Contamination](#) provides an overview of the procedures used to address hazardous materials, hazardous wastes, and contamination during the project planning and delivery process.

[Chapter 11 - Air Quality](#) covers the regulatory framework and recommended procedures for performing an air quality analysis for both Caltrans and local agency transportation projects. Preparation of the air quality section of the environmental document and supporting technical report are discussed in detail. There is also discussion of air quality requirements throughout the project delivery process, from transportation conformity determinations at the regional planning stage to project requirements during construction.

[Chapter 12 - Noise](#) is an overview of Caltrans noise policies and procedures as they relate to transportation project planning and delivery. Information is provided to give the reader a basic understanding of the need to consider noise impacts, evaluate potential abatement measures and documentation requirements.

[Chapter 13 - Energy](#) discusses the policy and procedures regarding energy analysis, including when an energy analysis is required for a proposed project. This chapter also provides general guidance on how to conduct and write an energy analysis.

[Chapter 14 - Biological Resources](#) discusses the framework within which biological resources are considered during project planning, development and implementation. The laws, regulation and policy that apply to biological resources are discussed within the context of project delivery timelines.

[Chapter 15 - Waters of the U.S. and the State](#) provides guidance on laws and regulations, agency coordination, assessment and reporting requirements, and information needed for project delivery pertaining to Waters of the U.S. and the State.

[Chapter 17 - Floodplains](#), discusses the requirements of Executive Order 11988 and the responsibilities of FHWA, Caltrans and local agencies when projects encroach on a 100-year base floodplain.

[Chapter 18 - Coastal Zone](#), focuses on compliance with federal and state laws that protect coastal resources. Background on the applicable laws is given, followed by a general discussion of when those laws apply to a proposed project and what must be done if those laws do apply. References and links to more specific guidance on coastal resources issues are also provided.

[Chapter 19 - Wild and Scenic Rivers](#), discusses all river reaches officially designated as being part of the National Wild and Scenic River System and official "study" rivers. Also lists all river reaches officially designated as "wild", "scenic", or "recreational" by the California Resources Agency.

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12:08 PM

# RECREATIONAL LANDS

CPAD Edition

MapCollaborator

Introduction

Welcome to MapCollaborator™ for CPAD!

Use the CPAD Edition of MapCollaborator to help GreenInfo Network improve the [California Protected Areas Database](#).

Before adding or editing data, please review these [EDITING GUIDELINES](#).

Choose from the actions below to review parks, add comments about parks, propose the addition of new CPAD units (drawing on the map or upload your own GIS files), or propose the reshaping of existing units.

To get notices of when updates to CPAD are published, [sign up for our notification list](#).

Choose a Location

Select Lands to Review

Attach a Note

Draw a New CPAD Unit

Edit a CPAD Unit

Upload a Shapefile or KML

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Map Overlays

- CPAD 1.8 Units
- Proposed Edits to CPAD
  - Accepted
  - Declined
  - Pending
- CPAD Notes
  - Accepted
  - Declined
  - Pending
- File Uploads
- Schools

Map tiles and parks data by [GreenInfo Network](#). Streets data by [OpenStreetMap](#). Under CC BY SA.

Admin

<http://websites.greeninfo.org/mapcollaborator/cpad/>



# AIR QUALITY MAPS

California Environmental Protection Agency  
**Air Resources Board**

Home | Reducing Air Pollution | Air Quality | Business Assistance | Laws & Regulations | Health

## Area Designations Maps / State and National

This page last reviewed May 8, 2012

This web site provides area designation maps of California for all criteria pollutants that are designated for the State and national standards. These maps are updated annually for the [State area designations](#), as required by the Health and Safety Code (H&SC) section 39608. The Board makes State area designations for ten criteria pollutants: ozone, suspended particulate matter (PM10), fine suspended particulate matter (PM2.5), carbon monoxide, nitrogen dioxide, sulfur dioxide, sulfates, lead, hydrogen sulfide, and visibility reducing particles.

In contrast to the State area designations, the U.S. Environmental Protection Agency (U.S. EPA) makes national area designations for five criteria pollutants: ozone (8-hour standards; the 1-hour standard was revoked effective June 15, 2005), PM10, carbon monoxide, nitrogen dioxide, and sulfur dioxide. Although maps for the national area designations are provided below (designations as of September 2006), please refer to the [U.S. EPA website](#) for the most current information on the national area designations.

### 2011 State Area Designations

Changes were approved by the Board on June 23, 2011. These maps are the most current available and represent air quality based on 2007 to 2009 monitoring data.

- Ozone (area designation map, 1-hour area classification map \*\*)
- PM2.5 (area designation map)
- PM10 (area designation map)
- Carbon Monoxide (area designation map)
- Nitrogen Dioxide (area designation map)
- Sulfur Dioxide (area designation map)
- Sulfates (area designation map)
- Lead (area designation map)
- Hydrogen Sulfide (area designation map)
- Visibility Reducing Particles (area designation map)

(\*\* Per H&SC section 40921.5, classifications are based on data for 1989-1991 and reflect the State 1-hour standard)

### National Area Designations

The following maps were current as of February 2011. Please refer to the U.S. EPA website for the most current information on area designations for ozone and other pollutants. The national 1-hour ozone standard was revoked in June 2005.

- Ozone 8-Hour Standard (area designation map)
- PM10 (area designation map)
- PM2.5 (area designation map)
- Carbon Monoxide (area designation map)
- Lead (area designation map)
- Nitrogen Dioxide (area designation map)
- Sulfur Dioxide (area designation map)

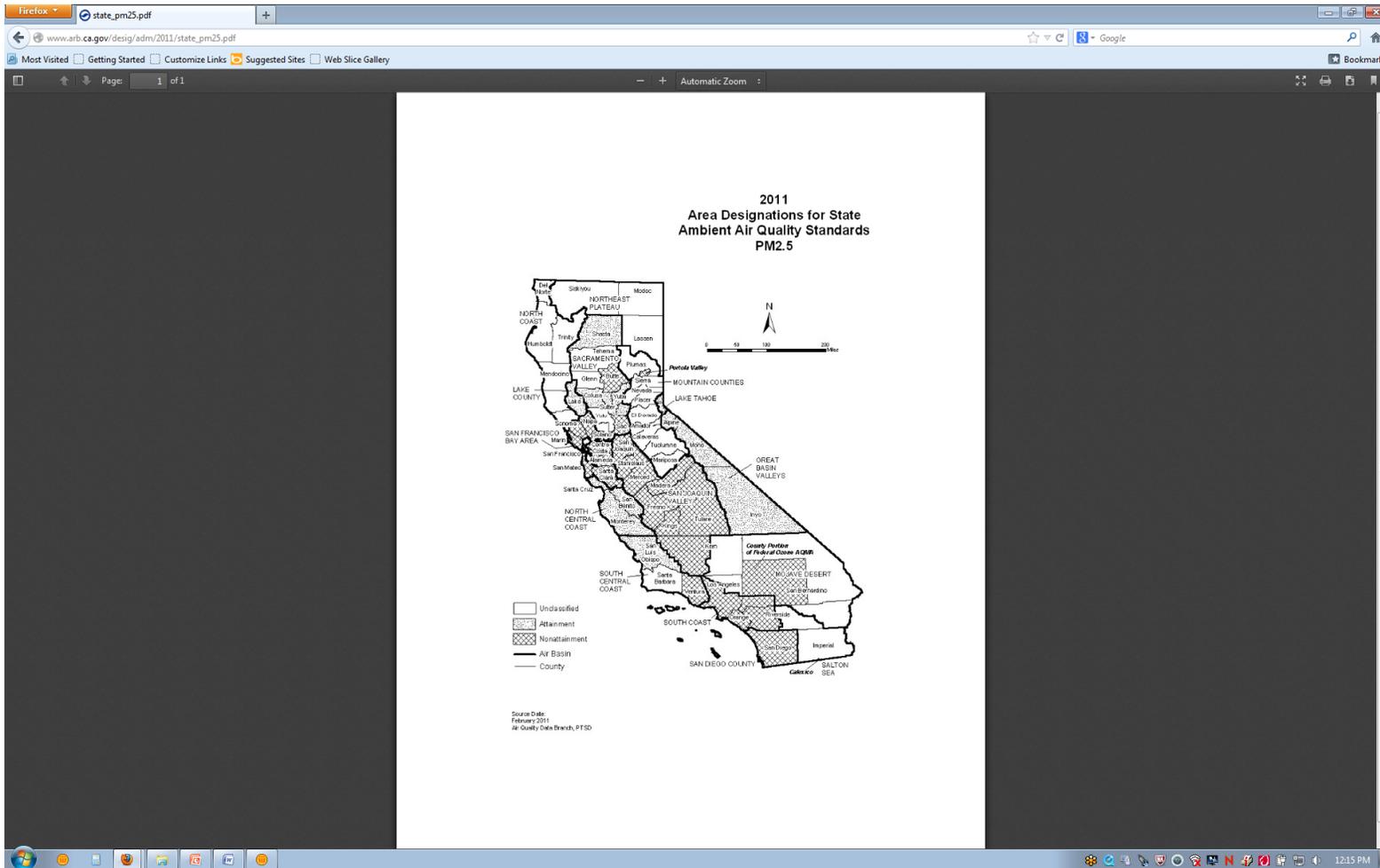
**Other Related Information**

- Air Basin and County Map Boundaries
- Definitions State and National Designation Categories

For comments on page, email [Theresa.Huerta](mailto:Theresa.Huerta@arb.ca.gov)

<http://www.arb.ca.gov/design/adm/adm.htm>

# EXAMPLE: PM 2.5



[http://www.arb.ca.gov/design/adm/2011/stat\\_e\\_pm25.pdf](http://www.arb.ca.gov/design/adm/2011/stat_e_pm25.pdf)



# COASTAL

The screenshot shows a Firefox browser window with the URL [www.coastal.ca.gov/lcps.html](http://www.coastal.ca.gov/lcps.html). The page features the California Coastal Commission logo and a navigation menu with items: Home, About Us, Public Meetings, Permits/Appeals, Get Involved, Programs, Local Resources, and Publications. The main content area is titled "Local Coastal Programs" and contains the following text:

Local Coastal Programs (LCPs) are basic planning tools used by local governments to guide development in the coastal zone, in partnership with the Coastal Commission. LCPs contain the ground rules for future development and protection of coastal resources in the 76 coastal cities and counties. The LCPs specify appropriate location, type, and scale of new or changed uses of land and water. Each LCP includes a land use plan and measures to implement the plan (such as zoning ordinances). Prepared by local government, these programs govern decisions that determine the short- and long-term conservation and use of coastal resources. While each LCP reflects unique characteristics of individual local coastal communities, regional and statewide interests and concerns must also be addressed in conformity with [Coastal Act](#) goals and policies. Following adoption by a city council or county board of supervisors, an LCP is submitted to the Coastal Commission for review for consistency with Coastal Act requirements.

Many of the 76 coastal counties and cities have elected to divide their coastal zone jurisdictions into separate geographic segments, resulting in some 128 separate LCP segments. As of 2011, approximately 72% of the LCP segments have been effectively certified, representing about 85% of the geographic area of the coastal zone, and local governments are issuing coastal permits in these areas. To determine the status of the LCP in any given geographic area, contact the appropriate [district office](#) of the Coastal Commission or see the current [LCP Status Report](#).

After an LCP has been finally approved, the Commission's coastal permitting authority over most new development is transferred to the local government, which applies the requirements of the LCP in reviewing proposed new developments. The Commission retains permanent coastal permit jurisdiction over development proposed on tidelands, submerged lands, and public trust lands, and the Commission also acts on appeals from certain local government coastal permit decisions. The Commission reviews and approves any amendments to previously certified Local Coastal Programs.

LCP Status Updates (with actions as of June 30, 2012)

- > [Full Report](#)
- > [Summary Chart](#)
- > [Individual Chapters for Each District](#)

Local Coastal Program (LCP) Status Maps current as of July 1, 2011 [in PDF]:

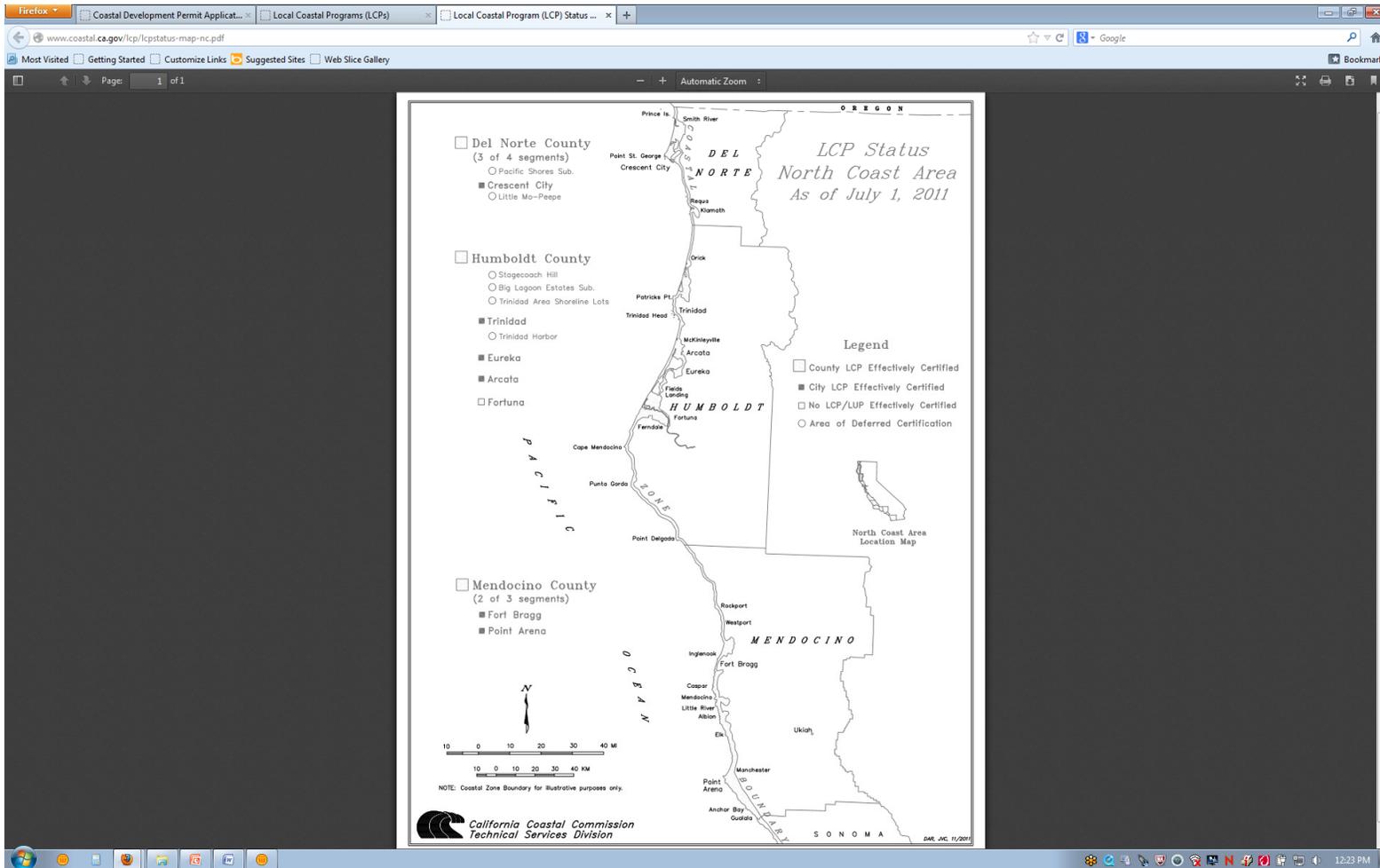
- > [North Coast Area](#)
- > [North Central Coast Area](#)
- > [Central Coast Area](#)
- > [South Central Coast Area](#)
- > [South Coast Area](#)
- > [San Diego Coast Area](#)

At the bottom of the page, there are links for [Back to Top](#), [Help](#), [Contact Us](#), and [Site Map](#). Below these are links for [Get Acrobat Reader](#), [Conditions of Use](#), and [Privacy Policy](#). The footer text reads "Copyright © 2012 State of California".

<http://www.coastal.ca.gov/lcps.html>



# EXAMPLE: NORTH COAST



<http://www.coastal.ca.gov/lcp/lcpstatus-map-nc.pdf>



# FISH PASSAGE

The screenshot displays the CalFish IMAPS Viewer interface in a Mozilla Firefox browser. The main map area shows a geographical view of California with various data points and layers overlaid. The legend on the left is organized into several sections:

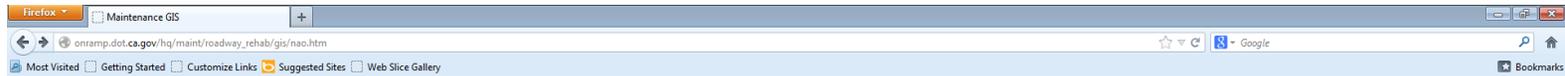
- Summary - NCWAP**
  - Jurisdictional Limits
  - California Fish Passage Assessment Database
  - CDEC Stations
  - USGS Gaging Stations
- Management and Conservation**
  - Zoning - Ventura County
  - NOAA Authorizations and Permits for Protected Species
  - Wildlife Conservation Board (WCB) Approved Projects (9872)
  - DFO Owned and Operated Lands
  - Ecosystem Restoration Program
  - Hatcheries
  - Fisheries Restoration Grant Program (FRGP) Projects (ds168)
  - Fisheries Restoration Grant Program (FRGP) boundary
  - Protected Spawning Areas - Fish and Game Code 1505
- Base Layers**
  - California Streams
  - Cities
  - Highways
  - Hydrography (100K)
  - Hydrography (500K)
  - California Lakes
  - Quadrangles (24K)
  - Public Land Survey
  - Hydrologic Units
  - Waterbodies

The browser's address bar shows the URL: <http://www.calfish.org/DataampMaps/CatFishGeographicData/tabid/91/Default.aspx>. The browser window also displays navigation links like "Content", "Footer", "Accessibility", and "Internal Search". The system tray at the bottom indicates the time is 2:44 PM.

X <http://www.calfish.org/DataampMaps/CatFishGeographicData/tabid/91/Default.aspx>



# NATURALLY OCCURRING ASBESTOS



## Areas Likely to Contain Naturally Occurring Asbestos

gis

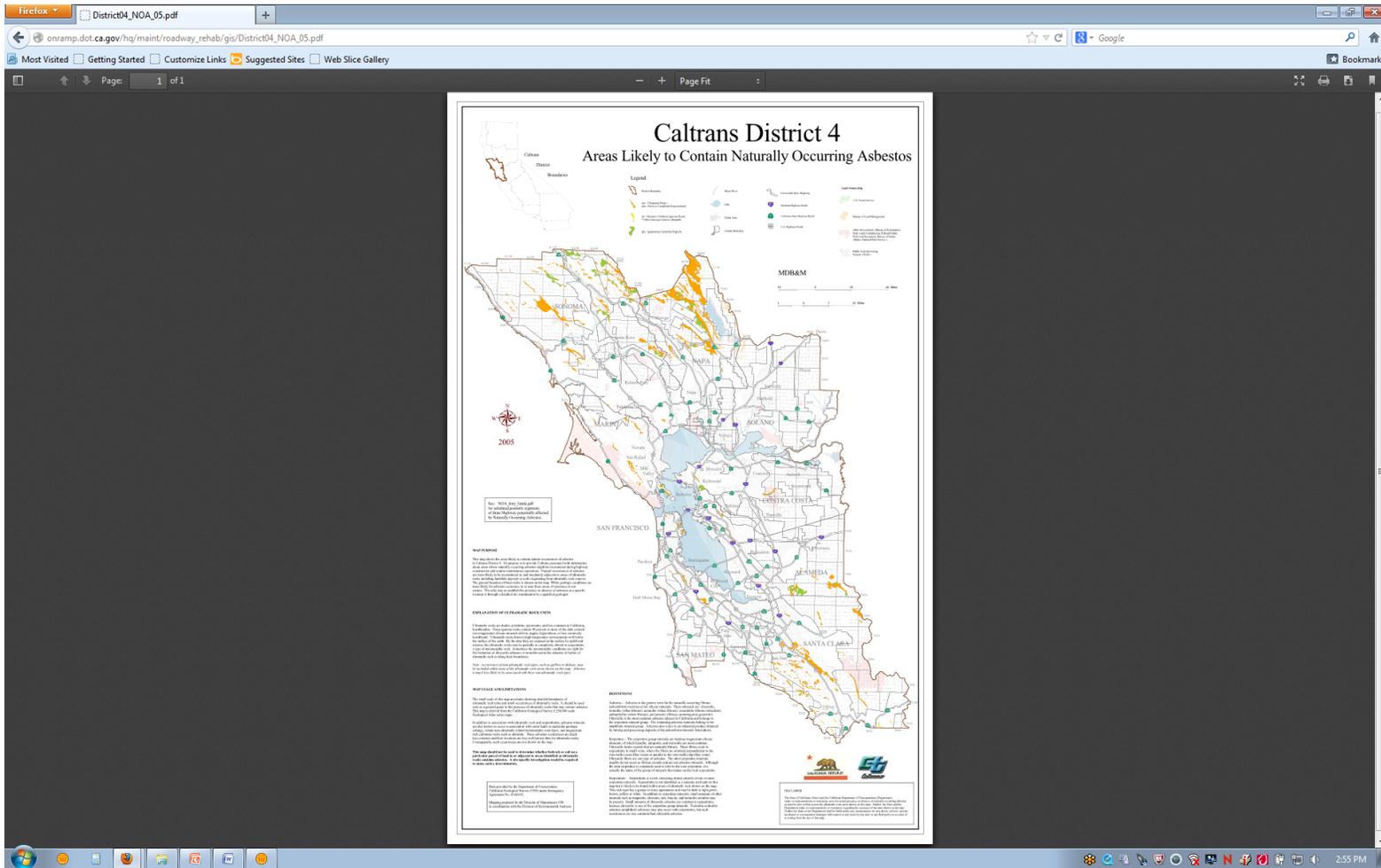
<a href="#">Dist. 1</a>	<a href="#">Dist. 2</a>	<a href="#">Dist. 3</a>
<a href="#">Dist. 4</a>	<a href="#">Dist. 5</a>	<a href="#">Dist. 6</a>
<a href="#">Dist. 8</a>	<a href="#">Dist. 9</a>	<a href="#">Dist. 10</a>
	Naturally Occurring Asbestos Highway Limits	

[Return](#)

http://onramp.dot.ca.gov/hq/maint/roadway\_rehab/gis/nao.htm



# MAP VIEW



[http://onramp.dot.ca.gov/hq/maint/roadway\\_rehab/gis/District04\\_NOA\\_05.pdf](http://onramp.dot.ca.gov/hq/maint/roadway_rehab/gis/District04_NOA_05.pdf)



# TABLE VIEW

http://onramp.dot.ca.gov/hq/maint/roadway  
y\_rehab/gis/noa\_hwy\_limits\_05.pdf



Firefox | noa\_table2.PDF - noa\_hwy\_limits\_05.pdf

onramp.dot.ca.gov/hq/maint/roadway\_rehab/gis/noa\_hwy\_limits\_05.pdf

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DISTRICT	COUNTY	ROUTE	LENGTH	PM	NOA_ID	ORIGLITHSY	MAINTENANCE REGION
1	DN	197	0.6	R0 1 / R0 7	WEE-112-R	Jum	District 1 - Eureka Region
1	DN	199	0.2	11 558 / 11 758	WEE-120-R	Qls	District 1 - Eureka Region
1	DN	199	0.1	12 358 / 12 458	WEE-124-R	Jum	District 1 - Eureka Region
1	DN	199	0.5	12 958 / 13 458	WEE-123-R	Qls	District 1 - Eureka Region
1	DN	199	0.3	21 441 / 21 741	WEE-112-R	Jum	District 1 - Eureka Region
1	DN	199	0.6	6 258 / 6 858	WEE-112-R	Jum	District 1 - Eureka Region
1	DN	199	6.5	T14 758 / 19 841	WEE-112-R	Jum	District 1 - Eureka Region
1	HUM	96	0.8	20 915 / 21 715	WEE-082-R	Jum	District 1 - Eureka Region
1	HUM	96	0.3	27 915 / 28 215	WEE-088-R	Jum	District 1 - Eureka Region
1	HUM	169	0.4	32 4 / 32 8	WEE-084-R	Qls	District 1 - Eureka Region
1	HUM	299	1.0	31 478 / 32 478	RED-005-A	ub	District 1 - Eureka Region
1	HUM	299	0.2	34 478 / 34 678	RED-003-A	ub	District 1 - Eureka Region
1	HUM	299	0.4	35 578 / 35 978	RED-001-A	ub	District 1 - Eureka Region
1	HUM	299	0.7	36 178 / 36 878	RED-001-A	ub	District 1 - Eureka Region
1	LAK	20	0.7	40 1 / 41	UKI-117-A	ub	District 1 - Eureka Region
1	LAK	29	1.4	0 0 / 1 4	SRO-140-R	um	District 1 - Eureka Region
1	LAK	29	0.4	51 471 / 51 871	UKI-110-A	ub	District 1 - Eureka Region
1	LAK	29	0.1	7 / 7 1	SRO-087-R	um	District 1 - Eureka Region
1	LAK	29	0.5	8 1 / 8 5	SRO-086-R	um	District 1 - Eureka Region
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1	LAK	29	0.3	R45 8 / R46 1	UKI-105-A	ub	District 1 - Eureka Region
1	LAK	175	0.1	20 554 / 20 654	SRO-084-R	um	District 1 - Eureka Region
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1	MEN	101U	0.4	0 0 / 0 4	SRO-234-R	um	District 1 - Eureka Region
1	MEN	101	1.9	1 103 / 3 003	SRO-237-R	Qls	District 1 - Eureka Region
1	MEN	101	0.4	39 223 / 39 923	UKI-058-A	ub	District 1 - Eureka Region
1	MEN	101	0.3	R0 103 / R0 403	SRO-234-R	um	District 1 - Eureka Region
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1	MEN	128	0.9	29 8 / 30 7	SRO-016-R	um	District 1 - Eureka Region
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1	MEN	253	0.2	0 7 / 0 9	UKI-106-A	ub	District 1 - Eureka Region
1	MEN	271	0.3	0 0 / 0 3	UKI-001-A	ub	District 1 - Eureka Region
2	PLU	70	4.9	18 7 / 23 8	WOD-001-A	ub	District 2 - Field Region
2	PLU	70	0.6	50 1 / 50 7	CHI-107-R	um	District 2 - Field Region
2	PLU	70	0.4	51 0 / 51 4	CHI-107-R	um	District 2 - Field Region
2	SHA	5	0.5	66 195 / 66 695	WEE-278-R	Op	District 2 - Field Region
2	SIS	3	5.5	0 408 / 5 908	WEE-274-R	Op	District 2 - Field Region
2	SIS	3	5.5	38 608 / 44 108	WEE-399-R	Op	District 2 - Field Region
2	SIS	3	0.8	R47 403 / R47 403	WEE-398-R	Op	District 2 - Field Region
2	SIS	5	0.1	0 8 / 0 9	WEE-278-R	Op	District 2 - Field Region
2	SIS	5	1.7	R47 885 / R49 585	WEE-398-R	Op	District 2 - Field Region
2	SIS	96	3.9	23 854 / 27 854	WEE-236-R	um	District 2 - Field Region
2	SIS	96	0.4	28 654 / 29 054	WEE-236-R	um	District 2 - Field Region
2	SIS	96	1.5	29 554 / 31 154	WEE-236-R	um	District 2 - Field Region
2	SIS	96	0.8	35 454 / 36 254	WEE-228-R	um	District 2 - Field Region

noa\_table2.xls | 1 | 12/1/2004

onramp.dot.ca.gov/hq/maint/roadway\_rehab/gis/noa\_hwy\_limits\_05.pdf

2:55 PM

# EXAMPLE DATA SOURCE

The screenshot shows a Firefox browser window displaying the EcoAtlas website. The address bar shows the URL `dev.ecoatlas.org`. The website has a navigation menu with links for HOME, ABOUT, CONTACT, DATA, and REGIONS. A search bar is located in the top right corner. The main content area features a large heading "Where are the aquatic resources and how are they doing?" followed by the "EcoAtlas" logo. Below the logo, there is a paragraph of text and a list of three key features: Projects, Resource Extent, and Condition. A map of California is shown on the left side of the page, and a list of regional data sources is on the right. The browser's taskbar at the bottom shows the time as 11:54 AM.

**EcoAtlas** HOME ABOUT CONTACT DATA REGIONS Search

Where are the aquatic resources and how are they doing?

California EcoAtlas provides access to information for effective wetland management. The maps and tools can be used to create a complete picture of aquatic resource in the landscape by integrating stream and wetland maps, restoration information, and monitoring results with land use, transportation, and other information important to the state's wetlands.

- **Projects:** Restoration project maps, plans, contact information, and a library of project files.
- **Resource Extent:** Maps of aquatic resource extent and special habitats of interest.
- **Condition:** Assessment and monitoring data including relevant water quality and California Rapid Assessment Method CRAM data.

**Statewide** Map Projects Summaries

Eco Regions Water Board Regions

- Klamath/North Coast
- Bay/Delta
- Central Coast
- Modoc
- South Coast
- Sierra
- Sacramento Valley
- Mojave
- San Joaquin Valley



# MAPPING RESOURCES

The screenshot shows a web browser window displaying the EcoAtlas Sacramento Valley Interactive Map. The browser's address bar shows the URL `dev.ecoatlas.org/regions/ecoregion/sacramento-valley`. The website's navigation menu includes links for HOME, ABOUT, CONTACT, DATA, and REGIONS. A search bar is located in the top right corner. Below the navigation, the page title is "Sacramento Valley : Map | Projects | Summaries". The main heading is "Interactive Map", followed by interactive controls for Layers, Legends, Background, and Overlays, and a Tools button. The central map area displays a satellite view of the Sacramento Valley region, overlaid with various data layers. These layers include green areas representing wetlands, blue areas representing water bodies, and brown areas representing agricultural or developed land. Major roads like CA-20 and CA-99 are visible. The map includes standard navigation tools like a compass, zoom in/out buttons, and a scale bar. At the bottom of the browser window, the Windows taskbar is visible, showing several pinned applications: "CRAM is a cost-effective", "My Water", "Powered by", "The California Environmental", and "The California Wetland". The system clock in the bottom right corner of the taskbar shows the time as 12:06 PM.



# AQUATIC RESOURCES

The screenshot shows a web browser window displaying the EcoAtlas Sacramento Valley map. The browser address bar shows the URL `dev.ecoatlas.org/regions/ecoregion/sacramento-valley`. The website header includes the EcoAtlas logo and navigation links: HOME, ABOUT, CONTACT, DATA, and REGIONS. A search bar is located on the right side of the header.

Below the header, there are navigation options for Layers, Legends, Background, and Overlays, along with a Tools button. The main content area features a map of the Sacramento Valley region with various aquatic resources highlighted in different colors. A legend titled "Existing Aquatic Resources - CARI" is overlaid on the map, listing the following categories:

- Estuarine Intertidal
- Estuarine Muted Tidal
- Estuarine Subtidal
- Marine Intertidal
- Tidal
- Palustrine
  - Depressional
  - Lacustrine
  - Playa
  - Fluvial
  - Slope
  - Vernal Pool/Vernal Pool Complex

The map shows a network of rivers and wetlands, with roads like CA-20 and CA-70 visible. The bottom of the page contains four informational boxes:

- CRAM:** A cost-effective tool for assessing the health of wetlands and riparian habitats. It can be used to assess ambient conditions and the performance of restoration projects.
- Water Quality:** Theme-based My Water Quality Portals provide answers to the public to fundamental questions on the health of aquatic resources throughout the State.
- Powered by CEDEN:** The California Environmental Data Exchange Network is a statewide system that enables data sharing of water quality and aquatic resources related monitoring data.
- California Wetland Monitoring Workgroup:** The California Wetland Monitoring Workgroup works to improve monitoring and assessment of wetland and riparian resources through statewide monitoring and increased cooperation.

The Windows taskbar at the bottom shows the system clock at 12:07 PM and various application icons.



# LANDSCAPE PROFILE

The screenshot displays the EcoAtlas web application interface. At the top, the browser address bar shows the URL `dev.ecoatlas.org/regions/ecoregion/sacramento-valley`. The website header includes the EcoAtlas logo and navigation links for HOME, ABOUT, CONTACT, DATA, and REGIONS. A search bar is located on the right side of the header. Below the header, there are dropdown menus for Layers, Legends, Background, and Overlays, along with a Tools button. The main content area features a satellite map of the Sacramento Valley region, overlaid with various data layers. The map shows roads, water bodies, and areas highlighted in green and blue. A sidebar on the right side of the map is titled "Tools" and contains a list of interactive options: Zoom to Location, Measure Tools, Wetland Projects List, Wetland Condition (CRAM), and Landscape Profiles. At the bottom of the page, there are four informational boxes. The first box, titled "CRAM", describes it as a cost-effective tool for assessing wetland and riparian health. The second box, titled "Water Quality", mentions that theme-based My Water Quality Portals provide answers to the public. The third box, titled "Powered by CEDEN", describes the California Environmental Data Exchange Network as a statewide system for data sharing. The fourth box, titled "Wetland", describes the California Wetland Monitoring Workgroup's work to improve monitoring and assessment of wetland and riparian resources. The Windows taskbar at the bottom shows the system time as 12:21 PM.

**EcoAtlas** HOME ABOUT CONTACT DATA REGIONS

Layers ▾ Legends ▾ Background ▾ Overlays ▾ Tools

### Tools

- [Zoom to Location](#)
- [Measure Tools](#)
- [Wetland Projects List](#)
- [Wetland Condition \(CRAM\)](#)
- [Landscape Profiles](#)

**CRAM** is a cost-effective tool for assessing the health of wetlands and riparian habitats. It can be used to assess ambient conditions and the performance of restoration projects.

**Water Quality** Theme-based My Water Quality Portals provide answers to the public to fundamental questions on the health of aquatic resources throughout the State.

**Powered by CEDEN** The California Environmental Data Exchange Network is a statewide system that enables data sharing of water quality and aquatic resources related monitoring data.

**Wetland** The California Wetland Monitoring Workgroup works to improve monitoring and assessment of wetland and riparian resources through statewide monitoring and increased cooperation.



# LANDSCAPE PROFILE, CONT'D

The screenshot displays the EcoAtlas web application interface. At the top, the browser address bar shows the URL `dev.ecoatlas.org/regions/ecoregion/sacramento-valley`. The navigation menu includes **EcoAtlas**, **HOME**, **ABOUT**, **CONTACT**, **DATA**, and **REGIONS**. A search bar is located on the right. Below the navigation, there are tabs for **Layers**, **Legends**, **Background**, and **Overlays**, along with a **Tools** button.

The main content area features a map of the Sacramento Valley region, overlaid with a landscape profile. The profile is a blue line that follows a path through the landscape, with various colored areas (green, yellow, orange, red) indicating different landscape features or data layers. The map includes labels for roads such as **Woodruff**, **Mathews Ln**, **CA-20**, **70**, **30**, **8**, **Hammondon**, and **Smartsville Rd**. A sidebar on the right is titled **Landscape Profiles** and contains the following options:

- [Auto-delineated basin by StreamStats](#)
- [Draw your area of interest](#)
  -
- [Pre-defined areas](#)

At the bottom of the page, there are four informational boxes:

- CRAM**: A cost-effective tool for assessing the health of wetlands and riparian habitats. It can be used to assess ambient conditions and the performance of restoration.
- Water Quality**: Theme-based My Water Quality Portals provide answers to the public to fundamental questions on the health of aquatic resources throughout the State.
- Powered by CEDEN**: The California Environmental Data Exchange Network is a statewide system that enables data sharing of water quality and aquatic resources related.
- Wetland**: The California Wetland Monitoring Workgroup works to improve monitoring and assessment of wetland and riparian resources through statewide monitoring and increased cooperation.

The footer contains the URL `maps.californiawetlands.net/wtmapper_dev/ecoatlasmap/current/?region=16&type=ecoregion&region_name=sacramento-valley#collapseOne` and the system clock shows **12:21 PM**.



# LANDSCAPE PROFILE, CONT'D

The screenshot displays the EcoAtlas web application interface. At the top, the browser address bar shows the URL `dev.ecoatlas.org/regions/ecoregion/sacramento-valley`. The navigation menu includes **HOME**, **ABOUT**, **CONTACT**, **DATA**, and **REGIONS**. A search bar is located on the right. Below the navigation, there are tabs for **Layers**, **Legends**, **Background**, and **Overlays**, along with a **Tools** button.

The main content area features a map of the Sacramento Valley region with various landscape profiles overlaid in green and blue. To the right of the map is a panel titled **Landscape Profiles**. This panel contains three sections:

- Auto-delineated basin by StreamStats**
- Draw your area of interest**
- Pre-defined areas**, which includes a list of options:
  - None
  - Hydrologic Regions (HUC8)
  - Counties
  - Congressional Districts

At the bottom of the interface, there are four informational boxes:

- CRAM**: A cost-effective tool for assessing the health of wetlands and riparian habitats. It can be used to assess ambient conditions and the performance of restoration projects.
- Water Quality**: Theme-based My Water Quality Portals provide answers to the public to fundamental questions on the health of aquatic resources throughout the State.
- Powered by CEDEN**: The California Environmental Data Exchange Network is a statewide system that enables data sharing of water quality and aquatic resources related monitoring data.
- Wetland**: The California Wetland Monitoring Workgroup works to improve monitoring and assessment of wetland and riparian resources through statewide monitoring and increased cooperation.

The Windows taskbar at the bottom shows the system clock at 12:22 PM.



# LANDSCAPE PROFILE, CONT'D

The screenshot displays the EcoAtlas web application interface. The browser address bar shows the URL `dev.ecoatlas.org/regions/ecoregion/sacramento-valley`. The page title is "Sacramento Valley : Map | Projects | Summaries". The main heading is "Interactive Map".

The "Landscape Profile" window is open, showing the following data:

- Area: 411,820.66 acres / 643.47 sq mi
- California Aquatic Resource Inventory
  - Estuarine and Coastal: *No estuarine or coastal wetlands found*
  - Palustrine Wetlands: 45,960 acres
- Drainage Features / Streams: 1,915 miles
  - Fluvial: 1,915 miles

A pie chart illustrates the composition of Palustrine Wetlands:

Wetland Type	Percentage
Depressional	40.1%
Lacustrine	18.7%
Riverine	31.8%
Slope	-
Vernal Pool/Vernal Pool Complex	-

The "Landscape Profiles" sidebar on the right offers options for auto-delineated basins and pre-defined areas:

- Auto-delineated basin by StreamStats
- Draw your area of interest
- Pre-defined areas
  - None
  - Hydrologic Regions (HUC8)
  - Counties
  - Congressional Districts

A button at the bottom of the sidebar reads: "Click on a region on the map to get its landscape profile."

The taskbar at the bottom shows several application icons and the system clock at 12:23 PM.



# ADDITIONAL INFORMATION PROVIDED

The screenshot displays the EcoAtlas web application in a Firefox browser window. The URL is [dev.ecoatlas.org/regions/ecoregion/sacramento-valley](http://dev.ecoatlas.org/regions/ecoregion/sacramento-valley). The page features a navigation menu with links for HOME, ABOUT, CONTACT, DATA, and REGIONS. A search bar is located in the top right corner. Below the navigation, there are tabs for Layers, Legends, Background, and Overlays, along with a Tools button.

The main content area is divided into two panels. The left panel, titled "Landscape Profile", contains several sections:

- CRAM Assessments (5)**: A section for CRAM assessments.
- Census 2010 Estimates**:
  - Population: 90,985 persons
  - Population Density: 143 persons per sq mile
  - Housing Units: 35,637 units
  - Housing Units Density: 56 units per sq mile
- CNDDB Species Information**:

CNDDB Species Information:  
Your area of interest *may* contain the following state and federally listed species. This data summary is provided for informational purposes only and is based on coarse scale data (7.5 quad scale). You can refer to the [CNDDB web site](#) for more information.
- Federally Listed Species**: A section for federally listed species.
- California Listed Species**: A section for California listed species.

The right panel, titled "Landscape Profiles", offers options for delineating basins and defining areas of interest:

- Auto-delineated basin by StreamStats**
- Draw your area of interest**
- Pre-defined areas**:
  - None
  - Hydrologic Regions (HUC8)
  - Counties
  - Congressional Districts

A blue button at the bottom of the right panel reads: "Click on a region on the map to get its landscape profile."

At the bottom of the page, there are four informational boxes with logos and text:

- CRAM**: CRAM is a cost-effective tool for assessing the health of wetlands and riparian habitats. It can be used to assess ambient conditions and the performance of restoration projects.
- Water Quality**: Theme-based My Water Quality Portals provide answers to the public to fundamental questions on the health of aquatic resources throughout the State.
- Powered by CEDEN**: The California Environmental Data Exchange Network is a statewide system that enables data sharing of water quality and aquatic resources related monitoring data.
- Wetland Monitoring Workgroup**: The California Wetland Monitoring Workgroup works to improve monitoring and assessment of wetland and riparian resources through statewide monitoring and increased cooperation.

The Windows taskbar at the bottom shows the system time as 12:24 PM.



# LAND COVER

The screenshot shows the EcoAtlas web application interface. The browser address bar displays `dev.ecoatlas.org/regions/ecoregion/sacramento-valley`. The navigation menu includes HOME, ABOUT, CONTACT, DATA, and REGIONS. A search bar is located on the right. Below the navigation, there are tabs for Layers, Legends, Background, and Overlays, along with a Tools button.

The main content area is titled "Landscape Profile" and features a map of the Sacramento Valley. A sidebar on the left contains two sections:

- California Listed Species**: A section with a plus sign icon.
- Land Cover by NLCD 2006 Category**: A horizontal bar chart showing the estimated percentage of area for various land cover categories.

The bar chart data is as follows:

Land Cover Category	Percent of Area (estimated)
Forest	~1
Grasslands	~18
Crops/Pasture	~4
Developed, open space	~3
Barren	~2
Shrub/scrub	~1
Water	~1
Wetlands, emergent	~1
Developed, low intensity	~1
Wetlands, woody	~1
Developed, medium intensity	~1

Below the chart, the text "Percent of Area (estimated)" is displayed. To the right of the map, there is a "Landscape Profiles" section with the following options:

- Auto-delineated basin by StreamStats
- Draw your area of interest
- Pre-defined areas
  - None
  - Hydrologic Regions (HUC8)
  - Counties
  - Congressional Districts

A blue button below these options reads: "Click on a region on the map to get its landscape profile."

At the bottom of the page, there are four promotional banners:

- CRAM**: A cost-effective tool for assessing the health of wetlands and riparian habitats. It can be used to assess ambient conditions and the performance of restoration projects.
- Water Quality**: Theme-based My Water Quality Portals provide answers to the public to fundamental questions on the health of aquatic resources throughout the State.
- Powered by CEDEN**: The California Environmental Data Exchange Network is a statewide system that enables data sharing of water quality and aquatic resources related monitoring data.
- Wetland Monitoring Workgroup**: The California Wetland Monitoring Workgroup works to improve monitoring and assessment of wetland and riparian resources through statewide monitoring and increased cooperation.

The Windows taskbar at the bottom shows the system clock as 12:25 PM.



# LANDSCAPE PROFILE

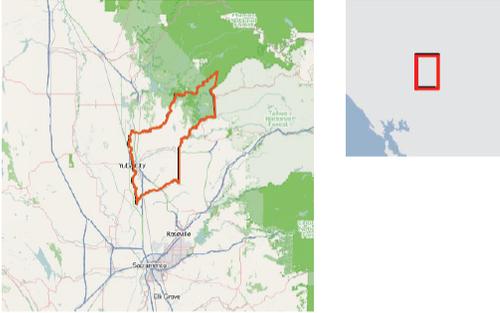
applicationmap.pdf - Adobe Acrobat Pro  
File Edit View Window Help

Create [Icons] 66.6% [Icons] Tools Comment

---

## EcoAtlas Landscape Profile Report

Type of Region Profiled: Predetined  
Area of Region: 411,820.66 Acres / 643.47 sq miles



**California Aquatic Resources (CARI)**  
The California Aquatic Resource Inventory, or CARI, is a standardized statewide map of wetlands, streams, and riparian areas. This Geographic Information System (GIS) dataset provides accurate and detailed information about wetland and riparian distribution and abundance for management, planning, and research of the State's aquatic resources. For more information contact CARImapping@sfei.org .



**CARI Wetlands**  
Total area of wetlands: 45960 acres

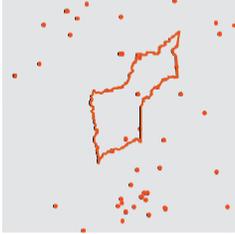
- Area of Palustrine wetlands: 45960 acres
  - Depressional: 18439
  - Lacustrine: 8600
  - Riverine: 4227
  - Slope: 87
  - Vernal Pool/Vernal Pool Complex: 14607
- Area of Estuarine wetlands: 0 acres

**CARI Drainage Features**  
Total Length of Drainage Features: 1914.668 miles

- Length of Riverine Features: 1914.668 miles
- Length of Tidal Riverine Features: 0.000 miles

**California Rapid Assessment Method (CRAM)**  
The California Rapid Assessment Method (CRAM) is a standardized, cost-effective tool for assessing the health of wetlands and riparian habitats of California. It is designed to enable standardized ambient assessments at multiple scales: projects, watersheds, regions, and statewide. CRAM can be used to assess compensatory mitigation projects as well as restoration projects to help evaluate the performance of wetland and riparian protection policies and programs. The use of CRAM for ambient monitoring will, over time, help wetland managers and scientists quantify the relative influence of anthropogenic stress, management actions, and natural disturbance on the spatial and temporal variability in reference conditions. This information can then be used in the design, management, and assessment of projects. For more detailed information on CRAM: <http://www.cramwetlands.org>.

Number of CRAM Assessment Areas in profiled region: 5



**CRAM Assessments in this region:**

- Dry Creek
- Dry Creek 03324
- Dry Creek 0430
- New York Creek
- Oregon Creek

*For details on an assessment, view and click on it in the EcoAtlas Mapper*

**California Wetland Restoration Projects**  
Number of Wetland Restoration Projects in profiled region: 0

**Census 2010 Estimates**

- Population density (persons per sq mile of habitable land): 143
- Housing units: 35637
- Population: 90985
- Housing unit density: 56

**Percent Land Cover by NLCD 2006 Category**

- Forest: 1%
- Grasslands: 23%
- Crops/Pasture: 3%
- Developed, open space: 4%
- Barren: 3%
- Shrub/scrub: 3%
- Water: 2%
- Wetlands, emergent: 1%
- Developed, low intensity: 1%
- Wetlands, woody: 1%
- Developed, medium intensity: 1%

[Windows Taskbar: 12:26 PM]



# DATA QUALITY

The screenshot shows a Firefox browser window displaying the EcoAtlas website at dev.ecoatlas.org/data/. The website has a navigation menu with links for HOME, ABOUT, CONTACT, DATA, and REGIONS. A search bar is located in the top right. On the left side, there is a vertical menu with links to 'Our Data', 'CARI', 'CEDEN', 'CNDDDB', 'CRAM', 'Census', 'National Land Cover Dataset', and 'USGS StreamState'. The main content area is titled 'Our Data' and contains a paragraph explaining that EcoAtlas aggregates data from various sources. Below this, there are two sections: 'California Aquatic Resource Inventory (CARI)' and 'California Environmental Data Exchange Network (CEDEN)'. The CARI section describes a standardized statewide map of wetlands, streams, and riparian areas, and mentions that pre-CARI mapping efforts were challenging due to varying levels of detail and coverage. The CEDEN section is partially visible at the bottom of the page.

**Our Data**

EcoAtlas aggregates data from many different data sources. Below are descriptions on the data and links for more detailed information.

**California Aquatic Resource Inventory (CARI)**

The California Aquatic Resource Inventory, or CARI, is a standardized statewide map of wetlands, streams, and riparian areas. This Geographic Information System (GIS) dataset provides accurate and detailed information about wetland and riparian distribution and abundance for management, planning, and research of the State's aquatic resources.

Pre-CARI mapping efforts for California contain varying levels of detail, vintages, coverage, and classifications, which makes comparisons of wetland presence across the state challenging. To improve wetland and riparian data in the state, CARI is produced using a standardized mapping approach developed by statewide experts and implemented regionally drawing on local knowledge. Examples of CARI mapping can be seen in the SF Bay Area, Lake Tahoe Basin (Upper Truckee River Watershed), and the Southern California Coast. As CARI efforts continue to produce high-quality, comprehensive maps, there is still a need for a single statewide dataset of aquatic resource data. CARIV0, as seen on EcoAtlas Modern Habitats, is a compilation of multiple data sources to produce seamless coverage across the state. Datasets used in CARI v0 include the National Wetland Inventory (USFWS), National Hydrography Dataset (USGS), and regional intensified maps.

For more information contact [CARImapping@sfei.org](mailto:CARImapping@sfei.org).

**California Environmental Data Exchange Network (CEDEN)**

The California Environmental Data Exchange Network (CEDEN) is a central location to find and share information about California's water bodies, including streams, lakes, rivers, and the coastal ocean.



QUESTIONS?

