

California's Protected Areas Database

Introduction

The evaluation of the supply of outdoor recreation lands is a fundamental requirement of the California Outdoor Recreation Plan (CORP) and an important tool for identifying outdoor recreation resources and needs statewide. In 2006, California State Parks was awarded a Land and Water Conservation Fund grant to complete a statewide inventory of public open-space and recreation lands. This project contributes significantly towards the evaluation of the statewide supply of local outdoor recreation resources.

The California Protected Areas Database (CPAD) will be used by LWCF applicants statewide to demonstrate that their project proposals meet an outdoor recreation need for protected open space and recreation lands. The CPAD illustrates the distribution of protected areas throughout the state, identifying those regions that are lacking parks, such as the Central Valley. DPR is currently developing selection criteria funded by the "Safe Drinking Water, Water Quality and Supply, Flood Control, River and Coastal Protection Bond Act of 2006" that use the CPAD as a tool for determining if proposed grant projects duplicate existing park resources, so that priority is given to park projects proposed for underserved areas. The CPAD was introduced during the public outreach development of the Issues and Actions as a local and regional tool for implementing the Actions through identifying outdoor recreation needs and priorities.

Initially, the intent was to start with a pilot GIS database for six Sacramento Area Council of Government counties and then expand the database to include the rest of the state. During the initial research into available contractors however, it was found that a non-profit organization, GreenInfo Network, had already begun a virtually identical searchable inventory and had already successfully compiled and developed a GIS database for all of Southern California and the Bay Area. California State Parks was able to leverage its grant monies by providing GreenInfo Network with the funds necessary to finish collecting the data for the entire state. This fortuitous collaboration provided a unique opportunity for both California State Parks and the GreenInfo Network to complete a project that for the individual agency might have been cost prohibitive.

The California Protected Areas Database (CPAD) is an inventory of all land in California that is protected in fee ownership primarily for open-space use. It includes everything from small urban parks to large national parks. In total, CPAD includes 48 million acres of protected lands in over 14,000 units owned by about 750 agencies.

CPAD will be a powerful tool for park and recreation providers for assessing the supply of and demand for outdoor recreation resources. There are many

potential uses for the dataset, such as mapping and analyzing the spatial arrangement of park and recreation resources within California communities. CPAD will also be a valuable tool for the general public. Using the ParkInfo interactive map, any user can access the dataset online to locate the park and open-space recreation lands near them. This easy-to-use search engine is available through a new California State Parks Internet site at www.FindRecreation.parks.ca.gov.

CPAD is the most comprehensive and accurate inventory ever done for the state. The table below indicates the breadth and depth of the data collected.

TOTAL NUMBER OF UNITS INVENTORIED BY COUNTY					
County	# of Units				
		Madera	26	San Mateo	357
Alameda	529	Marin	299	Santa Barbara	382
Alpine	17	Mariposa	15	Santa Clara	486
Amador	10	Mendocino	39	Santa Cruz	247
Butte	102	Merced	90	Shasta	125
Calaveras	5	Modoc	24	Sierra	12
Colusa	27	Mono	46	Siskiyou	39
Contra Costa	347	Monterey	351	San Luis Obispo	168
Del Norte	17	Napa	245	Solano	214
El Dorado	39	Nevada	25	Sonoma	293
Fresno	407	Orange	855	Stanislaus	230
Glenn	17	Placer	186	Sutter	33
Humboldt	37	Plumas	27	Tehama	34
Imperial	185	Riverside	701	Trinity	14
Inyo	17	Sacramento	357	Tulare	132
Kern	207	San Benito	17	Tuolumne	22
Kings	28	San Bernardino	1,023	Ventura	651
Lake	21	San Diego	1,666	Yolo	134
Lassen	21	San Francisco	240	Yuba	135
Los Angeles	2,272	San Joaquin	152	Total	14,397

How was CPAD created?

CPAD was completed by GreenInfo Network with major financial support from California State Parks, but also with prior funding from many other agencies, organizations and private foundations, including:

Annenberg Foundation	Bay Area Open Space Council
California State Coastal Conservancy	Central Coast Open Space Council
Great Valley Center	Resources Legacy Fund Foundation
Sierra Nevada Conservancy	Southern California Open Space Council
University of California, Davis Information Center for the Environment/Great Places Program	

CPAD has been developed using a wide range of data sources, including previous databases (e.g. Public Conservation and Trust Lands), parcel data from counties, ownership data files from agencies and other research. The following processes were used to update CPAD:

- The updating process began with evaluation of a GIS layer developed in the late 1990s by the California Resources Agency, which used GNIS (Geographic Names Information System) and other data to create rough boundaries of urban parks.
- GreenInfo Network surveyed cities statewide and received responses from cities that provided either GIS data or maps that were fairly easily digitized. They researched related agencies, city web sites for the cities that did not respond and secured lists of parks and other collateral information. During this process they found that many cities had no available GIS data on their parks and often only schematic (possibly not to scale, not geo-referenced or just diagrammatic) maps on their websites.
- The data was then sifted through for each city, checking and crosschecking various data sources (road maps and atlases, etc.) to come up with the final layer. Where there was data, park boundaries were matched up with assessor's parcels, and in all cases GreenInfo used high-resolution aerial photography to determine boundary placement.
- Because the protected lands database does not track sites that are solely recreation buildings (and only public recreation lands in any case – not privately owned sites), what is shown as an urban park may not be all the recreational site locations that an individual city may show. There may also be some sites where the exact footprint of the park may not be clear since it could not always be determined if the onsite buildings were part of the park or not.
- There has also been a significant effort to align all protected lands with assessor parcel data. This was accomplished by acquiring GIS parcel data, overlaying it on aerial photographs and comparing it with our existing GIS boundaries. The GIS boundaries were then moved to match assessor parcels, even if an open space or park agency had provided GIS files that

showed a slightly different location. The standard is to use the assessor parcels as the final geometric boundaries (realizing there are still issues with assessor boundaries in a few areas).

What is CPAD and what does it contain?

The California Protected Areas Database is a GIS inventory of all protected open-space lands in the State of California. The database contains lands held in fee ownership by public agencies and non-profits - it does not contain data on private conservation and other similar public-agency easements. The lands in CPAD range from national forests to small urban parks. Federal, state, county, city, special district and non-governmental agency holdings are included and have been mapped at high levels of accuracy.

CPAD has been developed to support conservation and open-space/recreation planning and public access. It is not an inventory of all public lands. For example, city halls, water treatment plants and other government-owned facility lands are not included. At the city level, recreation facilities that do not include significant open-space have not been included (e.g. swimming pools, recreation halls, ball courts, etc., where these are not part of a park with green space).

What CPAD includes:

- Lands that are permanently protected for open-space purposes by public agencies or non-profit organizations.
- Fee lands only – easements are being developed in a separate database.
- Some special use lands, such as publicly owned cemeteries and golf courses.

The inventoried lands typically fall into one or more of these categories:

- Habitat Conservation – Wildlife or plant reserve protected specifically for habitat
- Recreation – Active recreation, picnicking (city parks, parks with developed areas)
- Open-space – Open land serving a broad range of purposes
- Historical/Cultural – Museums, historic sites
- Forestry – Active forest harvesting, tree growth for forestry (publicly owned only)
- Agriculture – Crop lands including developed pastures
- Ranching – Dry and grazing pasture
- Water Supply – Watersheds, waterways
- Scenic Area – If officially designated
- Flood Control – Flood plains, flood control channels

What CPAD does not include:

- Green areas that are parts of schools unless there is a defined agreement to allow those for public use.

- Military lands used primarily for military purposes – a separate data layer of military lands is available at CaSIL (the California Spatial Information Library).
- Conservation scores (United States Geological Survey Gap codes).
- Tribal lands of the Native American sovereign nations.

The data is collected in the series of discrete fields described in the table below:

INCLUDED DATA FIELDS	
Attribute Title	Definition
Holding_ID	Unique ID for each holding unit
Hold_Name	Name of the Holding (a holding is a discrete parcel of land – more than one holding may comprise a park or other such designation). Not all Holdings have names due to funding limitations and agency data.
Unit_ID	ID for each unit. Units are made up on one or more Holdings. For example, a State Park is one unit, but may consist of many holdings, some contiguous and some at a distance from each other.
Unit_Name	Name of the Unit
Agency_ID	Unique ID that identifies the agency that owns or administers the land
Agency_Nam	The name of the agency that owns or administers the land
County	County the protected land is within
Type	Type of ownership – fee, easement, mixed or transfer (transfer is a temporary status used by land trusts and others who are shifting ownership to another agency)
Agency_Typ	Federal, State, County, City, Special District, Non-Profit (mostly land trusts)
Land_Water	Identifies whether or not the land is submerged/tidal
Access	Type of access – Open Access, Restricted Access (i.e., permit required), No Access
Prim_Use	The primary use of the protected land (not available for all Holdings)
GIN_Acres	GIS calculated acreage, may not match official agency records

How will CPAD be used?

Online Search Engine - ParkInfo

CPAD is available through the ParkInfo search engine where users can locate parks and other open-space recreation opportunities anywhere in California. ParkInfo is an interactive Internet-based map that allows any user to easily search for open-space and recreation lands using the Google Maps interface. Users can search for parks by zip code, county, city, or by proximity to their home address. They can also point, click, pan and zoom on the interactive web

map. Some of the map attributes include owning-agency name, public-access status, acreage, and a link to the managing agency's webpage.

Currently, urban parks only include those sites that have a significant percentage of open space compared to structures – recreation facilities that are primarily buildings are generally not included. However, data is currently being collected to include campgrounds, major regional trails, and some urban facilities such as ball courts, recreation centers, and pools.

The ParkInfo search engine is currently available through both the California State Parks webpage at www.FindRecreation.parks.ca.gov and GreenInfo Network's www.parkinfo.org. The ParkInfo portal (as seen below) can be inserted into any webpage using very basic technology. Anyone interested in providing the ParkInfo search engine (below) on a webpage may contact GreenInfo Network.

The screenshot displays the California State Parks ParkInfo search engine interface. At the top, the CA.GOV logo and the text "California State Parks DISCOVER THE MANY STATES OF CALIFORNIA." are visible. Below this, there are navigation tabs for "Recreation Home" and "CA State Parks". A banner image shows a group of cyclists on a dirt path in a green field. The main search area is titled "What are you looking for?" and includes a "What:" dropdown set to "Park", a "Search:" dropdown set to "Near My Address", and a text input field with "1 mi" and a "Go" button. Below the search area, a "Search results:" section is titled "Welcome to ParkInfo" and contains a list of instructions for using the search engine. To the right of the search area is a map of California with various cities and parks marked. The map includes a legend at the bottom with three categories: "Click on any park for details" (represented by a hand icon), "Open Access Parks" (represented by a green square), and "Restricted Access Parks" (represented by a green square with a red border). The map also shows major highways and geographical features like Nevada and Death Valley National Park.

Use of the Database

CPAD is a relational database linking information about land holdings with information about the agencies that own and operate these lands. The dataset is available as both an ESRI file geodatabase and as an ESRI shape file (Environmental Research Systems Institute - designer and developer of GIS technology). This detailed data can be used in a variety of ways, including:

- Assessing the availability of open-space and recreation lands
- Evaluating the nexus between local, state and federal recreation resources by political districts
- Analyzing statistical factors such as the number of park acres per 1,000 residents within a political subdivision
- Identifying the location of state/federal funded outdoor recreation projects (grants) by year, type, and political subdivision.
- Overlaying park and recreation areas on aerial photographs to show facilities, natural features, man-made features, adjacent land uses and other similar characteristics.
- Providing maps and reports depicting the current supply of park and recreation resources. This could be done for the entire state, or by city, county, special district, Assembly/Senate district or region.
- Comparing park locations with demographic data to map and identify underserved neighborhoods and communities.
- Identifying potential linkages or natural connections between resource lands held in public ownership.
- Helping guide the acquisition of new parkland and recreation areas.

The inventory database search engine will be housed by the state's CERES (California Environmental Resources Evaluation System) program at CaSIL (California Spatial Information Library) and is available (for non-commercial use only) by download at http://casil.ucdavis.edu/frs/?group_id=115.

What is next for CPAD?

The database has been designed to accommodate later additional attributes, such as campsites, recreation facilities, and etc. The Planning Division is currently working with GreenInfo Network on these additional efforts:

- A comprehensive inventory of public campgrounds throughout the State
- A collection of spatial data on the 23 major regional trails highlighted in the California Recreational Trails Plan
- A sample inventory of urban recreation facilities, like pools, ball courts, and recreation centers.

It is hoped that this additional information will also become available to the public through the online public search engine.

As with any large data gathering program, there are likely to be lands that have been missed, wrongly included or miss-attributed. These errors are expected to be corrected over time.

GreenInfo Network will continue maintenance of the CPAD to the extent the financial resources are available. Discussions about the best strategy for updating CPAD are in process and any interest other state entities may have for supporting this major effort is welcome. If you are interested in the current status of CPAD, you want more technical information, or you would like to be involved in supporting updates, visit www.calands.org.