FINAL

EXISTING INFORMATION AND DATA GAPS FOR NATURAL RESOURCES IN THE SCAG REGION

Prepared for:

SOUTHERN CALIFORNIA ASSOCIATION of GOVERNMENTS

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ACRONYMS AND ABBREVIATIONS

BLM	Bureau of Land Management
CalFire	California Department of Forestry and Fire Protection
CDFW	California Department of Fish and Wildlife
CHAP	Combined Habitat Assessment Protocols
CNDDB	California Natural Diversity Data Base
FEMA	Federal Emergency Management Agency
GIS	geographic information system
HAB	Habitat and Biodiversity
HCP	Habitat Conservation Plan
IBIS	Integrated Habitat and Biodiversity Information System
MPO	Metropolitan Planning Organization
NCCP	Natural Community Conservation Plan
NHI	Northwest Habitat Institute
RTP/SCS	Regional Transportation Plan/Sustainable Communities Strategy
SBVMWD	San Bernardino Valley Municipal Water District
SCAG	Southern California Association of Governments
USACE	U.S. Army Corps of Engineers
USFS	U.S. Forest Service
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
WHR	wildlife-habitat relationships

INTRODUCTION AND PURPOSE OF DATA COLLECTION

This report provides a summary of the information gathered in support of expanding the Southern California Association of Governments' (SCAG) geographic information system (GIS) database for resources relevant to natural resources planning for open space in the six-county SCAG region. SCAG functions as the Metropolitan Planning Organization (MPO) for six counties in the Southern California region: Imperial, Los Angeles, Orange, Riverside, San Bernardino, and Ventura. The SCAG region encompasses a population of over 18 million people in an area of more than 38,000 square miles. As the MPO, SCAG developed the 2012–2035 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS), adopted by the SCAG Regional Council on April 4, 2012. The 2012–2035 RTP/SCS contains a commitment to develop an open space conservation strategy as a mitigation activity for the RTP/SCS. The Conservation Planning Policy in the 2012–2035 RTP/SCS provides the following suggested steps to develop a Regional Open Space Conservation Strategy:

- Engage in a strategic planning process to determine critical components and implementation steps for identifying and addressing open space resources;
- Identify and map regional priority conservation areas based on the most recent land use data for future consideration and potential inclusion in future plans;
- Engage with various partners, including County Transportation Commissions, and build from existing local efforts to identify priority conservation areas and develop an implementable plan; and
- Develop regional mitigation policies or approaches for the 2016 RTP/SCS.

This report on existing information and data gaps for the SCAG region presents the GIS data inventory that will be used to support the development of the Regional Open Space Conservation Strategy. The purpose of the data gathering described in this report is to:

> Create an inventory of existing natural resources GIS databases relevant to conservation and mitigation planning in the SCAG region. These GIS databases may include information covering the entire SCAG region, individual counties, or portions of counties.

This report describes the methods used to gather GIS databases in the inventory, results of the data collection presented in an annotated list of all GIS databases in the inventory, relevance of key databases for conservation and mitigation planning, and key gaps in the data that should be filled to support more comprehensive planning.

METHODS EMPLOYED FOR DATA SEARCH

SCAG provided Leidos with existing GIS databases gathered through prior efforts as the starting point for the database inventory. To expand on SCAG's existing data set, Leidos sought additional natural resources GIS data relevant to conservation and open space planning in the SCAG region.

Data were considered relevant for the inventory if the data would be useful in supporting the spatial identification and assessment of ecological functions of species habitat and natural biological communities. Examples of such data include GIS data for vegetation, wildlife habitat models, soil surveys, species occurrences, topography, hydrologic features, wetlands, watershed boundaries, fire risk, floodplains, landslide risk, protected lands boundaries, significant ecological areas, agricultural uses, and land management practices.

SCAG and Leidos gathered data from various sources, including federal, state, and local agencies and non-governmental conservation organizations that typically gather and maintain GIS data related to natural resources. Examples of such agencies are the U.S. Fish and Wildlife Services (USFWS), U.S. Forest Service (USFS), U.S. Department of Agriculture, Natural Resources Conservation Service, Bureau of Land Management (BLM), U.S. Geological Survey (USGS), California Department of Fish and Wildlife (CDFW), California Department of Conservation, California Department of Forestry and Fire Protection (CalFire), County of Los Angeles, Santa Monica Mountains Conservancy, and GreenInfo Network. Only publically available, free databases were gathered. Some databases that are searchable through online interfaces were not downloaded (e.g., Calflora) because the existing interface is easy to use and the underlying database is complex and updated regularly. Data were also requested from regional conservation planning efforts either in the planning or implementation phase, particularly Habitat Conservation Plans (HCPs) developed under the federal Endangered Species Act, and Natural Community Conservation Plans (NCCPs) developed under the California Natural Community Conservation Planning Act, which assemble species and habitat databases to support their efforts.

The GIS database inventory table SCAG provided to Leidos was expanded with additional GIS databases and additional information on each database. The following information is provided for each database included in the inventory:

- Name of the database
- Date of the version obtained
- Date data were downloaded
- File name and folder location within the inventory folder
- File type (e.g., shapefile or geodatabase)
- Data source (the name of the agency or organization)
- Source type (e.g., federal, state, county)
- Description (short summary of the type of data in the database)
- Main website (website of the agency/organization that provided the database)
- Link to data download (website from which the data were downloaded)
- Metadata ("yes" or "no," as to whether there are Federal Geographic Data Committee compliant metadata provided with the database)

- Coverage (identifies which counties or portions of a county the database covers in SCAG region)
- Relevancy Rank for assessing habitat and ecosystem conditions and for conservation planning (Rank 1: directly useful, Rank 2: indirectly useful, Rank 3: little or no use. See explanation of each rank, below)
- Relevancy discussion (brief statement of how the database is relevant to the assessment of habitat and ecosystem function and distribution and to conservation and open species planning)
- Comments (additional information regarding the database, including data gaps)

Each database was ranked by relevancy for assessing habitat or ecosystem conditions and functions in a spatial context as follows:

- **Rank 1: Directly Useful.** Can be used to assess habitat or ecosystem conditions or functions in a spatial context. Examples include vegetation maps, wildlife habitat maps, soil surveys, and fire risk maps.
- **Rank 2: Indirectly Useful.** Can be used for land use planning or impact predictions related to habitats and ecosystems. Examples include planning boundaries related to natural resources, land use designations, and management designations.
- **Rank 3: Little or No Use.** Not related to or only tangentially related to identification or assessment of impacts on natural resources. Examples include political boundaries, U.S. Census data, employment data, and earthquake faults.

While gathering new data, Leidos focused on acquiring relevancy Rank 1 data; however, some relevancy Rank 2 data were obtained. The Rank 3 data SCAG provided in the initial materials are also included in the inventory.

RESULTS: ANNOTATED LIST OF GIS DATA RESOURCES

The GIS databases in the inventory of existing natural resources data relevant to conservation and mitigation planning in the SCAG region are listed in Appendix A, along with annotations providing the types of information described in the Methods section above. Appendix A is also provided in MS Excel format as a separate file so the inventory can be queried to group and regroup the databases in various ways.

SUMMARY OF RELEVANT DATA RESOURCES AND DATA GAPS

This section summarizes some of the uses of the GIS databases in the inventory for identifying natural resources and assessing species habitat and for conservation, mitigation, and open space planning. This section also includes a discussion of data gaps in the inventory that would be useful for SCAG to fill.

USE OF THE INVENTORY FOR IDENTIFYING NATURAL RESOURCES AND ASSESSING HABITAT

The databases in the inventory can be used in a variety of ways to describe the amount, location, and function of biological resources in support of conservation and open space planning in the SCAG area. Some databases in the inventory, especially those in relevancy Rank 2, are useful in the assessment of potential impacts of human activities on natural resources, though this was not the focal purpose of data gathering.

Databases that provide information on the distribution of different vegetation types are the primary source of information useful to regional conservation and mitigation planning. Wetlands mapping data provide greater resolution of these special vegetation types that often provide important habitat for sensitive wildlife species and for wildlife in general. Some agricultural crop types provide important habitat for sensitive wildlife species and maps of agricultural crops and cropping patterns are useful in understanding the distribution of habitat across the landscape. The inventory includes the following vegetation, wetlands, and agricultural lands mapping databases from various federal and state agencies: California Gap Vegetation, Vegetation – USFS, Vegetation – CDFW, Vegetation – CalFire (Fire and Resource Assessment Program mapping), Landfire Existing Vegetation Type, Wetlands – USFWS Wetlands Data Layer, Wetlands – Thematic Mapping of Coastal Wetlands, Agricultural Lands, and Cropland Data Layer.

Several of these databases are valuable in identifying the ecological "site potential" for natural communities.[1] Site potential refers to the climax natural community that occurs or could occur at a particular site in the absence of human disturbance. Site potential is determined mainly by moisture, temperature, soil type, and topography (including elevation, slope, and aspect). Databases in the inventory important to determining site potential provide geographic information on soils, topography, geology, vegetation, streams, and floodplains. Identifying site potential is valuable in seeking appropriate locations for restoration of vegetation, natural communities, and specific wildlife species habitat for the conservation or mitigation of these resources. Disturbance regimes also affect site potential; see discussion below.

The California Natural Diversity Data Base (CNDDB) provides specific known locations ("occurrences") of rare wildlife, fish, and plants. These data are important in impact analysis, in mitigation and conservation planning, and in identifying populations and occupied habitat for sensitive species, including species listed under federal and California Endangered Species Acts. While the CNDDB contains a large amount of data on species occurrences, many unknown occurrences may be present on the landscape, especially for less studied species. Occurrence data are often skewed toward locations where many field surveys have been conducted, such as where specific development projects have been proposed, while other locations have not been surveyed. The CNDDB also includes location information on sensitive natural communities, which can be used to augment the vegetation databases described above.

[1] Sometimes referred to as "potential natural vegetation" - The vegetation that would occur on a given site if disturbance by humans was excluded. It is a reflection of the environmental setting, or the biological potential of a land area to generate a specific ecosystem within the constraints of the nonanthropogenic disturbance regime on that site. (http://www.fs.fed.us/database/feis/glossary.html#PAPPUS:)

The distribution of all known plant species in the SCAG region can be determined at a coarse scale using the Calflora and Jepson Herbarium online searchable databases. The Calflora website allows queries of specific California plant species to identify the counties in which they are known to occur and can be used to list all plant species known to occur in a given county.[2] The Jepson Herbarium website allows for queries of plant species and provides the distribution of plant species by California floristic province, as well as point data for individual specimens among the 2,200,000 specimens of the two collections of the University and Jepson Herbaria at the University of California at Berkeley.[3]

Some databases in the inventory are useful in identifying potential habitats for wildlife and plant species. Wildlife-habitat relationship (WHR) models can be used to identify the distributions of many common wildlife species. Vegetation data can be used as a coarse surrogate for wildlife habitat. More complex and refined species habitat models can be developed using combinations of databases and rules, particularly models for rare, threatened, and endangered species that have been developed for regional conservation programs. For example, combining vegetation and soils databases is a quick way to model habitat for many plant species. Wildlife species models may be developed by combining such geographic information as vegetation, elevation data, and rules, such as distance from water bodies. Probabilistic models for species habitat can also be developed by combining known occurrence locations from the CNDDB with GIS databases on various resources in the inventory to identify the statistical probability of different resource combinations to support occurrences (i.e., the species habitat).

Some ecological functions of natural communities and habitats can be assessed using the databases in the inventory. For example, Federal Emergency Management Agency (FEMA) floodplain data provide information regarding the location and frequency of flooding that may support different types of riparian vegetation and associated wildlife. Databases such as Landfire Vegetation Condition Class from the USGS and GeoMAC Fire Perimeter (produced by a consortium of federal and California agencies) provide information regarding fuel loads and locations of recent and historical fires. These databases can be used to assess the potential successional stage of specific vegetation polygons relative to most recent fire events. Successional stages of vegetation provide a predictor of what wildlife species are likely to be present. Where certain species of wildlife are known or predicted to be present from CNDDB, WHR, and habitat models, certain ecological conditions or functions may be assumed, for example, cavity-creating birds such as woodpeckers and burrow-creating mammals such as ground squirrels create not only homes for themselves but also habitat for many other species (e.g., hiding places, nest sites, aestivation sites, and food sources).

"Natural disturbances" affect the type and function of natural communities and species habitat. Natural disturbances are those recurring processes that result in the removal or substantial alteration of vegetation, wildlife, and soil such as fire, landslide, flood, and wind storms. Natural disturbances typically "reset" a given site to an earlier seral stage (non-climax) in natural succession. Human actions such as vegetation clearing and land grading are not natural disturbances, but many natural disturbances do result from human activities (though at unnatural frequencies), such as human-caused fire ignition. A "disturbance regime" is defined as the patterns of seasonality, frequency, size, spatial continuity, intensity, type, and severity of

[2] http://www.calflora.org/
[3] http://ucjeps.berkeley.edu/

removal of vegetation, wildlife, and soil resulting from a specific disturbance process in a particular area or ecosystem. Important types of natural disturbances in the SCAG region include fire, flood, and slope failure. Human activities have substantially changed natural disturbance regimes in the SCAG region. Databases in the inventory that can be used to identify disturbance regimes in the SCAG region include: Wildfire and Hazard Areas, Fsim Burn Probability,[4] USGS's Landslide and Liquefaction, and FEMA's National Flood Hazard Layer.

Summary databases that identify rare natural communities or high concentrations of rare species and natural communities can be used as a quick way to identify the location of important natural resources. Examples of such summary databases include BLM's Areas of Critical Environmental Concern, CNDDB rare natural communities, and Los Angeles County's Significant Ecological Areas. Ecological corridors important to the movement, migration, and gene flow of species are identified in the Habitat Essential Connectivity Project and also can be used as a summary database for collective conservation of a broad range of wildlife species.

USE OF THE INVENTORY FOR CONSERVATION, MITIGATION, AND OPEN SPACE PLANNING

Databases in the inventory can be used to support planning for the conservation and mitigation of impacts on natural resources. Databases in the inventory that can be used to identify the location of natural resources are discussed in the previous section and are mainly Relevancy Rank 1. These natural resources databases can be used to identify the best locations to protect or restore natural communities, species habitat, and ecological corridors in the most effective ways. Other databases in the inventory can be used to identify where human activities might adversely affect natural resources. These databases are mostly Relevancy Rank 2 databases that identify where particular human activities are likely to occur and protected areas where activities cannot occur.

Some of the databases in the inventory that identify the locations of different types of human activities are BLM – Federal Off Highway Vehicle Areas, BLM – Geothermal Leases, BLM – grzpca California Range Allotments, BLM – Herd Management Areas, BLM – Land Use Planning Area Boundaries, BLM – Taylor Grazing Act Districts, Human Footprint, and Federal Aviation Administration Wind Turbine Locations. The Human Footprint database is useful in determining ecological and habitat functions for areas in which human influence is direct (i.e., occurs within the habitat and degrades its function for wildlife use) or indirect (e.g., is adjacent to habitat and degrades function through influences such as noise, lighting, and runoff). Much more GIS information on the potential location of future planned development is available from the six counties and over 100 cities in the SCAG area through their general plan and specific plan land use planning processes and regional planning processes such as SCAG's RTP/SCS. Gathering such development planning data was not the purpose of this inventory, but the natural resources data in the inventory can be used to support development planning at city, county, and regional scales in the development of mitigation and conservation components for such plans. Conversely, development planning data can be used to help prioritize conservation and mitigation land acquisition.

Using GIS to identify the intersection of the locations of human activities with the location of natural resources is a first step in assessing the impacts of such activities on natural resources.

[4] Fsim = Large-Fire Simulator

The type and intensity of the impact is determined based on the specific activity and resource that intersect. GIS models can be developed to assess the indirect effects of human activities in areas adjacent to human development and, again, the type and intensity of the impact is determined by developing and applying models based on the specific activity and resource.

Databases in the inventory that identify the locations of existing protected areas are useful in the development of conservation plans for natural resources. New conservation areas can be located to build off of existing conservation areas. Protection of ecological corridors can be located to take advantage of existing protected lands. Databases in the inventory that identify existing protected lands include BLM – Areas of Critical Environmental Concern, California Protected Areas Database, Protected Areas Database, and Santa Monica Mountains Conservancy. More data on the location of protected lands can be derived from other conservancies and land trusts that own land and conservation easements in the SCAG region and county records on parcels with permanent conservation easements attached to them.

The natural resources database inventory can be used to support open space planning in conjunction with natural resources conservation planning. Open space planning typically addresses more parts of the landscape than natural resources planning, for example, developed public parks, agricultural lands (including those crop types with no wildlife habitat function), and golf courses are all usually considered as open space but would not be considered as part of a system of natural resources conservation lands. Open space plans can take advantage of natural resources conservation plans to achieve both open space and natural resource conservation goals in the most efficient way.

DATA GAPS

The inventory contains a wide range of data types relevant to natural resources conservation planning, however, there are other databases that could be made available or created that would provide additional information useful to regional conservation and mitigation planning. Most of the databases in the inventory are not useful at the scale of individual development project planning because projects cover relatively small areas and typically require site-specific natural resources information at a greater resolution than is provided in the regional databases in the inventory.

Some of the databases in the inventory provide only partial coverage of the SCAG region and some are of such coarse resolution that they may not be suitable even for regional planning purposes. Such data gaps specific to each database in the inventory are described in the six inventory table columns for coverage by county and in the column titled “Comments” (Appendix A).

A number of regional HCPs and NCCPs are being implemented or are in development in the SCAG region that include valuable natural resources information. HCPs and NCCPs typically develop more uniform and sometimes higher-resolution vegetation GIS data, use regional databases (similar to the databases gathered for this inventory) to develop and apply habitat models for endangered and threatened species and other species addressed by the plan, identify species occurrences derived from other sources than the CNDDB, and identify areas of important

habitat proposed for future protection. In December 2013, specific data requests were made by SCAG to the directors of the following regional HCPs and NCCPs in the SCAG region.

- Central/Coastal Orange County (Nature Reserve of Orange County)
- Coachella Valley Multi-Species HCP
- Western Riverside Multi-Species HCP (Regional Conservation Authority – Western Riverside County)
- Desert Renewable Energy Conservation Plan
- Imperial Irrigation District HCP/NCCP
- Orange County Transportation Authority
- Palos Verde Peninsula NCCP (Palos Verdes Peninsula Land Conservancy)
- Town of Apple Valley Multi-Species Conservation Plan
- Lower Colorado River Multi-Species Conservation Program

The request by SCAG identified the need for GIS databases developed for each HCP and NCCP for:

- Vegetation/land cover GIS data;
- Species habitat model output GIS data;
- Species occurrence data, if different than CNDDB data; and
- Specified lands already protected by or targeted for habitat preserves.

As of April 2014, the various HCPs and NCCPs have not yet responded to this data request. It is recommended that SCAG continue to pursue these databases as they will provide some of the most useful natural resources data for impact analysis, mitigation planning, and conservation planning in the SCAG region.

Most databases in the inventory are not of sufficient resolution for impact analysis and mitigation planning at the scale of individual development projects. Development projects require site-specific information to assess impacts and identify mitigation sites. The regional databases are, however, valuable for estimating impacts on natural resources of many development projects over a large area or linear projects such as transportation improvements and in identifying the geographic locations and narrowing the number of suitable sites for mitigation. A large amount of site-specific natural resources GIS data collected for development projects that have not been constructed or for purposes other than proposed development projects exists for the SCAG region. Such data can be found in environmental impact reports, environmental impact statements, vegetation surveys, jurisdictional wetland delineations, and sensitive species surveys. While such data are too site-specific to be of value for the SCAG natural resources inventory, when specific development projects or studies of specific areas within the SCAG region are proposed, it is worthwhile to search for such higher-resolution existing data for the geographic area of interest.

DATA GATHERING FOR THE CHAP PILOT STUDY

As part of Leidos' effort for SCAG, a pilot study for a specific site will be conducted by Northwest Habitat Institute (NHI) using NHI's Combined Habitat Assessment Protocols (CHAP).[5] The site selected for the CHAP Pilot Study is the U.S. Army Corps of Engineers' (USACE) Prado Flood Control Basin and associated reaches of the Santa Ana River. The study area includes portions of Riverside, Orange, and San Bernardino counties and is near the junctions of three major freeways (State Routes 91 and 71 and Interstate 15). Natural resources data from the inventory that overlaps with the Prado Flood Control Basin and the watershed that feeds it will be of value in conducting the CHAP Pilot Study. Higher-resolution data for the study area should also be obtained. There is a good amount of biological resources data for vegetation and key sensitive species that has been gathered by USACE and local agencies in the study area. A consortium of water districts and utilities, led by the San Bernardino Valley Municipal Water District (SBVMWD), is initiating the development of a HCP for the Upper Santa Ana River watershed, including the Prado Flood Control Basin. It is recommended that SCAG coordinate with SBVMWD to share existing data relevant to the CHAP Pilot Study and the HCP.

[5] CHAP is an accounting and appraisal tool that is a simple, yet scientifically advanced methodology used to measure habitat quality by evaluating biodiversity within a habitat type and/or structural condition. The outcome of a CHAP evaluation is a Habitat and Biodiversity (HAB) metric that gives a per-acre value for each homogeneous polygon delineated. CHAP accounts for species-habitats-functions at a site that is also joined to a peer-review Integrated Habitat and Biodiversity Information System (IBIS) to create appraised "values" between site(s) and different management activities.

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APPENDIX A
INVENTORY OF NATURAL RESOURCES GIS DATABASES FOR THE SCAG REGION

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Final Existing Information and Data Gaps for Natural Resources in the SCAG Region

Name of Database	Version	Date of download	File Name & Folder	File Type	Data Source	Type	Description	Main Website	Link to Data Download	Metadata	Coverage of Imperial County	Coverage of Los Angeles County	Coverage of Orange County	Coverage of Riverside County	Coverage of San Bernardino County	Coverage of Ventura County	Relevancy Rank	Relevancy Description	Comments
Agricultural Lands	2010	September 2012	Folder: Ag_Lands	shapefile	Farmland Mapping and Monitoring Program - California Department of Conservation	State	The Farmland Mapping and Monitoring Program (FMMP) produces maps and statistical data used for analyzing impacts on California's agricultural resources. Agricultural land is rated according to soil quality and irrigation status; the best quality land is called Prime Farmland.	http://www.conservation.ca.gov/dlrp/fmmp/Pages/index.aspx	ftp://ftp.consrv.ca.gov/pub/dlrp/FMMP/	Yes	Yes	Yes	Yes	Yes	Yes	Yes	2	Agricultural lands, particularly certain crop types, provide habitat for a range of wildlife species including some threatened and endangered species. Agricultural lands are often included in habitat models for wildlife species. Agricultural	
CDFW - Areas of Conservation Emphasis (ACE 2)	On-line database	On-line database, not uploaded	On-line database	On-line database	California Department of Fish and Wildlife	State	Areas of Conservation Emphasis (ACE-II) is a Department of Fish and Wildlife (CDFW) project that was begun in 2009 to provide data to help guide and inform conservation priorities in California. The purpose of ACE-II was to compile and analyze the best available statewide, spatial information on California's biological richness, including species diversity, rarity, and sensitive habitats, collect information on recreational needs and opportunities throughout the state, including fishing, hunting and wildlife-viewing, develop a set of tools and produce maps that summarize and display this information for use in conservation decision-making, and integrate these data into a spatial model that can be used to identify areas of biological or conservation interest throughout the state. ACE-II provides an easily-accessible and standardized way to view the best available statewide data on California's biological richness and biodiversity. These datasets have many uses ranging from ecological research and modeling to local land-use planning and conservation decision making. The ACE-II data are dynamic and will be updated periodically as new data warrant. **SCAG Staff Note:** The data you will have to request from the BIOS Coordinator. I have cc'd Sandra Summers here. Sandra – This is an appropriate use of the data = regional transportation planning.	http://www.dfg.ca.gov/biogeodata/ace/	**SCAG Staff Note:** Call or Email to request data. Sandra.Summers@wildlife.ca.gov	On-line database, see website	Yes	Yes	Yes	Yes	Yes	Yes	1	ACE-II provides a standardized way to view statewide data on California's biological richness and biodiversity. These datasets have many uses ranging from ecological research and modeling to local land-use planning and conservation decision making. The ACE-II data are dynamic and are updated periodically by DFW as new data warrant.	On-line database, not downloaded for SCAG inventory. The majority of these data are online and would need to be requested from CDFW. These data appear to be generalized to a 3km hexagon. May be too coarse for use in some regional planning.
BLM - Administrative Unit Boundaries	07/01/2011	January 2013	BlmOffices.gdp.zip Folder: BLM	geodatabase	BLM Geospatial Downloads	Federal	BLM - Administrative Unit Boundaries	http://www.geocommunicator.gov/GeoComm/index.htm	http://www.blm.gov/ca/gis/	Partial	Yes	Yes	Yes	Yes	Yes	Yes	3	These boundaries may be of some use in resource planning.	
BLM - Areas of Critical Environmental Concern	11/14/2012	January 2013	Acec_v10.gdb.zip Folder: BLM	geodatabase	BLM Geospatial Downloads	Federal	BLM - Areas of Critical Environmental Concern (ACEC). Where BLM determines that certain public land areas require special management to prevent irreparable damage to important historic, cultural, or scenic values, fish and wildlife resources, or other natural systems, it may designate such lands as ACECs.	http://www.blm.gov/ca/gis/	http://www.blm.gov/ca/gis/	Partial	Yes	Yes	Yes	Yes	Yes	Yes	1	The locations of ACECs provide an indication of where there may be sensitive biological resources or concentrations of resources and politically where BLM has prioritized conservation efforts.	Covers BLM land only. Imperial and San Bernardino counties have large tracts of BLM land while Orange and Ventura County have the least amount of BLM land.
BLM - Federal Off Highway Vehicle Areas, CA	12/02/2008	January 2013	chvpca.e00.zip Folder: BLM	Arc/Info	BLM Geospatial Downloads	Federal	BLM - Federal Off Highway Vehicle Areas, CA	http://www.blm.gov/ca/gis/	http://www.blm.gov/ca/gis/	Yes	Yes	Yes	Yes	Yes	Yes	Yes	2	OHV use areas provide an indication of where impacts on biological resoureces are likely to occur.	Covers BLM land only.
BLM - Geothermal Leases	01/15/2013	January 2013	GeothermalLeases_v10.gdb.zip	geodatabase	BLM Geospatial Downloads	Federal	BLM - Geothermal Leases	http://www.blm.gov/ca/gis/	ftp://ftp.blm.gov/pub/CA/gis/	Yes	Yes	Yes	Yes	Yes	Yes	Yes	2	Geothermal lease use areas provide an indication of where impacts on biological resoureces are likely	Covers BLM land only.
BLM - grzpca California Range Allotment	12/06/2012	January 2013	GrazingAllotments_v10.gdb.zip Folder: BLM	geodatabase	BLM Geospatial Downloads	Federal	BLM - grzpca California Range Allotment	http://www.blm.gov/ca/gis/	http://www.blm.gov/ca/gis/	Yes	Yes	Yes	Yes	Yes	Yes	Yes	2	Grazing allotments provide information on land management and provide an indication of where impacts on biological resoureces are likely to occur.	Covers BLM land only.
BLM - Herd Management Area	09/08/2006	January 2013	hmapca.e00.zip Folder: BLM	Arc/Info	BLM Geospatial Downloads	Federal	BLM - Herd Management Area (HMA). Herd Areas (HAs) are those geographic areas where wild horses and/or burros were found at the passage of the Wild Horse and Burros Act in 1971. Herd Management Areas (HMAs) are those areas within Herd Areas where the decision has been made to manage for populations of wild horses and/or burros. There are 33 Herd Areas and 22 Herd Management Areas within California.	http://www.blm.gov/ca/gis/	http://www.blm.gov/ca/gis/	Yes	Yes	Yes	Yes	Yes	Yes	Yes	2	HMAs provide information on land management for wild horses and burros and provide an indication of where impacts on biological resoureces are likely to occur.	Covers BLM land only.
BLM - Historical Herd Area for Wild Horse and Burro	09/08/2006	January 2013	haopca.e00.zip Folder: BLM	Arc/Info	BLM Geospatial Downloads	Federal	BLM - Historical Herd Area for Wild Horse and Burro	http://www.blm.gov/ca/gis/	http://www.blm.gov/ca/gis/	Yes	Yes	Yes	Yes	Yes	Yes	Yes	2	Historic Herd Areas provide information on land management for wild horses and burros and	Covers BLM land only.
BLM - Land Use Planning Area Boundaries	05/30/2012	January 2013	LndUsePlans_v10.gdb.zip Folder: BLM	geodatabase	BLM Geospatial Downloads	Federal	BLM - Land Use Planning Area Boundaries	http://www.blm.gov/ca/gis/	http://www.blm.gov/ca/gis/	Yes	Yes	Yes	Yes	Yes	Yes	Yes	2	These boundaries are of use in biological resource planning.	Covers BLM land only.
BLM - NLCS Wilderness	11/08/2011	January 2013	nlcsWilderness.gdb.zip Folder: BLM	geodatabase	BLM Geospatial Downloads	Federal	BLM - NLCS Wilderness	http://www.blm.gov/ca/gis/	ftp://ftp.blm.gov/pub/CA/gis/	Yes	Yes	Yes	Yes	Yes	Yes	Yes	2	BLM designated wilderness areas are of use in biological resource planning.	Covers BLM land only.
BLM - Renewable Energy ROW	01/15/2013	January 2013	RenewEnergyROW_v10.gdb.zip	geodatabase	BLM Geospatial Downloads	Federal	BLM - Renewable Energy ROW	http://www.blm.gov/ca/gis/	ftp://ftp.blm.gov/pub/CA/gis/	Yes	Yes	Yes	Yes	Yes	Yes	Yes	2	Renewable energy ROWs provide an indication of where impacts on biological resoureces are likely to	Covers BLM land only.
BLM - Taylor Grazing Act Districts	10/03/2011	January 2013	tgaGrazingDistricts.gdb.zip Folder: BLM	geodatabase	BLM Geospatial Downloads	Federal	BLM - Taylor Grazing Act Districts. The Taylor Grazing Act of 1934 was intended to "stop injury to the public grazing lands by preventing overgrazing and soil deterioration; to provide for their orderly use, improvement, and development; [and] to stabilize the livestock industry dependent upon the public range." This Act was pre-empted by the Federal Land Policy and Management Act of 1976 (FLPMA).	http://www.blm.gov/ca/gis/	http://www.blm.gov/ca/gis/	Yes	Yes	Yes	Yes	Yes	Yes	Yes	2	Taylor Grazing Act districts provide an indication of where impacts on biological resoureces are likely to occur.	Covers BLM land only.
BLM - Veg Treatments	11/19/2013	January 2013	VegTreatments_v10.gdb.zip	geodatabase	BLM Geospatial Downloads	Federal	The BLM vegetation treatments data contained locations where prescribed burns took place as well as physical vegetation thinning locations.	http://www.blm.gov/ca/gis/	http://www.blm.gov/ca/gis/	Partial	Yes	Yes	Yes	Yes	Yes	Yes	2	The locations of vegetation treatments provide an indication of where impacts on biological	Covers BLM land only.
BLM West Mojave Plan	February 2011	February 2011	BLM_Data\WEMO*	geodatabase	BLM Geospatial Downloads	Federal	West Mojave Plan datasets including air quality, study boundary, grazing, plant, bird, mammal sitings, conservation areas, etc	http://www.blm.gov/ca/st/en/fo/cdd/west_mojave__wemo.html		Partial	No	Yes	No	Yes	Yes	No	3	Species data provided in the West Mojave Plan is useful for habitat assessment.	
California Natural Diversity Database (CNDDB)	Updated every month	December 2012	Folder: CNDDB	shapefile	California Department of Fish and Wildlife	State	Inventories the status and locations of rare plants and animals in California . CNDDB staff work with partners to maintain current lists of rare species as well as maintain an ever-growing database of GIS-mapped locations for these species.	http://www.dfg.ca.gov/biogeodata/cndb/	**YEARLY SUBSCRIPTION.** Kimberly Clark - primary point of contact - Chris Tzmar -	Yes	Yes	Yes	Yes	Yes	Yes	Yes	1	The CNDDB provides information on the specific location and size of occurrences of sensitive wildlife, fish, and plant species and rare natural	
California Protected Areas Database (CPAD)	V2013b	November 2013	CPAD_2013b	geodatabase	GreenInfo Network	State	Protected open space lands through fee ownerships (does not include all public lands, easements, or most private owners). This dataset is updated regularly - at least once a year. Please check the CPAD website for latest version	http://www.calands.org/	http://www.calands.org/data	Yes	Yes	Yes	Yes	Yes	Yes	Yes	2	Existing protected lands boundaries are of use in biological resource planning.	
Desert Renewable Energy Conservation Plan	January 28, 2011	October 2012	Folder: cons_DRECP	shapefile	Desert Renewable Energy Conservation Plan - implemented by multi agency (federal and state) team called Renewable Energy Action Team (REAT)	Regional	NCCP/HCP/ Land Use Plan Amendment. - California Executive Order S-14-08 requires the development of the Desert Renewable Energy Conservation Plan (DRECP) for the Mojave and Colorado deserts in order to provide binding, long-term endangered species permit assurances and to facilitate the review and approval of compatible renewable energy projects.	http://www.drecp.org/whatisdrecp/faq.html	http://www.drecp.org/maps/	Partial	Yes	Yes	No	Yes	Yes	No	2	DRECP area boundaries are of use in biological resource planning.	Planning area covers most of Imperial and San Bernardino Counties, eastern Riverside and north eastern LA County
Earthquake / Fault	N/A	September 2012	Folder: Earthquake Hayward Fault Map and USGS 1-24000 base maps	.lyr	USGS	Federal	includes ArcGIS files for the Hayward fault map and 1:24,000 USGS base maps	http://earthquake.usgs.gov/earthquakes/?source=sitenav	http://pubs.usgs.gov/ds/2006/177/ds177_data.zip								3	Little or no use in biological resources assessments or planning.	Hayward Fault maps not in SCAG domain.
Habitat Essential Connectivity Project	February 2013	February 2013	Folder Habitat Connectivity Data CDFW	geodatabase	California Department of Fish and Wildlife	State	The California Department of Fish and Wildlife and the California Department of Transportation (CalTrans) commissioned a team of consultants to produce a statewide assessment of essential habitat connectivity by February of 2010, using the best available science, data sets, spatial analyses and modeling techniques. The goal was to identify large remaining blocks of intact habitat or natural landscape and model linkages between them that need to be maintained, particularly as corridors for wildlife.	http://www.dfg.ca.gov/habcon/connectivity/	http://bios.dfg.ca.gov/	Yes	Yes	Yes	Yes	Yes	Yes	Yes	1	Provides locations of most important wildlife and ecological corridors.	State wide dataset
HCP/NCCP Boundaries	February 2013	February 2013	Folder: HCP_NCCP Boundaries	shapefile	California Department of Fish and Wildlife	State	List of HCP and NCCP boundaries ONLY. Does not include details on conservation areas located within the boundaries	http://www.dfg.ca.gov/habcon/conplan/	***Call or Email to request data.*** Contact: Monica Parisi, (916) 653-9767	Yes	Yes	Partial	Yes	Yes	Yes	No	2	HCP and NCCP area boundaries are of use in biological resource planning.	Some small sections of counties weren't included but overall coverage was given a yes.
Land Ownership	2009	September 2012	Folder: Land_Ownership	Access database file	Cal-Atlas Geospatial Clearinghouse	State	A 1:100,000 polygon features class representing public, conservation and trust land ownership in the state of California. Developed for the California Resources Agency's Legacy Project, this dataset depicts ownership features as submitted by major public, trust, and non-profit groups in the state.	http://atlas.ca.gov/catalog/CaSpatialInformationLibrary/PublicConservationTrustLand.html	http://projects.atlas.ca.gov/frs/?group_id=16&release_id=245	Yes	Yes	Yes	Yes	Yes	Yes	Yes	2	Land ownership boundaries are of use in biological resource planning.	State wide dataset
Landfill locations	updated on weekly basis	October 2012	Folder: Landfill	text (converted into shapefile)	CalRecycle	State	Data shows location of landfill ONLY, does NOT show location. Includes basic information on each facility in the database including site, enforcement agency, operator, activity type, regulatory status, operational status and latitude/longitude coordinates	www.calrecycle.ca.gov/	http://www.calrecycle.ca.gov/SWFacilities/Directory/Search.aspx	no	Yes	Yes	Yes	Yes	Yes	Yes	3	Little or no use in biological resources assessments or planning. Landfills may provide an indication of where impacts on biological resoureces are likely to occur	Only CSV works
Landslide and Liquefaction - USGS 2003	2003	September 2012	Folder: Landslide and Liquefaction \Soil-Slip Susceptibility	Arc/Info Grid	US Geological Survey	Federal	This group of maps shows relative susceptibility of hill slopes to the initiation sites of rainfall-triggered soil slip-debris flows in southwestern California. As such, the maps offer a partial answer to one part of the three parts necessary to predict the soil-slip/debris-flow process. A complete prediction of the process would include assessments of "where", "when", and "how big". These maps empirically show part of the "where" of prediction (i.e., relative susceptibility to sites of initiation of the soil slips) but do not attempt to show the extent of run out of the resultant debris flows. Some information pertinent to "when" the process might begin is developed. "When" is determined mostly by dynamic factors such as rainfall rate and duration, for which local variations are not amenable to long-term prediction. "When" information is not provided on the maps but is described later in this narrative. The prediction of "how big" is addressed indirectly by restricting the maps to a single type of landslide process—soil slip-debris flows.	http://www.usgs.gov/ http://geopubs.wr.usgs.gov/open-file/of03-17/	Los Angeles - http://geopubs.wr.usgs.gov/open-file/of03-17/la_sus.tar.gz San Bernardino - http://geopubs.wr.usgs.gov/open-file/of03-17/sbern_sus.tar.gz Long Beach - http://geopubs.wr.usgs.gov/open-file/of03-17/lb_sus.tar.gz	Yes	No	Partial	Partial	Partial	Partial	Partial	2	Landslide and liquefaction locations provide an indication of where impacts on biological resources are likely to occur. Landslide risk maps provide some indication of natural distrubance regime for biological resources.	
Landslide and Liquefaction - USGS 1997	1997	September 2012	Folder: Landslide and Liquefaction \ Landslide Overview Map of Conterminous US	.e00	US Geological Survey	Federal	Digital Compilation of Landslide Overview Map of the Conterminous United States. This dataset consists of polygons enclosing areas of landslide incidence and susceptibility for the conterminous United States.	www.usgs.gov	http://ngmdb.usgs.gov/Prodesc/proddesc_18904.htm	No	Yes	Yes	Yes	Yes	Yes	Yes	2	Landslide and liquefaction locations provide an indication of where impacts on biological resources are likely to occur. Landslide risk maps provide	Linked Lookup tables for ArcInfo coverages.

Final Existing Information and Data Gaps for Natural Resources in the SCAG Region

Name of Database	Version	Date of download	File Name & Folder	File Type	Data Source	Type	Description	Main Website	Link to Data Download	Metadata	Coverage of Imperial County	Coverage of Los Angeles County	Coverage of Orange County	Coverage of Riverside County	Coverage of San Bernardino County	Coverage of Ventura County	Relevancy Rank	Relevancy Description	Comments
Landslide and Liquefaction - USGS 2007	2007	September 2012	Folder: Landslide and Liquefaction \ Compilation of Vector Cliff Edges and Associated Cliff Erosion Data for the California Coast	shapefile and dbf	US Geological Survey	Federal	This data compilation for open-ocean cliff edges for the California coast is a separate, yet related study to Hapke and others, 2006 documenting shoreline change along sandy shorelines of the California coast, which is itself one in a series that includes the Gulf of Mexico and the Southeast Atlantic coast (Morton and others, 2004; Morton and Miller, 2005). Future reports and data compilations will include coverage of the Northeast U.S., the Great Lakes, Hawaii and Alaska. Cliff edge change is determined by comparing the positions of one historical cliff edge digitized from maps with a modern cliff edge derived from topographic LIDAR (light detection and ranging) surveys. Historical cliff edges for the California coast represent the 1920s-1930s time-period; the most recent cliff edge was delineated using data collected between 1998 and 2002. End-point rate calculations were used to evaluate rates of erosion between the two cliff edges. Please refer to our full report on cliff edge erosion along the California coastline at http://pubs.usgs.gov/of/2007/1133/ for additional information regarding methods and results (Hapke and others, 2007). Data in this report are organized into downloadable layers by region (Northern, Central and Southern California) and are provided as vector datasets with accompanying metadata. Vector cliff edges may represent a compilation of data from one or more sources and the sources used are included in the dataset metadata. This project employs the Environmental Systems Research Institute's (ESRI) ArcGIS as it's Geographic Information System (GIS) mapping tool and contains several data layers (shapefiles) that are used to create a geographic view of the California coast. The vector data form a basemap comprising polygon and line themes that include a U.S. coastline (1:80,000), U.S. cities, and state boundaries.	http://ngmdb.usgs.gov/Prodesc/proddesc_81259.htm	http://pubs.usgs.gov/of/2007/1112/Data/SCal.zip	Yes	No	Yes	Yes	No	No	Yes	2	Landslide and liquefaction locations provide an indication of where impacts on biological resources are likely to occur. Landslide risk maps provide some indication of natural distrubance regime for biological resources.	Only covers coastal section of LA, VT, OC
Landslide and Liquefaction - CDC 2002	2002	September 2012	Folder: Landslide and Liquefaction \ Los Angeles Landslide and Liquefaction	shapfile and dbf	California Department of Conservation	State	City by city data only. This is a digital Seismic Hazard Zone Map presenting areas where liquefaction and landslides may occur during a strong earthquake. Three types of geological hazards, referred to as seismic hazard zones, may be featured on the map: 1) liquefaction, 2) earthquake-induced landslides, and 3) overlapping liquefaction and earthquake-induced landslides. Developers of properties falling within any of the three zones may be required to investigate the potential hazard and mitigate its threat during the local permitting process	http://www.conservation.ca.gov/cgs/shzp/Pages/Index.aspx	http://gmw.consrv.ca.gov/shmp/TrackDownloads.asp?FileName=la_hzm.zip&FileLoc=download/mapinfo/la_hzm.zip&QuadName=Los Angeles&USID=US0000012044	No	No	Partial	No	No	No	No	2	Landslide and liquefaction locations provide an indication of where impacts on biological resources are likely to occur. Landslide risk maps provide some indication of natural distrubance regime for biological resources.	Parts of LA county only
Los Angeles County - Significant Ecological Areas (SEAs) - Existing and proposed SEAs	December 2012	December 2012	Folder: County-LA	shapefile	Los Angeles County	County	The SEA Program is a component of the Los Angeles County General Plan Conservation/Open Space Element. SEAs are areas identified as ecologically important habitat integral to the preservation of rare, threatened or endangered species and the conservation of biological diversity in the County. SEAs are not preserves. Development activities in the SEAs are reviewed by a scientific advisory committee and require a conditional use permit.	http://planning.lacounty.gov/sea		Yes	No	Yes	No	No	No	No	1	The locations of SEAs in Los Angeles County provide an indication of where there are sensitive biological resources or concentrations of resources and politically where Los Angeles County has prioritized conservation efforts.	LA County only
National Conservation Easement (NCED)	September 2013	January 2014	Folder: NCED NCED_Pacific_09_03_13_gdb	geodatabase	The Conservation Registry	Federal	The National Conservation Easement Database (NCED) is the first national database of conservation easement information, compiling records from land trusts and public agencies throughout the United States. Voluntary and secure, the NCED respects landowner privacy and will not collect landowner names or sensitive information. This public-private partnership brings together national conservation groups, local and regional land trusts, and state and federal agencies around a common objective. The NCED provides a comprehensive picture of the estimated 40 million acres of conservation easement lands, recognizing their contribution to America's natural heritage, a vibrant economy, and healthy communities.	http://www.conservationeasement.us/ or http://nced.conservationregistry.org/	http://nced.conservationregistry.org/easements/download_links	Yes	No	Yes	Yes	Yes	Yes	Yes	2	Existing protected lands boundaries are of use in biological resource planning.	State wide coverage. None visible in Imperial Cty.
Pacific Crest National Scenic Trail	07-17-2012	July 2012	Folder: cons_PacificCrestTrail /stelprdb5332131-pacificcresttrail	shapefile	USDA Forest Service	Federal	2,650 mile scenic trail from California to Canadian border.	http://www.fs.usda.gov/pct/	http://www.fs.usda.gov/main/pct/maps-publications	Yes	No	Yes	No	Yes	Yes	No	3	Little use. Trail use areas may be of value in predicting impacts on biological resources.	
Protected Areas Database - US by land conservation coop	v1.2	July 2012	Folder:PAD /PADUS_LCC_11	shapefile	USGS Gap Analysis Program	Federal	same as Protected Areas Database - USv10	http://gapanalysis.usgs.gov/	http://gapanalysis.usgs.gov/data/other-data/	Yes	Yes	Yes	Yes	Yes	Yes	Yes	2	Existing protected lands boundaries are of use in biological resource planning.	State wide coverage
Protected Areas Database - US v10	v1.2	July 2012	Folder:PAD /PADUS_1_1 (ArcGIS 10)	geodatabase	USGS Gap Analysis Program	Federal	geodatabase that illustrates and describes public land ownership, management and conservation lands nationally, including voluntarily provided privately protected areas. The lands included in PAD-US are assigned conservation measures that qualify their intent to manage lands for the preservation of biological diversity and to other natural, recreational and cultural uses; managed for these purposes through legal or other effective means.	http://gapanalysis.usgs.gov/	http://gapanalysis.usgs.gov/data/other-data/	Yes	Yes	Yes	Yes	Yes	Yes	Yes	2	Existing protected lands boundaries are of use in biological resource planning.	State wide coverage
Protected Areas Database - US v9.3	v.12	July 2012	Folder:PAD /PADUS1_2 (GeodatabaseArcGIS 9_3)	geodatabase	USGS Gap Analysis Program	Federal	same as Protected Areas Database - USv10	http://gapanalysis.usgs.gov/	http://gapanalysis.usgs.gov/data/other-data/	Yes	Yes	Yes	Yes	Yes	Yes	Yes	2	Existing protected lands boundaries are of use in biological resource planning.	State wide coverage
Riverside County - Conserved Lands	March 2013	March 2013	Folder: County-Riverside	shapefile	Riverside County	County	List of conserved areas in Western Riverside County	http://www.rctlma.org/	***Call or Email to request data.*** Contact: Philip Kane, Senior	Partial	No	No	No	Partial	No	No	2	Existing protected lands boundaries are of use in biological resource planning.	West Riverside Cty only
Santa Monica Mountains Conservancy	March 7, 2013	March 2013	Folder: cons_SMMC	shapefile	Santa Monica Mountains Conservancy	Regional	List of lands in Conservancy.	http://smmc.ca.gov/	***Call or Email to request data.*** Contact: Mark Shores, GIS	No	No	Yes	No	No	No	Yes	2	Existing protected lands boundaries are of use in biological resource planning.	Shows SMMC conservancy lands within LA and VT counties
Coastal Spill Risk Sites (OSPR)	2010, version 2	September 2012	Folder: Habitat Sensitive Species FWS Critical Habitat for Threatened & Endangered Species - Sensitive Sites	shapefile	US Fish & Wildlife Service and CDFW Office of Spill Prevention (OSPR)	Federal	Office of Spill Prevention (OSPR) of CDFW identified sites at risk of spills along the coast and links other datasets for sensitive biological resources including species occurrences, natual communities, and ESA Designated Critical Habitat for Threatened & Endangered Species at potential spill sites along the coast. The mission of OSPR is to provide best achievable protection of California's natural resources by preventing, preparing for, and responding to spills of oil and other deleterious materials, and through restoring and enhancing affected resources.	http://www.fws.gov/	ftp://ftp.dfg.ca.gov/BDB/GIS/BIOS/Public_Datasets/300_399/ ftp://ftp.dfg.ca.gov/BDB/GIS/BIOS/Public_Datasets/Available_BIOS_Layers_FTP.pdf	No	No	Partial	Partial	No	No	Partial	2	Sites of potential oil spills and other chemical spills provide information on potential future impacts on natural resources.	Sensitive sites mostly along the coast for relationship to possible spill sites. Limited FWS datasets (mostly point locations) for observed species or sensitive resources. Critical habitat is included but provides a link to the USFWS Critical Habitat Mapping website as the source rather than an ftp site.
Sensitive Species Habitat - Spill Sensitive	2010	September 2012	Folder: Habitat Sensitive Species Southern California Environmental Sensitivity Index 2010	shapefile	NOAA	Federal	This data set contains data for Area Contingency Plan (ACP) sensitive sites in Southern California. Vector points in this data set represent sites identified as sensitive for biological and/or human-use resources that should be prioritized for protection during spill response activities. This data set comprises a portion of the ESI data for Southern California. ESI data characterize the marine and coastal environments and wildlife by their sensitivity to spilled oil. The ESI data include information for three main components: shoreline habitats, sensitive biological resources, and human-use resources.	www.noaa.gov	http://archive.orr.noaa.gov/book_shelf/2606_SouthernCal_Shapefiles.zip	No	No	Partial	Partial	No	No	Partial	1	Specifically identified areas of sensitive biological resources	Mostly on coastal areas of counties. Sensitive sites mostly along the coast for relationship to possible spill sites.
Sensitive Species Habitat - ESA Critical Habitat	Dates for each species vary. All critical habitat layers are merged into one dataset so the latest merged dataset was downloaded.	December 2013	Folder: Habitat Sensitive Species Critical Habitat Data	Shapefile	US Fish & Wildlife Service	Federal	View a list of species with final, published critical habitat from the Critical Habitat Data folder. From the species lists you may access: -critical habitat spatial data -critical habitat metadata -Federal Register Documents -FWS species profile information	www.fws.gov	http://criticalhabitat.fws.gov/docs/crithab/crithab_all/crithab_all_layers.zip	Yes	Yes	Yes	Yes	Yes	Yes	Yes	1	Designated Critical Habitat is important to assessing habitat value for listed species.	Official FWS critical habitat layers (Polygons of critical habitat). The latest dataset was downloaded (December 2013) to ensure the capture of any new or changed boundaries of critical habitat in the SCAG region.
Soil Types	2009	September 2012	Folder: Soils	shapefile	Natural Resources Conservation Service	Federal	This data set is a digital soil survey and generally is the most detailed level of soil geographic data developed by the National Cooperative Soil Survey. The information was prepared by digitizing maps, by compiling information onto a planimetric correct base and digitizing, or by revising digitized maps using remotely sensed and other information. This data set consists of georeferenced digital map data and computerized attribute data. The map data are in a 7.5 minute quadrangle format and include a detailed, field verified inventory of soils and nonsoil areas that normally occur in a repeatable pattern on the landscape and that can be cartographically shown at the scale mapped. A special soil features layer (point and line features) is optional. This layer displays the location of features too small to delineate at the mapping scale, but they are large enough and contrasting enough to significantly influence use and management. The soil map units are linked to attributes in the National Soil Information System relational database, which gives the proportionate extent of the component soils and their properties.	http://www.nrcs.usda.gov/wps/portal/nrcs/main/national/home	http://soildatamart.nrcs.usda.gov/	Yes	Partial	Partial	Yes	Partial	Partial	Yes	1	Soils data is important factor is developing species habitat models, particularly for plant species but also for some wildlife species such as burrowing animals.	Not all areas mapped within counties.
Vegetation - USFS	2011	September 2012	Forest Planning & Monitoring Dataset - Southern California	geodatabase	USDA Forest Service	Federal	Northwest California,Sierra Nevada,and Southern California Land and Resource Manangement Plans and the Quincy Library Group GIS data sets	www.sf.usda.gov	http://www.fs.usda.gov/detail/r5/landmanagement/gis/?cid=STELPRDB5327165	Yes	No	Yes	Yes	Yes	Yes	Yes	1	Vegetation data is important to developing species habitat models and in determining the location of natural community types.	Planning level data for USFS Forests in SoCal. No real vegetation layers. Mostly utility corridors, viewsheds, WUI.
Vegetation - CDFW		September 2012	Vegetation Dataset based on the National Vegetation Classification (Western Riverside County)	geodatabase	California Department of Fish and Wildlife	State		www.dfg.ca.gov	http://www.dfg.ca.gov/biogeo	Yes	No	No	No	Partial	No	No	1	Vegetation data is important to developing species habitat models and in determining the location of natural community types.	

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Name of Database	Version	Date of download	File Name & Folder	File Type	Data Source	Type	Description	Main Website	Link to Data Download	Metadata	Coverage of Imperial County	Coverage of Los Angeles County	Coverage of Orange County	Coverage of Riverside County	Coverage of San Bernardino County	Coverage of Ventura County	Relevancy Rank	Relevancy Description	Comments
Vegetation - CalFire (FRAP mapping)	2003	September 2012	Multi-Source Land Cover Data	ArcInfo Grid	California Department of Forestry and Fire Protection	State	Land cover data provide the basis for FRAP analyses of wildlife habitat, water, grazing, and development impacts. No single mapping effort provides GIS data adequate to address this broad range of issues. Efforts to map land cover statewide typically provide insufficient resolution to capture types that occur as "inclusions", such as wet meadows, riparian areas, or certain types of development. Other efforts tend to focus on mapping land cover for a specific geographic area (e.g. bioregion, national park), or theme (e.g. wetlands, farmland). Since resources were targeted to a narrow focus, many of these efforts can make a reasonable claim to be the "best" for their respective area or theme. In order to provide the most solid basis for our analyses, FRAP staff made the decision to take advantage of these sources and merge them into a single GIS data layer.	http://frap.cdf.ca.gov	http://frap.cdf.ca.gov/webdata/data/statewide/fveg02_1_g.zip	no	Yes	Yes	Yes	Yes	Yes	Yes	1	Vegetation data is important to developing species habitat models and in determining the location of natural community types.	The FRAP vegetation dataset is a little coarser (100m raster) than CA GAP Vegetation or Landfire Exisitng Vegetation Type datasets (30m raster). Depending on how the vegetation classification is used, these other datasets may be better than this dataset.
Water: Boundary of the 48 Integrated Regional Water Management (IRWM) areas	11/08/2012	January 2013	Folder: Water IRWM Regions 48_IRWMs_Merged_11082012	shapefile	California Department of Water Resources	State	Boundary of the 48 Integrated Regional Water Management (IRWM) areas	http://www.water.ca.gov/irwm/grants/index.cfm	http://www.water.ca.gov/irwm/grants/resourceslinks.cfm	Partial	Yes	Yes	Yes	Yes	Yes	Yes	3	Political boundaries with little or no use for biological resources assessment or planning.	State wide coverage but some of eastern San Bernardino, Riverside, and Imperial counties not within IRWM.
Water: California Groundwater Basins	v4_1	September 2012	Folder: Water Groundwater Basins	shapefile	California Department of Water Resources	State	The shape file shows groundwater basins and subbasins as defined by the California Department of Water Resources. The file is intended for use with GIS software able to import files of suffix '.shp'. Groundwater basins are designated on the basis of geological and hydrological conditions, these usually being the occurrence of alluvial or unconsolidated deposits. When practical, large basins are also subdivided by political boundaries, as in the Central Valley. Basins are named and numbered per the convention of the Department of Water Resources. Many of the subbasin boundaries were developed or modified with public input, but little physical data. Because they should not be considered precise boundaries, a detailed local study should determine whether any specific area lies within a groundwater basin boundary. Contact specific agencies listed near end of basin description.	http://www.water.ca.gov/groundwater/	http://www.water.ca.gov/groundwater/bulletin118/gwbasin_maps_descriptions.cfm	Yes	Yes	Yes	Yes	Yes	Yes	Yes	3	Deep groundwater basins have little or no use for biological resources assessment or planning. Near surface groundwater associated with riparian and wetland habitats is quite valuable for habitat assessment.	State wide coverage
Water: Ecosystems	N/A	September 2012	Folder: WetlandEcosystemsNASA	txt file	NASA Goddard Institute for Space Studies	Federal	Global Distribution of Wetland Ecosystems at 1degree by 1 degree resolution - 5 class distinctions	http://data.giss.nasa.gov/landuse/	http://data.giss.nasa.gov/landuse/wetland.html	Partial	Yes	Yes	Yes	Yes	Yes	Yes	1	Wetlands are sensitive natural communities and used in species habitat modeling	Pretty coarse data, maybe better to use NLCD or more recent data collection at finer resolutions.
Water: Fractional Inundation	N/A	September 2012	Folder: WetlandEcosystemsNASA	txt file	NASA Goddard Institute for Space Studies	Federal	Global Distribution of Inundated Areal Fraction of 1°x° Cells". In combination with the Wetland Ecosystem dataset, it may be used to calculate wetland areas.	http://data.giss.nasa.gov/landuse/	http://data.giss.nasa.gov/landuse/fracind.html	Partial	Yes	Yes	Yes	Yes	Yes	Yes	2	Wetlands are sensitive natural communities and used in species habitat modeling, but this inundation data may be too coarse to be useful in wetlands identification.	This dataset is fairly old (late 1980's) and very coarse resolutions (large pixel size) in the raster. The National Land Cover Dataset (30m raster) may be a better source of this information.
Water: Impaired Water Bodies	shapefiles revised 2013	December 2013	Folder: Water Impaired state lines, polygons, 303d files	shapefile, excel database	State Water Resources Control Board	State	The State Water Board Staff Proposed California 2010 Integrated Report is a compilation of the Regional Water Quality Control Boards' 2008 Integrated Reports with State Board staff recommendations for additions, deletions, or changes. The 2010 Integrated Report provides the recommendations of the staff of the State Water Board for changes to the 2006 Clean Water Act Section 303(d) list of impaired water bodies and Clean Water Act Section 305(b) report on the quality of waters in California. Although the reporting process for 303(d) and 305(b) has been combined, only the 303(d) list requires approval by the State Water Board and USEPA. On August 4, 2010, the State Water Board approved the 303(d) List portion of the 2010 Integrated Report. The 2010 Integrated Report and supporting documents were submitted to the USEPA for final approval on October 11, 2010.	http://www.waterboards.ca.gov/mywaterquality/safe_to_swim/impaired_beaches/	http://www.waterboards.ca.gov/water_issues/programs/tmdl/integrated2010.shtml	Yes	Yes	Yes	Yes	Yes	Yes	Yes	1	Provides location and quality of water bodies (streams and lakes) that are relevant to habitat assessment for wildlife and fish.	Downloaded latest 2013 data as 2010 data provided somewhat dated.
Water: Inundation Maps	completed 03-12-2010 (Santa Monica), 03-07-2012 (San Diego), 12-15-2008 (Santa Barbara)	September 2012	Folder: Water Tsunami Inundation Santa Monica, San Diego, Santa Barbara	ESRI Arc ASCII	NOAA	Federal	The Santa Monica NAVD 88 DEM covers the coastal area surrounding Santa Monica, California including the communities of Los Angeles, Malibu, Marina del Rey, Redondo Beach, Long Beach, and Huntington Beach. The coordinate boundaries are 117.80° to 119.14°W and 33.20°N to 34.20°N. The San Diego DEMs provide coverage of the southern coast of California. The DEMs border Mexico to the south and extends north to Laguna Beach, California. The Santa Barbara DEM covers the coastal region surrounding the town of Santa Barbara, California from Port Hueneme in the southeast to Point Conception in the north west and includes the communities of Port Hueneme, Oxnard, Ventura, Carpinteria, Santa Barbara, Isla Vista, and Goleta. The coordinate boundaries are 119.14°W to 120.51°W and 33.77°N to 34.62°N. ---------- Santa Monica, CA 1/3 arc-second NAVD 88 DEM. - downloaded - Santa Monica, CA 1/3 arc-second MHW DEM. ---------- San Diego, CA 1/3 arc-second NAVD 88 DEM. - downloaded - San Diego, CA 1/3 arc-second MHW DEM.	http://www.ngdc.noaa.gov/ http://www.ngdc.noaa.gov/mgg/inundation/tsunami/inundation.html	http://www.ngdc.noaa.gov/dem/squareCellGrid/search?project.name=NOAA+Tsunami+Inundation&region.name=West+Coast	Yes	No	Partial	Partial	No	No	Partial	3	Though important to human infrastructure and land use planning, tsunamis are rare events of little use in biological resources assessment and planning.	Some coastal sections of the county mapped with DEM.
Water: National Hydrography Dataset	September 2012	September 2012	Folder: WaterRWQCB	geodatabase	USGS National Hydrography Dataset	Federal	The Watershed Boundary Dataset (WBD) defines the areal extent of surface water drainage to a point, accounting for all land and surface areas. Watershed Boundaries are determined solely upon science-based hydrologic principles, not favoring any administrative boundaries or special projects, nor particular program or agency. The intent of defining Hydrologic Units (HU) for the Watershed Boundary Dataset is to establish a baseline drainage boundary framework, accounting for all land and surface areas. At a minimum, the WBD is being delineated and georeferenced to the USGS 1:24,000 scale topographic base map meeting National Map Accuracy Standards (NMAS). Hydrologic units are given a Hydrologic Unit Code (HUC). For example, a hydrologic region has a 2-digit HUC. A HUC describes where the unit is in the country and the level of the unit. http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs143_021581.pdf	http://nhd.usgs.gov/index.html	ftp://nhdftp.usgs.gov/DataSets/Staged/States/	Yes	Yes	Yes	Yes	Yes	Yes	Yes	1	Watershed boundaries are important to habitat assessments and natural resources planning.	State wide dataset
Water: Regional Water Quality Control Board jurisdictional boundaries	2012	September 2012	Folder: WaterRWQCB	shapefile	State Water Resources Control Board	State	Jurisdictional boundaries for the 9 regional water quality control boards.	http://www.waterboards.ca.gov/	http://www.waterboards.ca.gov/waterboards_map.shtml	Yes	Yes	Yes	Yes	Yes	Yes	Yes	3	Political boundaries with little or no use for biological resources assessment or planning.	State wide dataset
Watershed Boundary Datasets	September 2012	September 2012	Folder: Watersheds	geodatabase	USDA Natural Resources Conservation Service (NRCS)	Federal	Watershed Boundary Datasets (WBD) provides a uniquely identified and uniform method of subdividing large drainage areas. The data is intended to be used as a tool for water-resource management and planning activities, particularly for site-specific and localized studies requiring a level of detail provided by large-scale map information.	http://www.nrcs.usda.gov/wps/portal/nrcs/main/national/water	http://www.nrcs.usda.gov/wps/portal/nrcs/main/national/water/watersheds/dataset	Yes	Yes	Yes	Yes	Yes	Yes	Yes	1	Watershed boundaries are important to habitat assessments and natural resources planning.	Line and polygon watersheds by county
Wetlands - USFWS Wetlands Data Layer (National Wetlands Inventory [NWI])	October 1, 2012	September 2012	National Wetlands Inventory (NWI) - Seamless Wetland Data by State	shapefile and geodatabase	US Fish & Wildlife Service	Federal	As of October of 2009, the wetland geospatial data layer provides on-line map information for 82 percent of the conterminous U.S., 31 percent of Alaska and 100 percent of Hawaii. This has been accomplished by working with numerous public and private cooperators to produce maps, digital data, and publications. Currently, efforts are underway to complete and maintain a seamless digital wetlands data set for the Nation. This effort constitutes the Wetlands Data Layer of the National Spatial Data Infrastructure	www.fws.gov	http://www.fws.gov/wetlands/Downloads/CA_shapefile_wetlands.zip http://www.fws.gov/wetlands/Downloads/CA_wetlands.zip	Yes	Yes	Yes	Yes	Yes	Yes	Yes	1	Wetlands are sensitive natural communities and used in species habitat modeling	Some of the NWI wetlands are a combination of scanned maps along with digitized data. The scanned maps are not useable for GIS analysis as the codes are digitized onto the map rather than attributes that can be extracted. Some areas of San Bernardino and Riverside Counties have not been mapped.
Wetlands - Thematic Mapping of Coastal Wetlands	2006	September 2012	Land Cover Analysis (Southern California 2000 and State 2006)	shapefile	NOAA Coastal Services Center	Federal	Land cover/land use data were developed for the Southern California counties of San Diego, Orange, Los Angeles, Ventura, Santa Barbara, and parts of Riverside and San Bernardino, using 30-meter Landsat satellite imagery. The data separates the area into 39 land types based on the standard Coastal Change Analysis Program (C-CAP) land cover categories. The standard C-CAP categories were expanded to identify certain land use types such as commercial and industrial, golf courses, and suburban residential.	http://www.csc.noaa.gov/	http://www.csc.noaa.gov/cgi-bin/crs/BouncePage.cgi?Bounce2=ftp://ftp.csc.noaa.gov/pub/crs/lca/data/ca_sc_2000.zip&product=359	Yes	Partial	Yes	Yes	Partial	Partial	Yes	1	Mapping of wetlands and assessment of potential impacts on wetlands along coastal areas from various land use changes. Useful as a wetland data set for coastal area.	
Wildfire and hazard areas	11/2007	October 2012	Folder: Wildfire \California Fire Hazard Severity Zone	shapefile	California Department of Forestry and Fire Protection	State	Data shows Fire Hazard Severity Zones in State Responsibility Areas ONLY. Shows "Moderate", "High" and "Very High". Does not show Federal or Local Responsibility Area. Data for local areas is not available from the State website. These zones, referred to as Fire Hazard Severity Zones (FHSZ), provide the basis for application of various mitigation strategies to reduce risks to buildings associated with wildland fires. The zones also relate to the requirements for building codes designed to reduce the ignition potential to buildings in the wildland-urban interface zones. This map has been created by CAL FIRE's Fire and Resource Assessment Program (FRAP) using data and models describing development patterns, estimated fire behavior characteristics based on potential fuels over a 30-50 year time horizon, and expected burn probabilities to quantify the likelihood and nature of vegetation fire exposure to new construction. Details on the project and specific modeling methodology can be found at http://frap.cdf.ca.gov/projects/hazard/methods.htm.	www.fire.ca.gov/fire_prevention	http://www.fire.ca.gov/fire_prevention/fire_prevention_wildland_statewide.php	Yes	Yes	Yes	Yes	Yes	Yes	Yes	1	Fire risk scores are useful in identifing the fire regime for natural communities and species habitat. These maps are partial coverage in that they only address state responsibility areas and not federal or local responsibility areas for fire response.	California Fire Severity Hazard layer is broken and gives an error when viewing in ArcGIS. The link to the layer on the CalFire website is broken and the GIS data can't be downloaded.

Final Existing Information and Data Gaps for Natural Resources in the SCAG Region

Name of Database	Version	Date of download	File Name & Folder	File Type	Data Source	Type	Description	Main Website	Link to Data Download	Metadata	Coverage of Imperial County	Coverage of Los Angeles County	Coverage of Orange County	Coverage of Riverside County	Coverage of San Bernardino County	Coverage of Ventura County	Relevancy Rank	Relevancy Description	Comments
FEMA: National Flood Hazard Layer (NFHL)	2012	2012 (purchased from FEMA)	Folder: FEMA_FloodHazards2012_10 There is also a copy in the N: drive	shapefiles	FEMA	Federal	National Flood Hazard Layer (NFHL) dataset is a compilation of effective Digital Flood Insurance Rate Map (DFIRM) databases (a collection of the digital data that are used in GIS systems for creating new Flood Insurance Rate Maps) and Letters of Map Change (Letters of Map Amendment and Letters of Map Revision only) that create a seamless GIS data layer for a State or Territory. It is updated on a monthly basis. Note: Currently, not all areas of a State or Territory have effective DFIRM data. As a result, users may need to refer to the effective Flood Insurance Rate Map for effective flood hazard information. Order from FEMA Map	https://msc.fema.gov/webapp/wcs/stores/servlet/FemaWelcomeView?storeId=10001&catalogId=10001&langId=-1&userType=G	https://msc.fema.gov/webapp/wcs/stores/servlet/StoreCatalogDisplay?storeId=10001&catalogId=10001&langId=-1&userType=G	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	2	FEMA flood risk areas provide an indication of where impacts on biological resoureces are likely to occur, but include only lower probability events (e.g., 100 and 200 year floods) and so are not useful for assessing ecologically important events (e.g., 2, 5, and 10 year floods).	State wide dataset
USFS Aerial Disease Detection Surveys	2012	2013	USFS_ADS	geodatabase	USFS	Federal	USFS Aerial Disease Mapping for Region 5 (Southern California) for 2012. More recent data (2013) wasn't currently available in geospatial format.	http://www.fs.usda.gov/detail/r5/forest-grasslandhealth/?cid=fsbdev3_046696	http://www.fs.usda.gov/detail/r5/forest-grasslandhealth/?cid=fsbdev3_046696	Yes	No	Partial	Partial	Partial	Partial	Partial	1	Disease detection mapping provides information regarding ecosystem health. This dataset is focused on USFS lands in each county.	Mostly on USFS lands only within each county. Similar to the USFS Forest Inventory, the aerial disease surveys were only conducted on USFS National Forests.
USFS Forest Inventory	2005	2013	USFS_Forest_Inventory	geodatabase	USFS	Federal	USFS Forest Inventory from 2005, most recent data for Cleveland, San Bernardino, Angeles and Los Padres National Forests.	http://www.fs.usda.gov/detail/r5/landmanagement/resourcemanagement/?cid=stelprdb5350981	http://www.fs.usda.gov/detail/r5/landmanagement/resourcemanagement/?cid=stelprdb5350981	Yes	No	Partial	Partial	Partial	Partial	Partial	1	Forest stand information within national forest boundaries is useful for assessing habitat function for species and ecosystem conditions.	Only conducted on USFS lands within the county. The forest inventories were based on 2005 data which was the most recent available on the USFS website. The forest inventories are restricted to USFS forest lands. Imperial County doesn't have any National Forests and no data was available.
Landfire Exisitng Vegetation Type	2008	2013	Landfire	raster	USGS	Federal	Landfire Exisitng Vegetation Type at a 30m pixel resolution	www.landfire.gov	http://landfire.cr.usgs.gov/viewer/	Yes	Yes	Yes	Yes	Yes	Yes	Yes	1	Vegetation data is important to developing species habitat models and in determining the location of	
Landfire Vegetation Condition Class	2008	2013	Landfire	raster	USGS	Federal	Landfire Vegetation Condition Class at a 30m pixel resolution	www.landfire.gov	http://landfire.cr.usgs.gov/viewer/	Yes	Yes	Yes	Yes	Yes	Yes	Yes	1	Vegetation data is important to developing species habitat models and in determining the location of natural community types. Veegetation condition	
FSIM Burn Probability	2012	2013	FSIM_Burn_Probability	raster	USFS	Federal	Fire Simulation Burn Probabilities modeled by the US Forest Service Missoula Fire Sciences Laboratory and NIFC	http://www.firelab.org/fmi	http://www.firelab.org/fmi/data-products/229-wildland-	Yes	Yes	Yes	Yes	Yes	Yes	Yes	1	Fire risk scores are useful in identifing the fire regime for natural communities and species	
Human Footprint	2008	2013	Human_Footprint	raster	USGS	Federal	Model the influence of anthropogenic disturbance in the western United States	http://sagemap.wr.usgs.gov/	http://sagemap.wr.usgs.gov/H	Yes	Yes	Yes	Yes	Yes	Yes	Yes	1	Human footprint synthesis data is useful in determining ecological and habitat functions for areas in which human influence is direct (i.e., occurs within the habitat and degrades its function)	
Cropland Data Layer	2012	2013	USDA_CDL_Cropland_2012	raster	USDA	Federal	The purpose of the Cropland Data Layer Program is to use satellite imagery to (1) provide acreage estimates to the Agricultural Statistics Board for the state's major commodities and (2) produce digital, crop-specific, categorized geo-referenced output products.	http://www.nass.usda.gov/research/Cropland/SARS1a.htm	http://datagateway.nrcs.usda.gov/	Yes	Yes	Yes	Yes	Yes	Yes	Yes	1	Many wildlife species use agricutural croplands as foraging habitat and some may also nest in or adjacent to fields. Such data is useful for habitat species models.	
gSSurgo Soils Data	2013	2013	gSSURGO	vector	NRCS	Federal	The gridded SSURGO (gSSURGO) dataset was created for use in national, regional, and statewide resource planning and analysis of soils data	http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/home/?cid=nrcs142p2_053628	http://datagateway.nrcs.usda.gov/	Yes	Partial	Partial	Yes	Partial	Partial	Yes	1	Soils data is important factor is developing species habitat models, particularly for plant species but also for some wildlife species such as burrowing animals. Grid dataset, so cannot be used below the grid scale. Best for regional planning and not for project planning. Partial coverage for Riverside, San Bernardino, Imperial, and Los Angeles counties limits its usefulness.	There are data gaps where soils are not mapped within portions of counties. Common for SSURGO data as it isn't a county wide mapping effort but usually broken up into portions of counties. Within the SCAG counties, Ventura and Orange County have been fully mapped along with Los Angeles County outside of the urbanized southern regions. Imperial County has been mapped mostly in the agricultural areas near El Centro, Salton Sea, and areas along the Colorado River. The west side of Riverside County has been mapped but the eastern side has large tracts without soil mapping. San Bernardino County has had some soil mapping, predominantly in the southwestern portions, but large tracts of land remain unmapped.
GeoMAC Fire Perimeter	2013	2013	GeoMAC_Fire_Perim	vector	Multi Agency	Federal	Wildland fire perimeters are submitted to GeoMAC by the incidents and then posted to the HTTP site for downloading. While every effort is made to provide accurate and complete information, there may be gaps in daily coverage. Please note: Files only contain perimeter data as they are submitted by the incidents. Files do not contain all fires. This data are not the authoritative fire perimeter data and should not be used as such	http://www.geomac.gov/index.shtml	http://rmgsc.cr.usgs.gov/outgoing/GeoMAC/	Yes	Yes	Yes	Yes	Yes	Yes	Yes	1	Fire data are valuable in determining likely successional stages for vegetation types within the fire perimeter based on data of fire and typical time required for successional stages of vegetation present before the fire. Valuable for wildlife and plant species habitat models, particularly for early	Some CA fire perimeters from 2013 were missing.
FAA Wind Turbine Locations	2013	2013	FAA_Wind_Turbine	vector	USFWS/FAA	Federal	Locations of Wind turbines assessed for Flight Hazard risk including planned and existing turbines	http://www.fws.gov/southwest/es/Energy_Wind_FAA.html	http://www.fws.gov/southwest/es/Energy_Wind_FAA.html	Yes	Yes	Yes	Yes	Yes	Yes	Yes	2	Wind turbines can affect wildlife habitat in several ways. Birds and bats are killed or severely injured when they strike towers and blades or are struck by moving blades. High rates of mortality result for some species, particularly migratory species that seasonally pass through areas with windfarms. Wind turbines also result in modified behavoir of ground birds that typically avoid areas with perceived perch sites for predatory raptors (i.e., open grassland or shrubland appears to become a savanna and habitat may be avoided).	This dataset is currently the best dataset for tracking existing and large wind turbines that would come under the FAA scrutiny for hazard to navigation. This dataset contains both existing and planned wind turbine locations and meteorological towers. Smaller turbines or ones that were built a long time ago aren't included such as the Cabazon turbines west of Palm Springs.
Coastal DEM from LIDAR	2010	2013	Coastal_DEM_from_LIDAR	Raster	NOAA	Federal	Light Detection and Ranging (LiDAR) data is remotely sensed high-resolution elevation data collected by an airborne collection platform. This LiDAR dataset is a survey of Coastal California. The project area consists of approximately 2616 square miles. The project design of the LiDAR data acquisition was developed to support a nominal post spacing of 1 meter. Fugro EarthData, Inc. acquired 1546 flight lines in 108 lifts between October 2009 and August 2011. LiDAR data collection was performed with two Piper Navajo twin engine aircrafts, utilizing a Leica ALS60 MPiA sensor; collecting multiple return x, y, and z as well as intensity data. The bare-earth lidar data was used to create hydro-flattened DEMs (Digital Elevation Models) available for download from the NOAA CSC Digital Coast	http://csc.noaa.gov/dataviewer/index.html?action=advsearch&qType=in&qFld=projectid&qVal=1005#	http://csc.noaa.gov/dataviewe	Yes	No	Partial	Partial	No	No	Partial	1	Lidar data is valuable for assessing various aspects of species habitat and natural community distributions including elevational limits to species ranges, depressional features that support small seasonal wetlands, and fine-grained watershed ("micro-watershed") mapping. This Lidar dataset, however, is limited in it's coverage to coastal Orange, Los Angeles, and Ventura Counties and therefore its value to SCAG resources planning is	
CA GAP Vegetation	2008	2013	CA_GAP_Landcover	raster	USGS	Federal	The USGS GAP Land Cover Data Set includes detailed vegetation and land use patterns for the continental United States. The data set incorporates the Ecological System classification system developed by NatureServe to represent natural and semi-natural land cover. The 590 land use classes in the data set can be displayed at three levels of detail, from general (8 classes) to most detailed. The Land Cover Data Set can be used to identify those places in the country with sufficient good quality habitat to support wildlife, a key step in developing sound conservation plans.	http://gapanalysis.usgs.gov/gaplandcover/data/	http://gapanalysis.usgs.gov/gaplandcover/data/download/	Yes	Yes	Yes	Yes	Yes	Yes	Yes	1	Vegetation data is important to developing species habitat models and in determining the location of natural community types.	

Final Existing Information and Data Gaps for Natural Resources in the SCAG Region

Name of Database	Version	Date of download	File Name & Folder	File Type	Data Source	Type	Description	Main Website	Link to Data Download	Metadata	Coverage of Imperial County	Coverage of Los Angeles County	Coverage of Orange County	Coverage of Riverside County	Coverage of San Bernardino County	Coverage of Ventura County	Relevancy Rank	Relevancy Description	Comments
National Elevation Dataset (NED) - 30m	2014	January 2014	NED_Elevation	raster	USGS	Federal	National Elevation Dataset (NED) at a 30m resolution for the SCAG counties. NED is a new raster product assembled by the U.S. Geological Survey. NED is designed to provide National elevation data in a seamless form with a consistent datum, elevation unit, and projection. Data corrections were made in the NED assembly process to minimize artifacts, perform edge matching, and fill sliver areas of missing data. NED has a resolution of one arc-second (approximately 30 meters) for the conterminous United States, Hawaii, Puerto Rico and the island territories and a resolution of two arc-seconds for Alaska. NED data sources have a variety of elevation units, horizontal datums, and map projections. In the NED assembly process the elevation values are converted to decimal meters as a consistent unit of measure, NAD83 is consistently used as horizontal datum, and all the data are recast in a geographic projection. Older DEM's produced by methods that are now obsolete have been filtered during the NED assembly process to minimize artifacts that are commonly found in data produced by these methods. Artifact removal greatly improves the quality of the slope, shaded-relief, and synthetic drainage information that can be derived from the elevation data.	www.nationalmap.gov	www.nationalmap.gov	Yes	Yes	Yes	Yes	Yes	Yes	Yes	1	Elevation and topographic information are useful in developing species habitat models based on elevation, slope, and aspect characteristics preferred by specific species.	10m 10m data available as well, but much larger file sizes for county wide data.
Calflora	On-line database	On-line database	On-line database	On-line database	Calflora	Non-profit	Calflora is a website you can use to learn about plants that grow wild in California (both native plants and weeds). Calflora is a nonprofit organization responsible for the website run by two paid staff members and a few volunteers. Information in Calflora comes from many sources: public agencies, non-profits, scientists, private donors, and you! To find out about a plant species, you can enter the common or scientific name and search the database on-line. The result is an illustrated table of plants that match the name you entered. Click one of the plants in the table to learn a lot of detail about that plant, including where it has been observed in California. You can also enter a place and get an illustrated list of the plants that grow there. We call that What Grows Here? You define "here" by zip code, place name, or any of a number of other ways. You refine "here" by zooming in and out of a map. Then click "Search for Plants" to get an illustrated list of plants known to grow "here.	http://www.calflora.org/	http://www.calflora.org/	On-line database, see website	Yes	Yes	Yes	Yes	Yes	Yes	1	The Calflora website provides information on the general location of all plant species as well as taxanomic and ecological information.	Searchable on-line database. Not download to SCAG inventory.
Jepson Herbarium	On-line database	On-line database	On-line database	On-line database	University of California - University and Jepson Herbaria	State	The University and Jepson Herbaria of the University of California at Berkeley are two collections of pressed plants housed together along with research labs, libraries, and archives. Together the Herbaria hold about 2,200,000 specimens, one of the largest collections in North America	http://ucjeps.berkeley.edu/	http://ucjeps.berkeley.edu/	On-line database, see website	Yes	Yes	Yes	Yes	Yes	Yes	1	The Jepson Herbarium website provides information on the general location of all plant species as well as taxanomic and ecological information.	Searchable on-line database. Not download to SCAG inventory.
California Wildlife Habitat Relationships (CWHR)	2008a	Jan 2014	CWHR	Shapefile	California Wildlife Habitat Relationships (WHR) database is a branch of the California Department of Fish and Widlife (CDFW)	State	The California Wildlife Habitat Relationships (CWHR) database is maintained by the California Department of Fish and Widlife. The CWHR software is a database application compiled as a stand-alone program in Visual dBase. It can be used to predict the presence of and habitat suitability for 694 terrestrial vertebrates based on geographic distribution, relationships to habitats and stages, seasonal use patterns and presence of habitat elements. Species life history descriptions, habitat descriptions, and custom reports of database queries can be printed. The software also includes BIOVIEW, an application that translates habitat suitability values for wildlife species into data that can be used in a GIS, with an option to apply fuzzy logic to the calculation of these values. A user's manual is included on CD and may be downloaded separately.	http://www.dfg.ca.gov/biogeodata/cwhr/	http://www.dfg.ca.gov/biogeodata/cwhr/cwhr_downloads.asp#CWHR_Software	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	1	WHR provides simple models based on existing vegetation data for identifying the presence and distribution of habitat for all native wildlife species in California.	The CWHR software is a database application compiled as a stand-alone program in Visual dBase. This program was downloaded to the SCAG inventory.
NMFS - DPS and Critical Habitat Datasets	2014	Jan 2014	NMFS	geodatabase	National Marine Fisheries Service (NMFS) of the National Oceanic and Atmospheric Administration (NOAA)	Federal	National Marine Fisheries Service (NMFS) data for ESA listed endangered Southern California Steelhead Distinct Population Segment (DPS) boundary (streams and watersheds) and for ESA listed endangered Black Abalone critical habitat. Data also includes historical distribution (streams and watersheds) of Southern California Steelhead DPS.	http://www.westcoast.fisheries.noaa.gov/index.html	http://www.westcoast.fisheries.noaa.gov/maps_data/endangered_species_act_critical_habitat.html	Yes	No	Yes	No	No	No	Yes	1	Locations of streams and watersheds that support the federally protected Southern California Steelhead DPS and coastal waters that support Black Abalone are valuable in assessing the presence of habitat for these species and hence	
California Freshwater Species DB	June 2013	March 2014	TNC	geodatabase	The Nature Conservancy	NGO	Comprehensive geospatial database of California's freshwater species compiled and standardized into single format from 140 sources. This data provides a single source for geodata on the animals and plants that rely on California's freshwater resources to survive. An atlas of the freshwater biodiversity patterns in California based on this database is available in Below the Surface: California's Freshwater Diversity	http://scienceforconservation.org/dow	http://scienceforconservation.org/downloads/category/gis	Yes	Yes	Yes	Yes	Yes	Yes	Yes	1	Provides a description of freshwater aquatic species present by watershed.	
Mojave Desert Ecoregional Assessment	September 2010	March 2014	TNC	geodatabase	The Nature Conservancy	NGO	This dataset is a product of the Mojave Desert Ecoregional Assessment and characterizes the distribution of biodiversity conservation values and land disturbance to help inform regional land-use and conservation investment. The data were grouped into four categories of conservation value: Ecologically Core, Ecologically Intact, Moderately Degraded, and Highly Converted	http://scienceforconservation.org/downl	http://scienceforconservation.	Yes	No	Partial	No	Partial	Partial	No	1	The presence of sensitive natural communities is used in species habitat modeling.	
California Coastal Commission Zone	August 2009	June 2011	Cal_Coastal_Comm_Zone	shapefile	Cal Trans	State	California Coastal Commission Zone Boundary	http://www.coastal.ca.gov/	www.dot.ca.gov/hq/tsip/gis/datalibrary/gisdatalibrary.ht	Yes	No	Yes	Yes	No	No	Yes	2	Jurisdictional boundaries within which planning restrictions may exist that affect the level of	Line showing the boundary
Transmission Lines (Sect 386)	Nov 2008	April 2014	Transmission	geodatabase	DOE	Federal	The United States Department of Energy, the United States Department of the Interior Bureau of Land Management, the United States Department of Agriculture Forest Service, and United States Department of Defense (the Agencies) have issued a final Programmatic Environmental Impact Statement (PEIS) that evaluates issues associated with the designation of energy corridors on federal lands in eleven Western states.	http://corridoreis.anl.gov/index.cfm	http://corridoreis.anl.gov//eis/fmap/gis/index.cfm	Yes	Yes	Yes	Yes	Yes	Yes	Yes	2	Transmission lines can affect wildlife habitat in several ways. Birds are killed or severely injured when they strike transmission lines or are electrocuted when perching on un-protected power poles and towers. Maintenance corridors within	On Federal Land only
Transmission Lines (TIGER_2006)	2006 Second Edition	April 2014	Transmission	shapefile	US Census Bureau	Federal	In the 2000 Census, TIGER files contained transmission lines as one of their linear features. This dataset is somewhat dated so any county data that is more current should be used.	https://www.census.gov/geo/maps-data/	https://www.census.gov/geo/maps-data/data/tiger-line.html	no	Yes	Yes	Yes	Yes	Yes	Yes	2	Transmission lines can affect wildlife habitat in several ways. Birds are killed or severely injured when they strike transmission lines or are electrocuted when perching on un-protected	TIGER discontinued posting transmission lines in 2006
Marine Protected Areas	2013	April 2014	Marine_Prot_Areas	shapefile	CDFW	State	Marine Protected Areas including both state and federal designated areas	https://www.dfg.ca.gov/marine/gis/dow	https://www.dfg.ca.gov/mari	Yes	No	Yes	Yes	No	No	Yes	2	Existing protected lands boundaries are of use in	