Geographic Information Systems at EDD
QCEW and Fire Mapping

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Labor Market Information Division
Employment Development Department

Outline

I. Define QCEW, GIS
   i. Using GIS with QCEW

II. Background on California Wildfires
   i. Fire Hazard Zones
   ii. Fire History

III. Using GIS to find potential effect of wildfires on employment
   i. Fire Perimeters
   ii. GIS vs ZIP Codes
   iii. Daily Report
   iv. Examples of extremely large fires and QCEW

IV. Other Fire Resources and Info

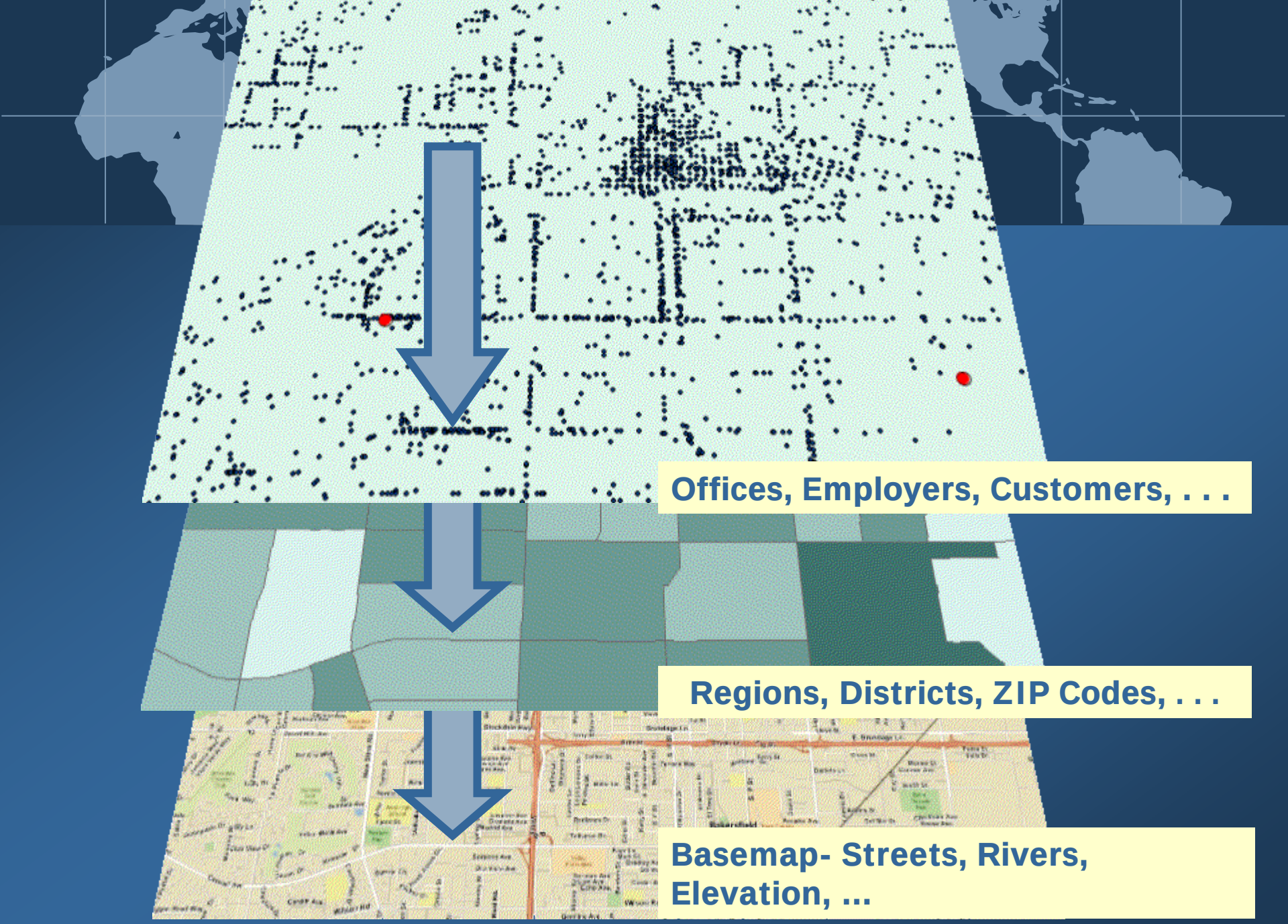
V. Requesting data or maps from the LMID GIS Team

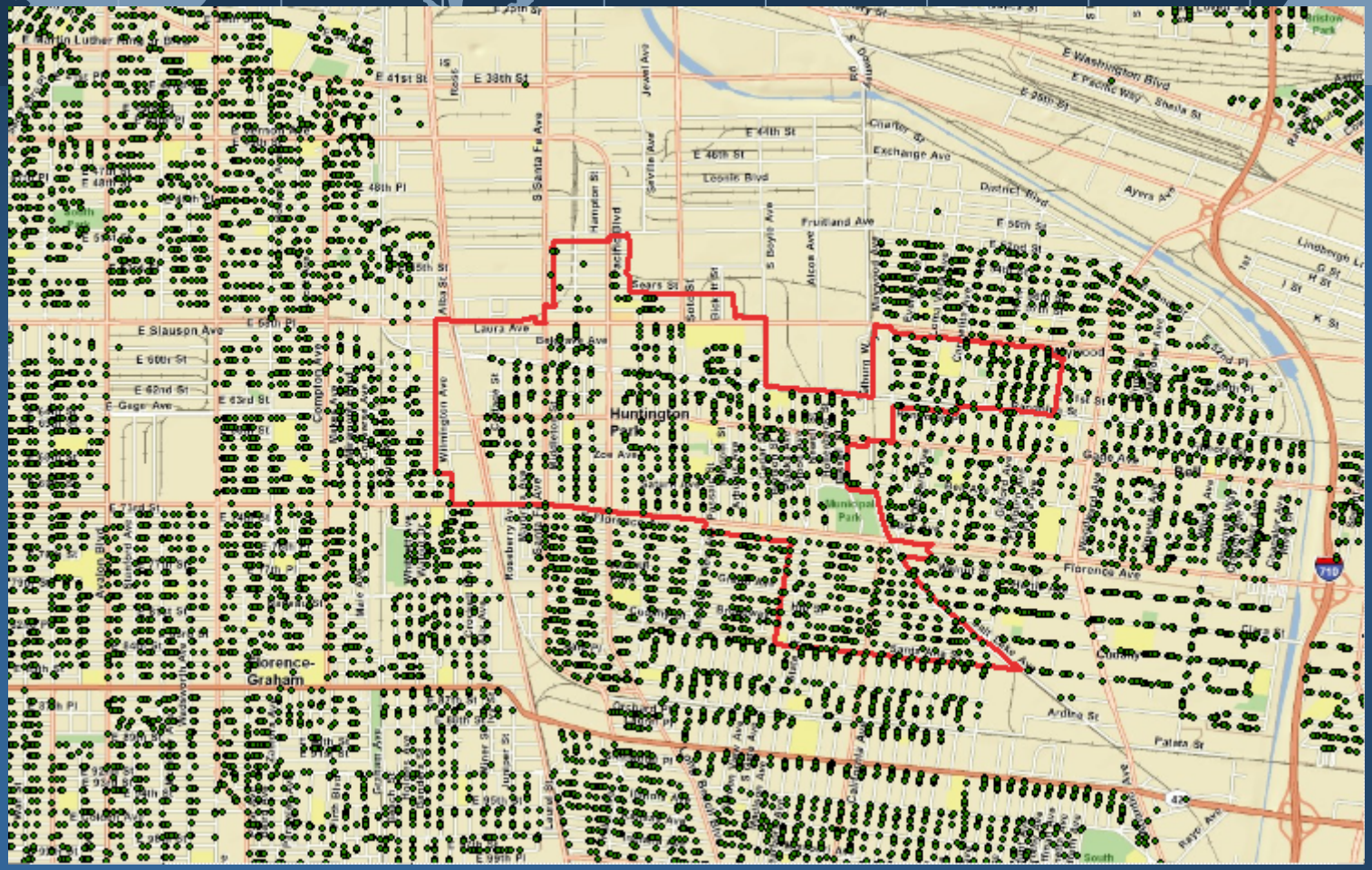
QCEW

- QCEW is the U.S. Bureau of Labor Statistics' Quarterly Census of Employment and Wages
- Also known as ES-202 Program
- Tabulation of employment and wages of establishments which report to the Unemployment Insurance (UI) programs
- Confidential data – all confidential data are suppressed

Geographic Information Systems

an organized collection of computer hardware, software, geographic data, and personnel designed to efficiently capture, store, update, manipulate, analyze, and display all forms of geographically referenced information


Offices, Employers, Customers, . . .
Regions, Districts, ZIP Codes, . . .
Basemap- Streets, Rivers, Elevation, ...


E Washington Blvd
E Pacific Way
Sheila St
E 41st St
E 38th St
E 44th St
E 46th St
Leonis Blvd
Exchange Ave
District Blvd
Ayers Ave
Fruitland Ave
E 55th St
E 48th Pl
S Santa Fe Ave
Hampton St
Jewel Ave
Seville Ave
Sears St
Laura Ave
E Slauson Ave
E 60th St
E 62nd St
E 63rd St
E Gage Ave
Wilmington Ave
Huntington Park
Municipal Park
Florence Ave
Florence-Graham
Ardine St
Patata St
Lindbergh Ln
Bristow Park
Rosebery Ave
Compton Ave
Alba St
Alcoa Ave
S Boyle Ave
Rayo Ave
E 99th Pl

Employment & Wage Data - 2012 Second Quarter - STATE ASSEMBLY DISTRICT 39

MAJOR INDUSTRY NAICS SECTOR	NAICS Classification	Business Establishments	June 2012 Employment	Quarterly Wages
AGRICULTURE, FORESTRY, FISHING & HUNTING	11	24	367	$3,473,143
MINING	21	2	**	**
UTILITIES	22	5	151	$3,458,258
CONSTRUCTION	23	743	7,051	$85,177,697
MANUFACTURING	31 32 33	753	22,890	$288,521,377
WHOLESALE TRADE	42	547	7,304	$91,076,983
RETAIL TRADE	44 45	857	13,117	$140,329,569
TRANSPORTATION & WAREHOUSING	48 49	204	4,962	$55,575,717
INFORMATION	51	112	847	$14,959,164
FINANCE & INSURANCE	52	198	1,836	$23,038,122
REAL ESTATE & RENTAL & LEASING	53	307	2,080	$22,804,073
PROFESSIONAL, SCIENTIFIC, & TECHNICAL SKILLS	54	445	2,869	$39,400,307
MANAGEMENT OF COMPANIES AND ENTERPRISES	55	26	975	$15,620,492
ADMIN & SUPPORT & WASTE MGMT & REMEDIATION	56	328	5,856	$48,649,662
EDUCATIONAL SERVICES	61	162	6945	$82,392,036
HEALTH CARE & SOCIAL ASSISTANCE	62	497	12,532	$140,184,546
ARTS, ENTERTAINMENT, & RECREATION	71	115	728	$5,824,206
ACCOMMODATION & FOOD SERVICES	72	448	6,587	$26,235,572
OTHER SERVICES	81	486	3,056	$26,224,135
NON-CLASSIFIED	99	450	**	**
GOVERNMENT	92	5	315	$3,923,330
TOTAL (Including confidential/suppressed data)		**6,714**	**100,909**	**$1,121,636,289**

**** Data are confidential and suppressed**

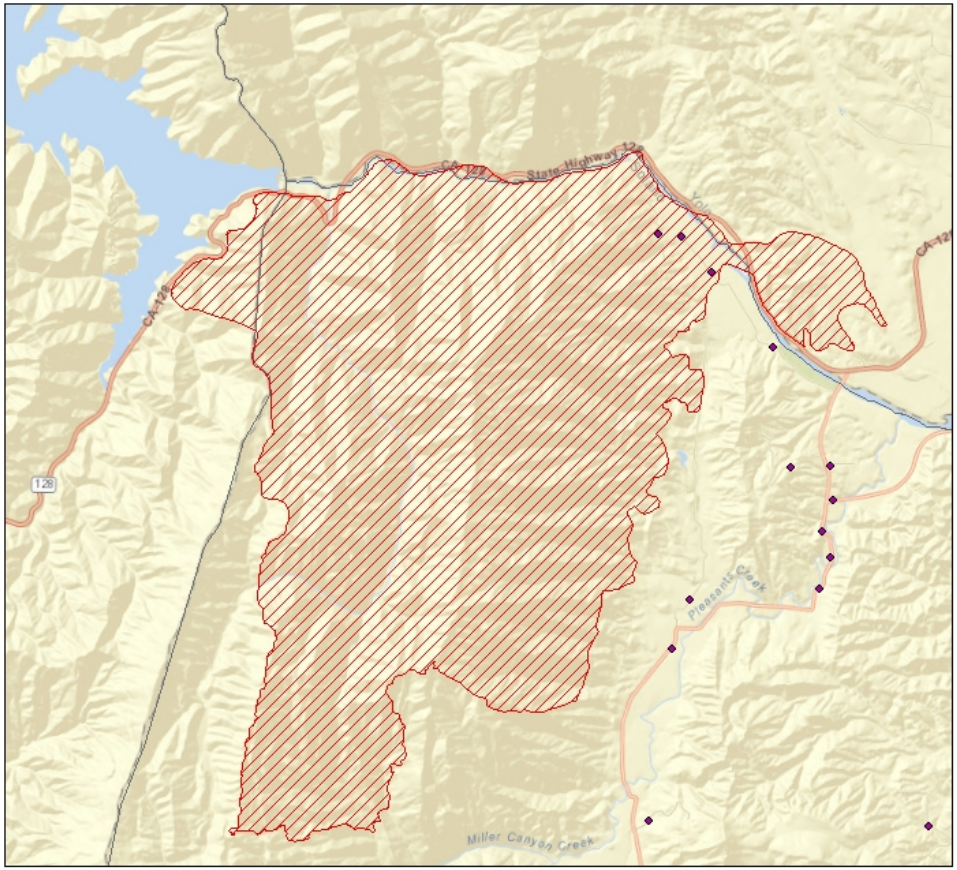
Data sources:
Quarterly Census of Employment and Wages (QCEW) developed through a cooperative program between the states and the U.S. Bureau of Labor Statistics.

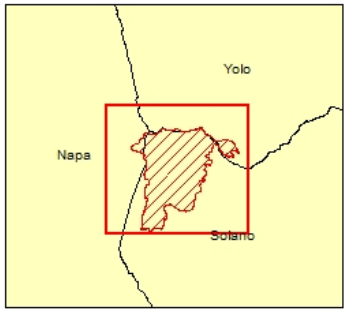
Confidentiality Restrictions:
All data contained in this table are non-confidential and may be shared. Any confidential cells are suppressed. Confidential data is determined by a formula that incorporates the number and size of firms within a cell.

Data notes:
Business Establishments and Wage data are from 2012 Second Quarter.
Employment is from June 2012.
Domestic employers are not included in the data.
These data are summarized by industry code.

Data and GIS Analysis by:
Labor Market Information Division
California Employment Development Department
www.labormarketinfo.edd.ca.gov
March 1, 2013

Wragg Fire





0 0.5 1 2 Miles

Wragg Fire
Napa, Yolo, and Solano Counties

Fire Perimeter dated August 3, 2015

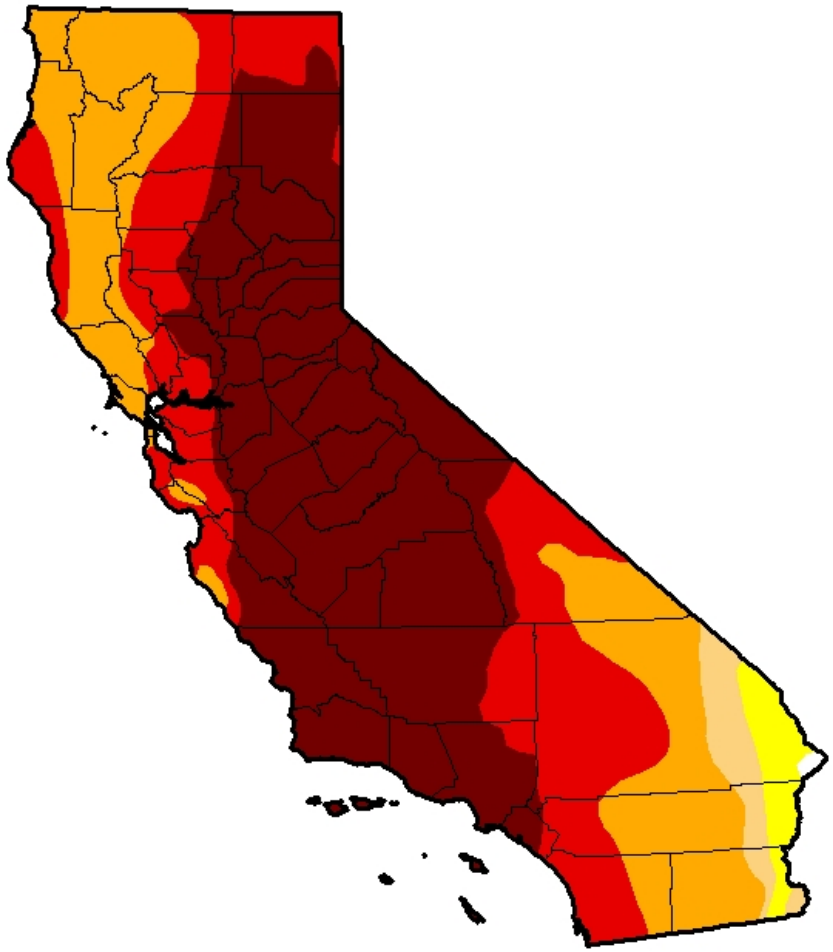
3 establishments
*** employees

Data Sources:
Fire Perimeter: GeoMAC/USGS Rocky Mountain Geographic Science Center
QCEW, Third Quarter, 2014

Cartography by:
Labor Market Information Division
California Employment Development Department
July 2015

U.S. Drought Monitor

California



July 21, 2015

(Released Thursday, Jul. 23, 2015)

Valid 8 a.m. EDT

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	0.14	99.86	97.35	94.59	71.08	46.00
Last Week 7/14/2015	0.14	99.86	98.71	94.59	71.08	46.00
3 Months Ago 4/21/2015	0.14	99.86	98.11	93.44	66.60	46.77
Start of Calendar Year 12/30/2014	0.00	100.00	98.12	94.34	77.94	32.21
Start of Water Year 9/30/2014	0.00	100.00	100.00	95.04	81.92	58.41
One Year Ago 7/22/2014	0.00	100.00	100.00	100.00	81.89	36.49

Intensity:

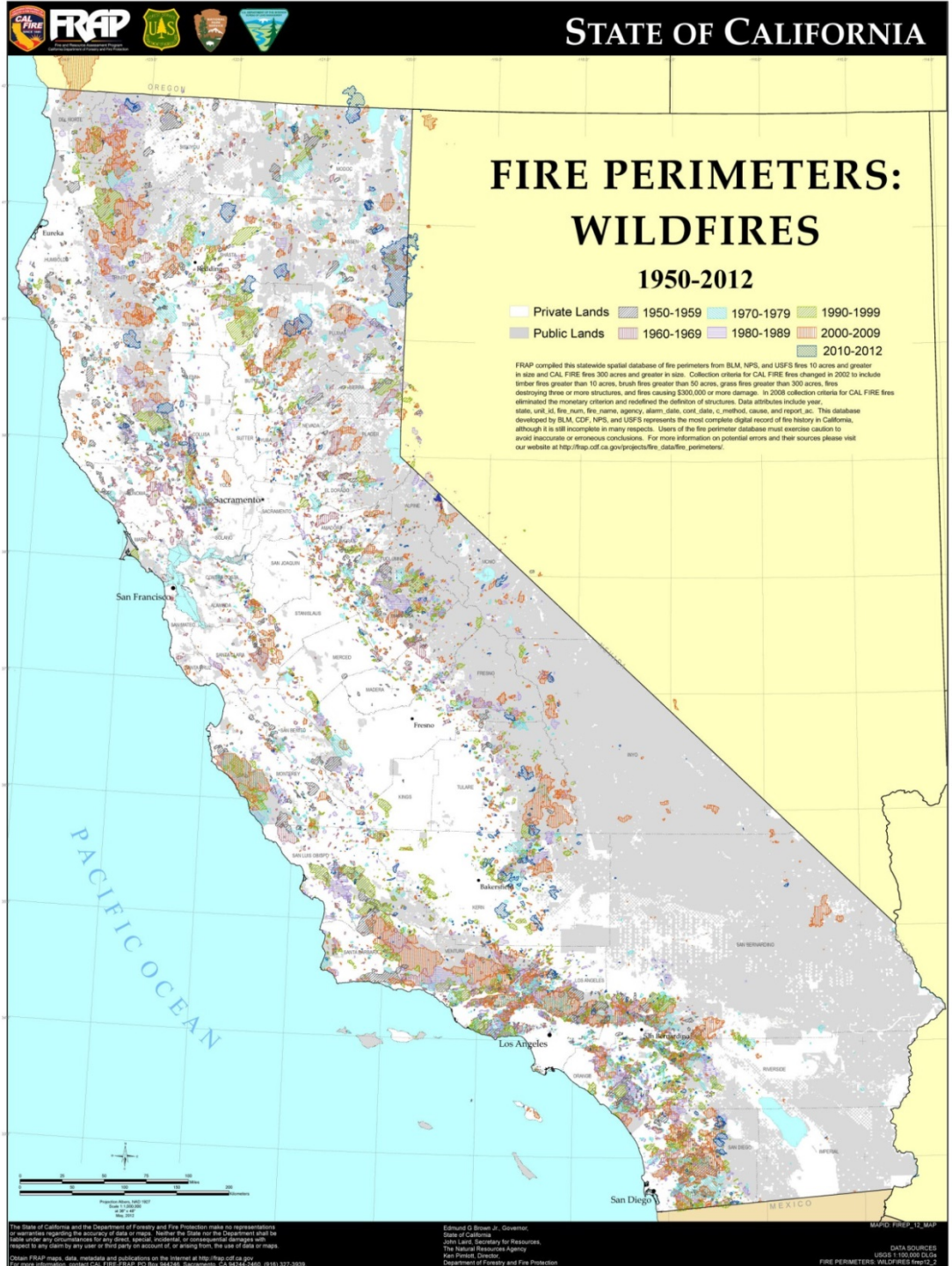
- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

Author:
David Simeral
Western Regional Climate Center

http://droughtmonitor.unl.edu/

STATE OF CALIFORNIA
DRAFT
FIRE HAZARD
SEVERITY ZONES
IN LOCAL RESPONSIBILITY AREA
Fire Hazard Severity Zones
LRA Very High
LRA High
LRA Moderate
LRA Unzoned
Other Very High
Other High
Other Moderate
Other Unzoned
OREGON
NEVADA
ARIZONA
MEXICO
PACIFIC OCEAN
Eureka
Redding
Sacramento
San Francisco
Fresno
Bakersfield
Los Angeles
San Bernardino
San Diego
DEL NORTE
HUMBOLDT
TRINITY
SHASTA
LASSEN
MODOC
TEHAMA
PLUMAS
MENDOCINO
GLENN
BUTTE
SIERRA
LAKE
COLUSA
SUTTER
YUBA
NEVADA
PLACER
YOLO
EL DORADO
SONOMA
NAPA
SACRAMENTO
ALPINE
AMADOR
MARIN
SOLANO
CALAVERAS
SAN JOAQUIN
TUOLUMNE
CONTRA COSTA
MONO
ALAMEDA
STANISLAUS
MARIPOSA
SAN MATEO
SANTA CRUZ
MADERA
FRESNO
SAN BENITO
BIYO
MONTEREY
TULARE
KINGS
KERN
SAN LUIS OBISPO
SANTA BARBARA
SAN BERNARDINO
VENTURA
LOS ANGELES
RIVERSIDE
ORANGE
IMPERIAL
SAN DIEGO
Projection Albers, NAD 1927
Scale 1:1,000,000
at 36° x 40°
September 17, 2007
The State of California and the Department of Forestry and Fire Protection make no representations or warranties regarding the accuracy of data or maps. Neither the State nor the Department shall be liable under any circumstances for any direct, special, incidental, or consequential damages with respect to any claim by any user or third party on account of, or arising from, the use of data or maps.
Obtain FRAP maps, data, metadata and publications on the Internet at http://frap.cdf.ca.gov
For more information, contact CDF-FRAP, PO Box 944246, Sacramento, CA 94244-2460, (916) 327-3609.
Arnold Schwarzenegger, Governor,
State of California
Mike Chrisman, Secretary for Resources,
The Resources Agency
Ruben Grijalva, Director,
Department of Forestry and Fire Protection
MAPID: FHSZL06_1_MAP
DATA SOURCES:
USGS 1:100,000 DLGs
CAL FIRE State Responsibility Areas (SRA05_4)
CAL FIRE Hazard Severity Zones (FHSZL06_1)


STATE OF CALIFORNIA
FIRE PERIMETERS: WILDFIRES
1950-2012
Private Lands
Public Lands
1950-1959
1960-1969
1970-1979
1980-1989
1990-1999
2000-2009
2010-2012
FRAP compiled this statewide spatial database of fire perimeters from BLM, NPS, and USFS fires 10 acres and greater in size and CAL FIRE fires 300 acres and greater in size. Collection criteria for CAL FIRE fires changed in 2002 to include timber fires greater than 10 acres, brush fires greater than 50 acres, grass fires greater than 300 acres, fires destroying three or more structures, and fires causing $300,000 or more damage. In 2008 collection criteria for CAL FIRE fires eliminated the monetary criterion and redefined the definition of structures. Data attributes include year, state, unit_id, fire_num, fire_name, agency, alarm_date, cont_date, c_method, cause, and report_ac. This database developed by BLM, CDF, NPS, and USFS represents the most complete digital record of fire history in California, although it is still incomplete in many respects. Users of the fire perimeter database must exercise caution to avoid inaccurate or erroneous conclusions. For more information on potential errors and their sources please visit our website at http://frap.cdf.ca.gov/projects/fire_data/fire_perimeters/.
OREGON
Eureka
Sacramento
San Francisco
Fresno
Bakersfield
Los Angeles
San Bernardino
San Diego
PACIFIC OCEAN
MEXICO
The State of California and the Department of Forestry and Fire Protection make no representations or warranties regarding the accuracy of data or maps. Neither the State nor the Department shall be liable under any circumstances for any direct, special, incidental, or consequential damages with respect to any claim by any user or third party on account of, or arising from, the use of data or maps.
Obtain FRAP maps, data, metadata and publications on the Internet at http://frap.cdf.ca.gov
Edmund G Brown Jr., Governor,
State of California
John Laird, Secretary for Resources,
The Natural Resources Agency
Ken Pimlott, Director,
Department of Forestry and Fire Protection
MAPID: FIREP_12_MAP
DATA SOURCES
USGS 1:100,000 DLGs
FIRE PERIMETERS: WILDFIRES frap12_2

CALIFORNIA WILDFIRES
From June 11, 2008 - November 25, 2008

Created by OES - GIS, Kris Higgs
December 18, 2008 Source: FAMWEB 209s
/active_incident/fires/2008/Statewide/Projects/
statewide_fires_621-1125_wPerimeters_v3_a.mxd

Fire Perimeter

Please Note: This is not an all inclusive map.
Fire Perimeters have not been collected for
all wildland fires that burned this season.

75 37.5 0 75 Miles

N W E S

California Large Wildfire History

Source: California Dept of Forestry and Fire Protection (CAL FIRE)

YEAR	Total Acreage Burned	Max Fire Acreage	Large Fire Count (Over 300 acres)
2015 (to Aug 4)	134,000	65,000	--
2014	545,389	133,284	230
2013	539,470	255,858	298
2012	1,012,003	315,577	351
2011	220,592	25,398	317
2010	102,132	16,442	209
2009	535,935	160,371	254
2008	1,306,169	162,818	438
2007	995,097	240,207	349
2006	751,672	162,702	314
2005	251,827	63,436	306
2004	265,027	39,138	277
2003	998,634	280,278	341
2002	970,179	499,945	244
2001	179,537	34,319	209

GIS layers of Fire Perimeters are created in multiple ways:

- By a field observer tracking the fire on a USGS 7.5 Topo map, by observing the fire from a distance.
- By a field observer with a GPS unit walking the fire perimeter (already burned portion of the line)
- By a GPS line of the fire perimeter collected by either a GIS person or a field observer as flown by a helicopter
- By a fixed wing remote infrared (IR) remote sensing data, downloaded to a IR interpreter and provided as GIS data to the incident. (NIROPS)

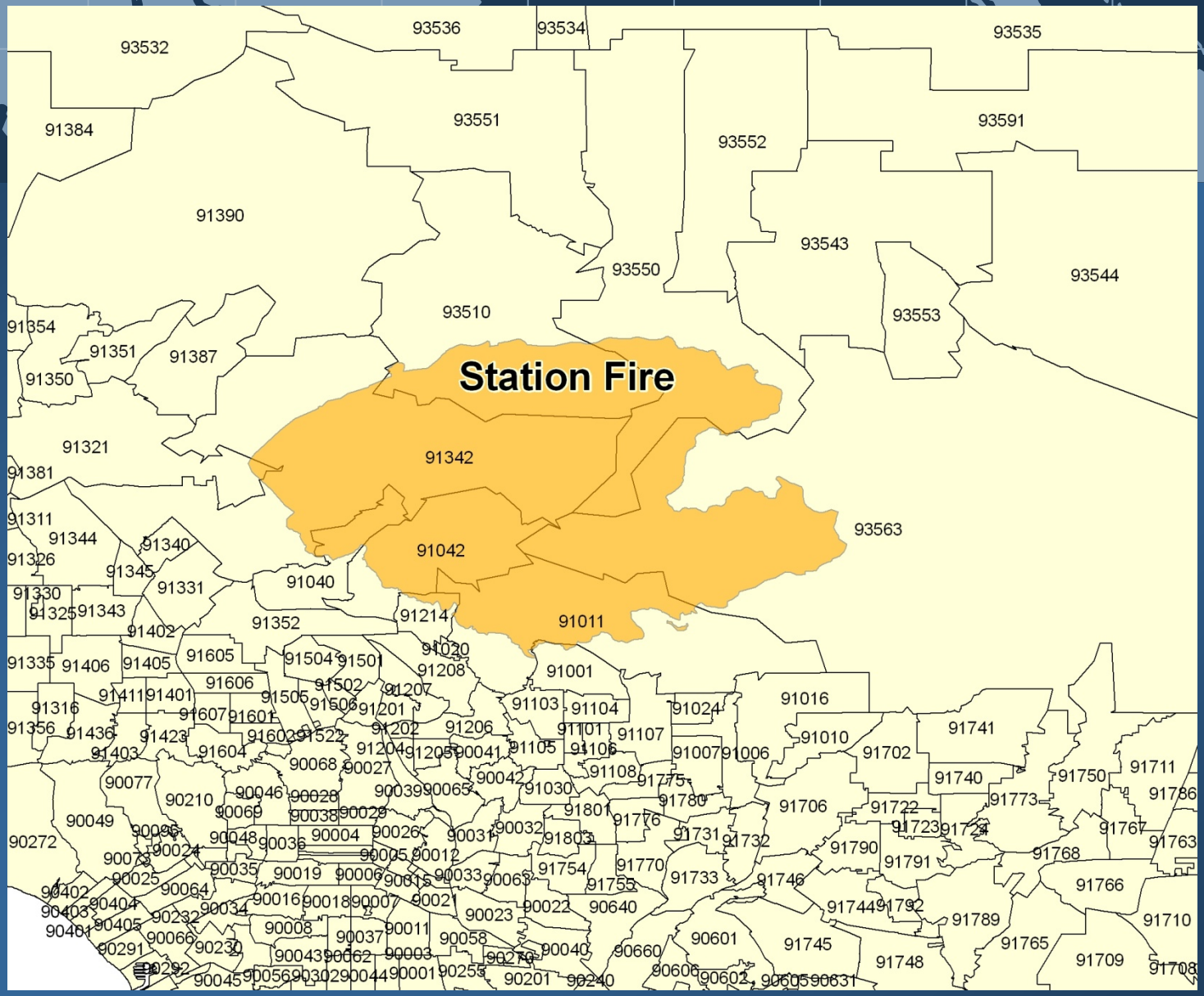
Usually it is a combination of some or all of the above.

It usually takes 48-72 hours for the incident to free up a helicopter to be able to get a GPS line this way.

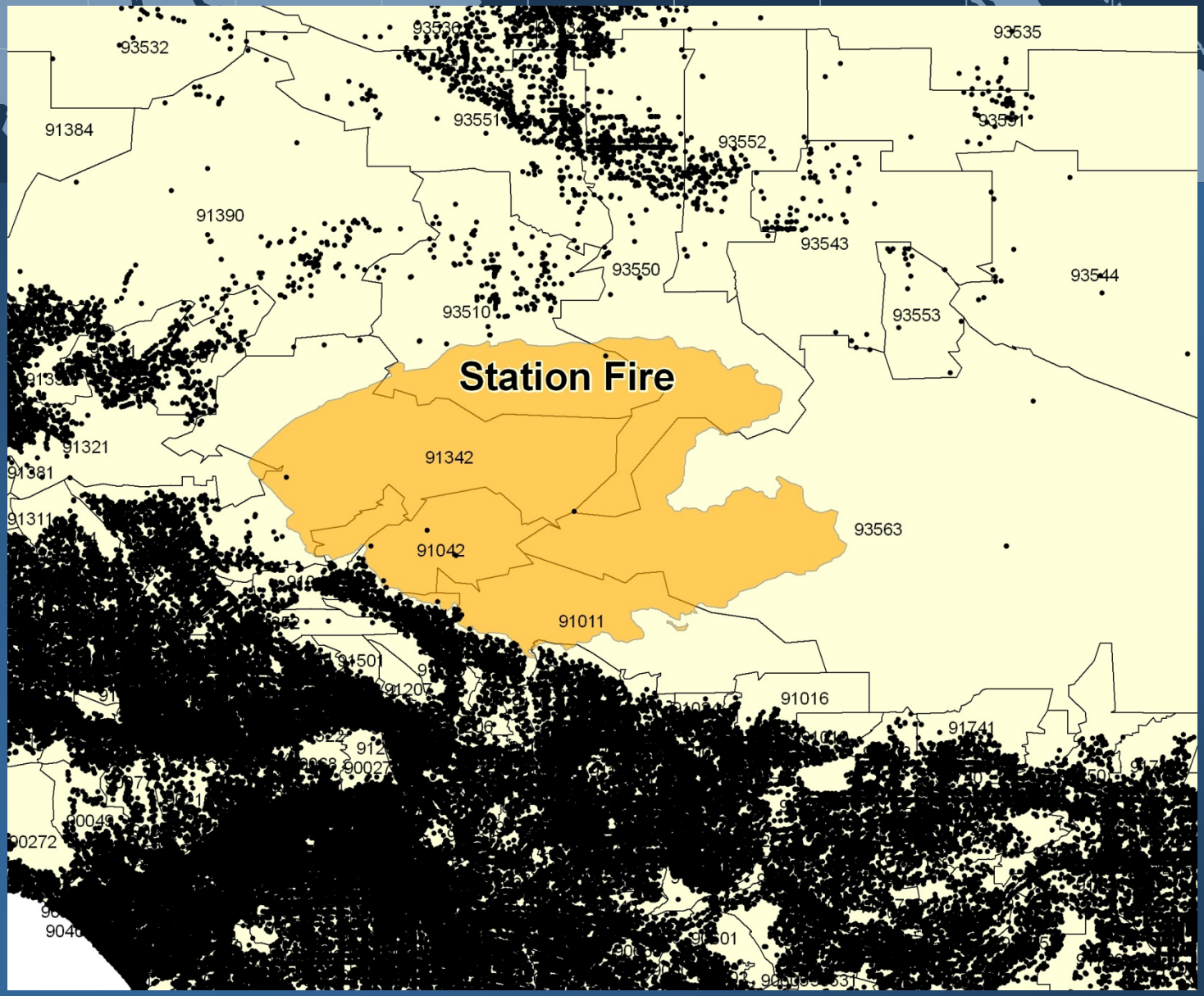
Depending on the size of the fire, cloud cover, etc, the NIROPS data is the most commonly used way to get perimeter information on large incidents
http://nirops.fs.fed.us/pages/about

Area : Happy Camp
Klamath Falls National Park
California
Sensor : WorldView-3
Resolution (GSD): 40cm (SWIR)
DigitalGlobe
Copyright © DigitalGlobe. All rights reserved.

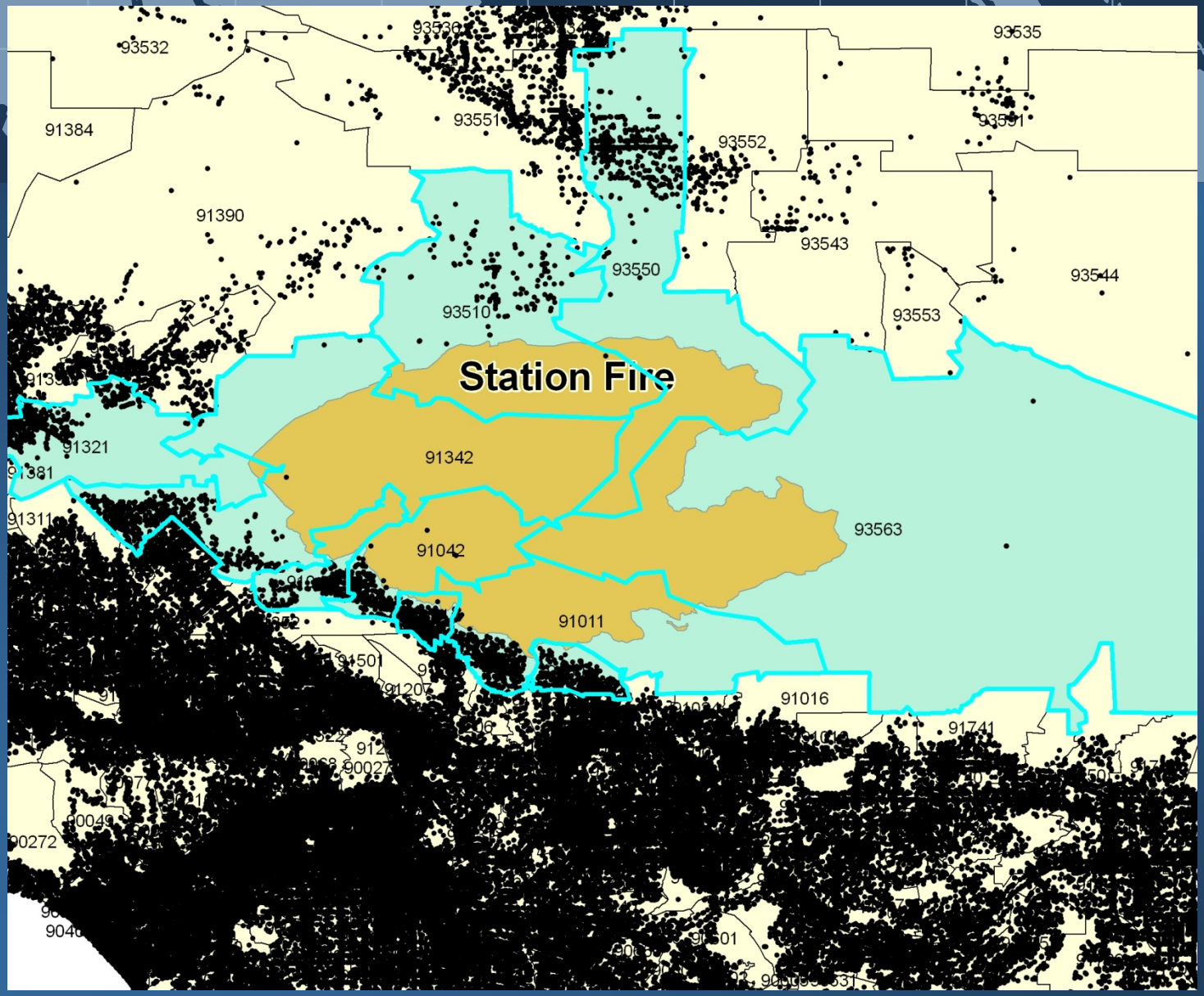
LA County Station Fire 2009

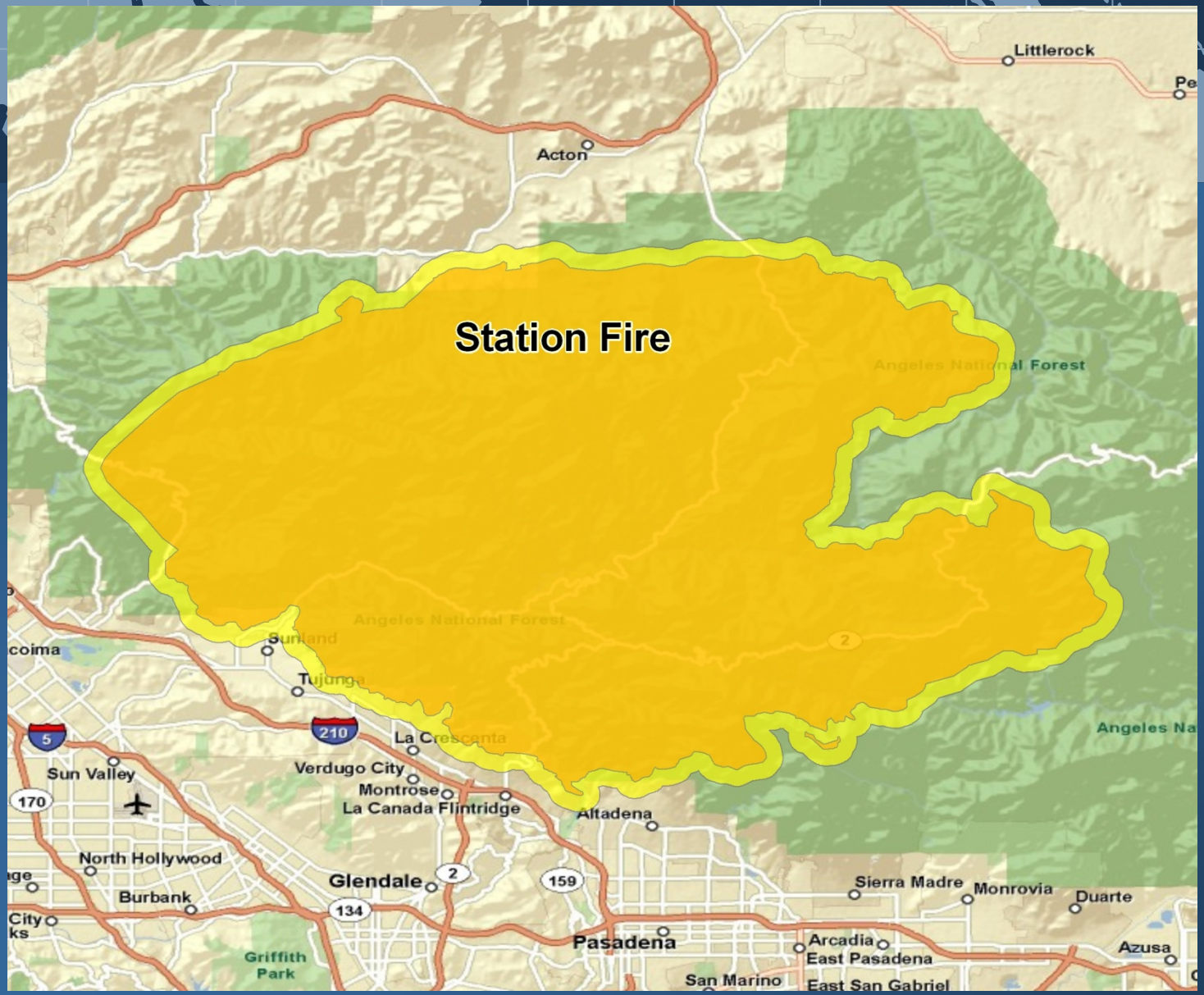


ZIP Codes intersecting the Station Fire

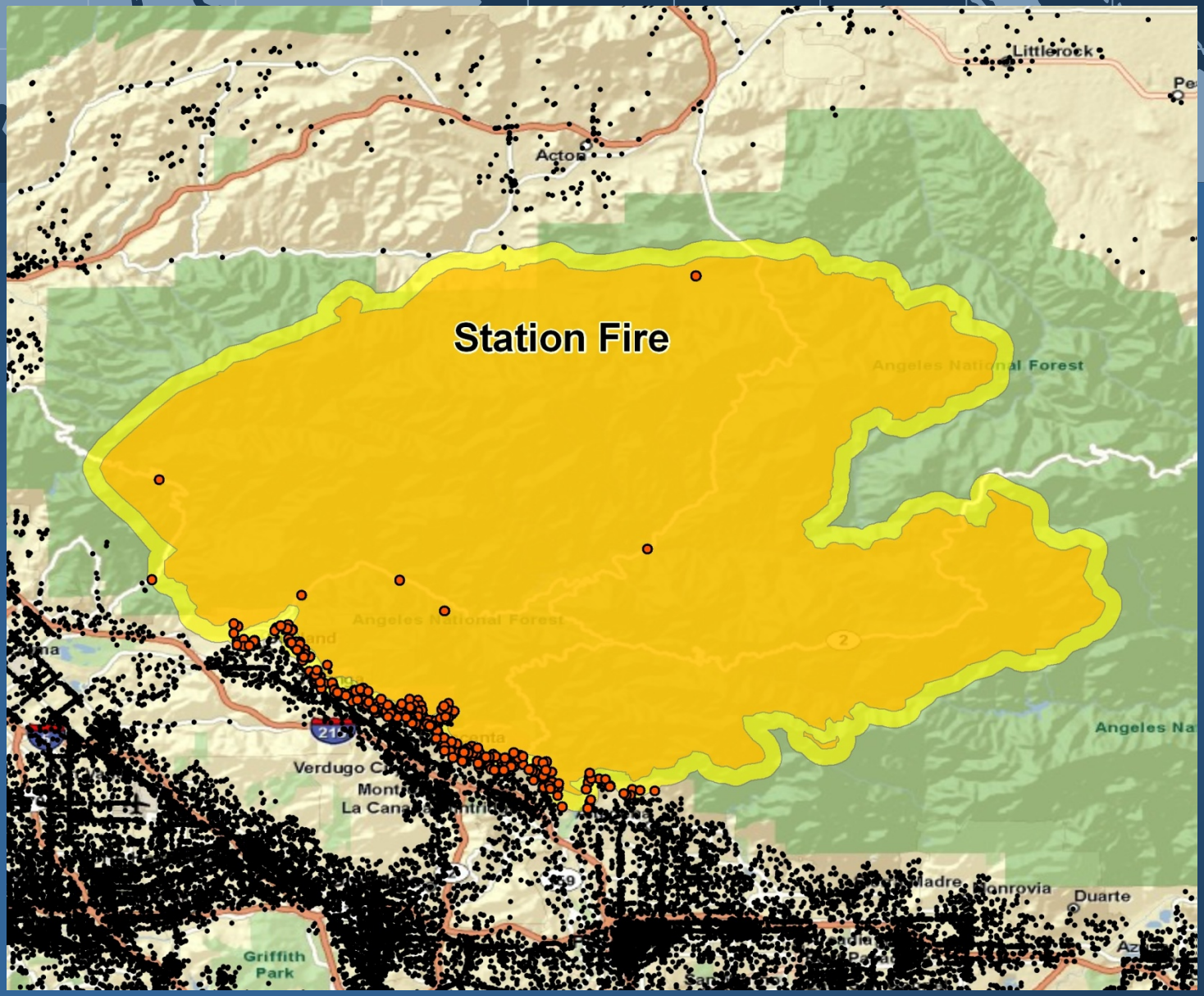


Location of Employers


Station Fire
93532
93535
91384
93551
93552
91390
93543
93550
93544
93510
93553
91321
91342
91311
93563
91042
91011
91501
91016
91741
90272



Fire perimeter with ½ mile buffer



Employers within Fire perimeter and ½ mile buffer

	Employers	Employment
Within ZIP Codes	5,396	60,816
Within Fire Boundary	21	140
Within Fire Boundary and ½ Mile	334	1,052

FW: Fire Information 7/29/15 - Message (HTML)

File | Message | Insert | Options | Format Text | Review | Adobe PDF

Paste | Cut | Copy | Format Painter | Clipboard | Calibri | 11 | Basic Text | Address Book | Check Names | Names | Attach File | Attach Item | Signature | Include | Follow Up | High Importance | Low Importance | Tags | Zoom | Zoom

Send | To... | Cc... | Subject: FW: Fire Information 7/29/15

Good Morning,

Note: All information regarding business establishments and employment provided below, *if any data are provided*, should be treated as confidential and should only be viewed by EDD employees.

Below is a link to the latest statewide fire map produced by Cal OES:

http://eddnet/teams/WSLMID/GIS/Shared%20Documents/2015%20Fires/Statewide_Fires_20150729_0800.pdf

There are no new fires today.

Pines Fire – Los Angeles County – 200 acres – 85% contained. No business establishments affected.

Lowell Fire – Nevada County – 2,303 acres – 45% contained. No business establishments affected.

Willow Fire – Madera County – 2,077 acres 30% contained. No business establishments affected.

Cutca Fire – San Diego County – 167 acres 75% contained. No business establishments affected.

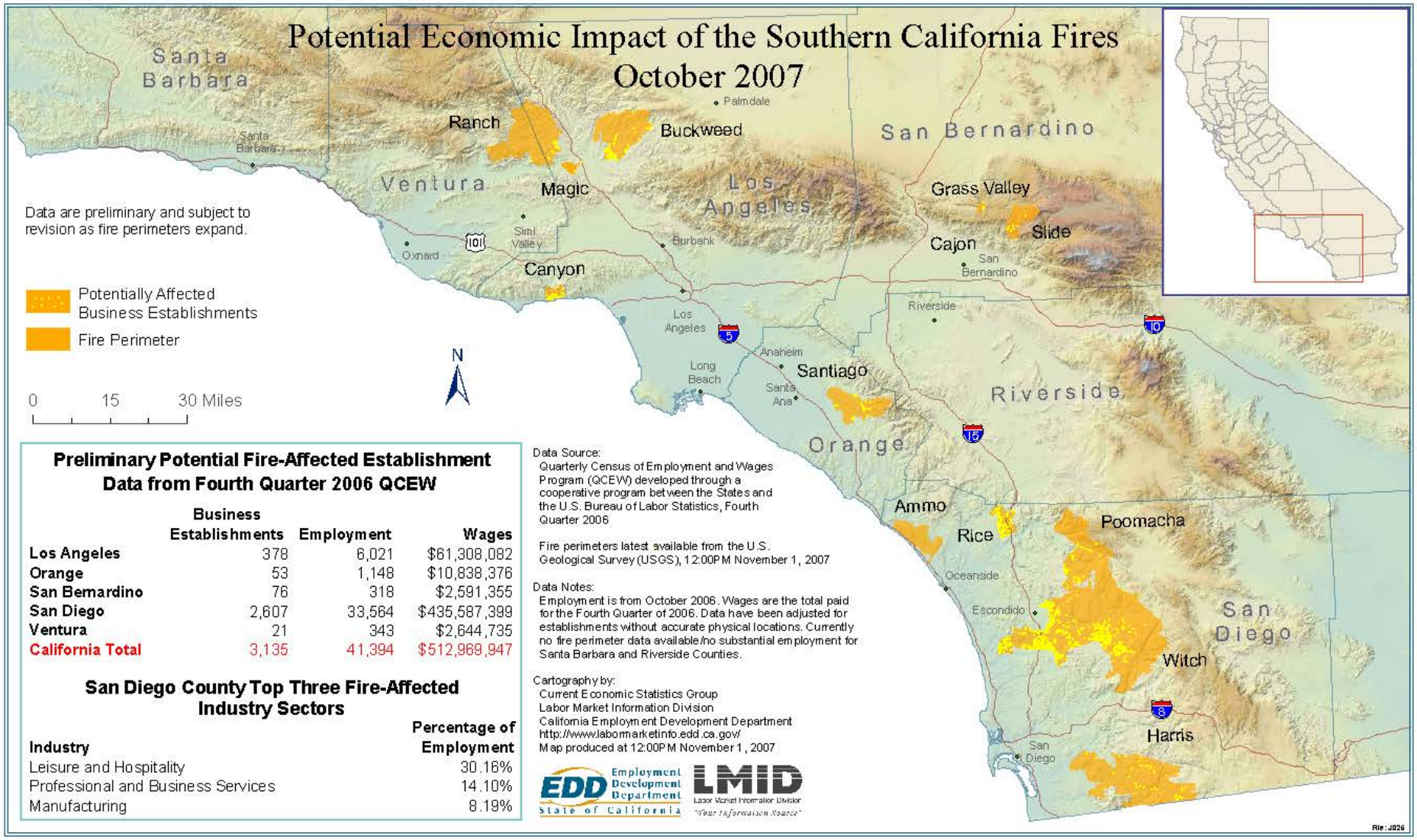
Queen Fire – Humboldt County – 158 acres – 60% containment. No fire perimeter yet.

Kyburz Fire – El Dorado County – 75 acres – 98% contained. No fire perimeter yet.

Wragg Fire – Napa and Solano Counties – 7,100 acres – 80% contained. 3 business establishments affected.

Triple Fire – Tulare County – 430 acres – 75% contained. No fire perimeter yet.

Pines Fire – Los Angeles County – 200 acres – 100% contained. No business establishments affected.

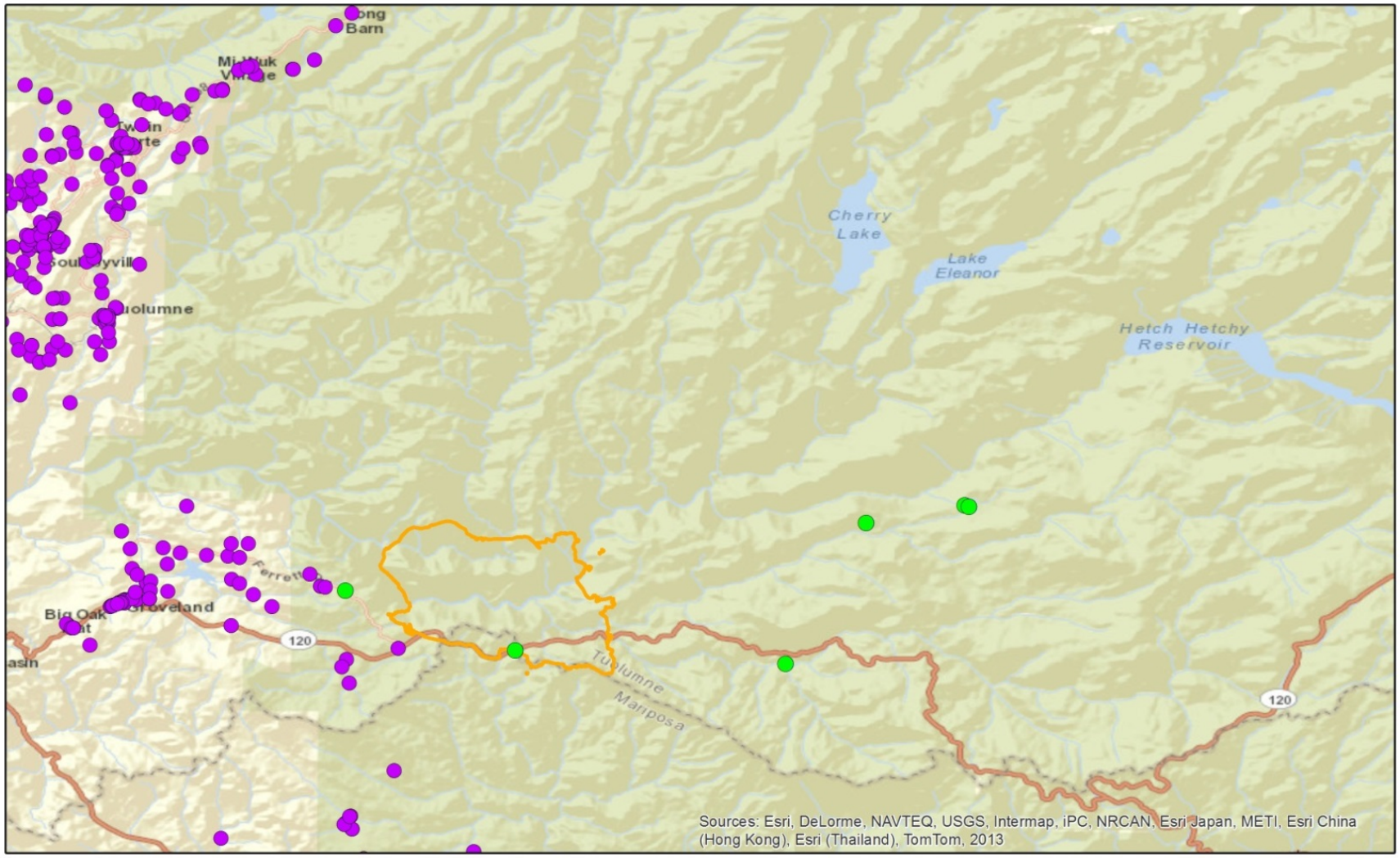


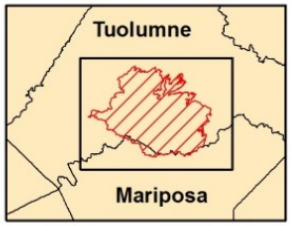
Preliminary Potential Fire-Affected Establishment Data from Fourth Quarter 2006 QCEW

	Business Establishments	Employment	Wages
Los Angeles	378	6,021	$61,308,082
Orange	53	1,148	$10,838,376
San Bernardino	76	318	$2,591,355
San Diego	2,607	33,564	$435,587,399
Ventura	21	343	$2,644,735
California Total	3,135	41,394	$512,969,947

San Diego County Top Three Fire-Affected Industry Sectors

Industry	Percentage of Employment
Leisure and Hospitality	30.16%
Professional and Business Services	14.10%
Manufacturing	8.19%



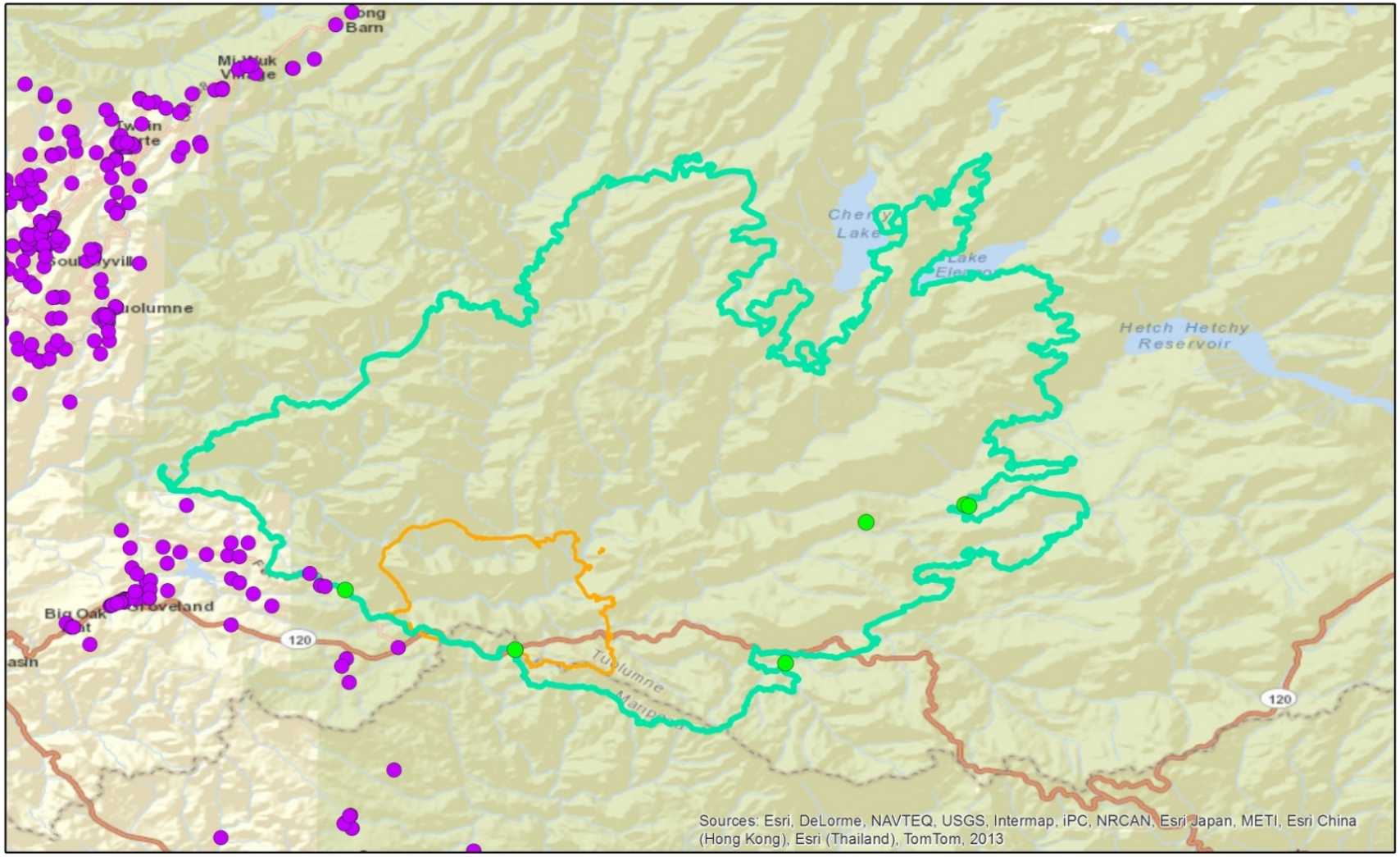


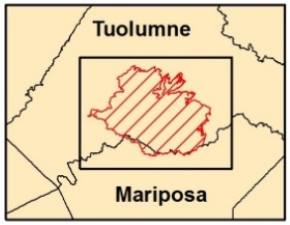
Rim Fire
Tuolumne County
92% Containment as of 10/1/13
Full Containment expected 10/6/13
257,135

Within the Fire Perimeter
Establishments:6
Employment: 122
Wages: $ 918,919

Fire Perimeter dated 09/26/2013 - as of 0958
Source: GeoMAC/USGS Rocky Mountain Geographic Science Center

- Establishments within Fire Perimeter
- Establishments outside Fire Perimeter
- Rim Fire Perimeter - August 20





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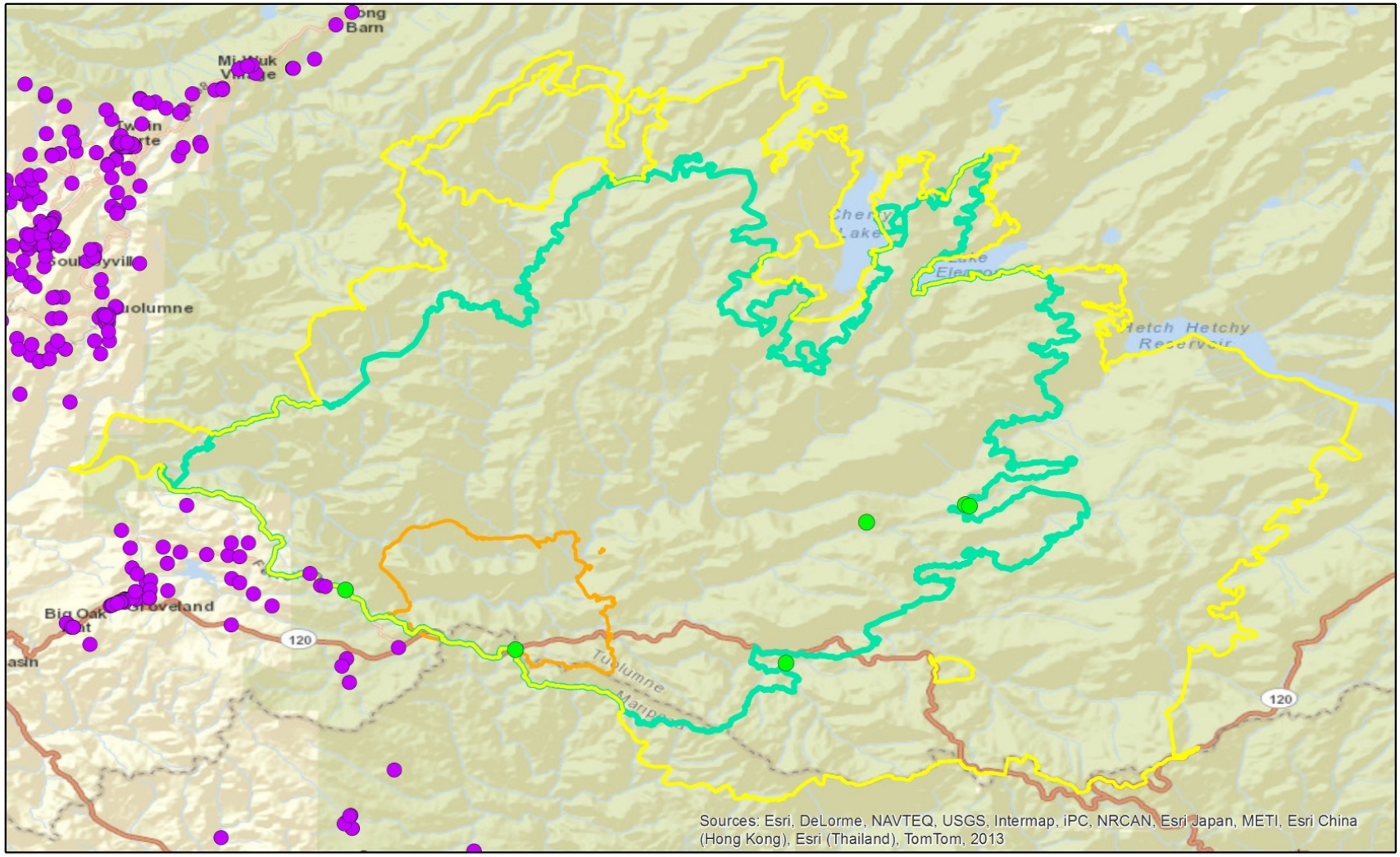
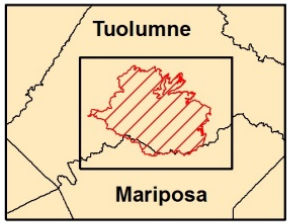
- Establishments within Fire Perimeter
- Establishments outside Fire Perimeter
- Rim Fire Perimeter - August 24
- Rim Fire Perimeter - August 20





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- Establishments within Fire Perimeter
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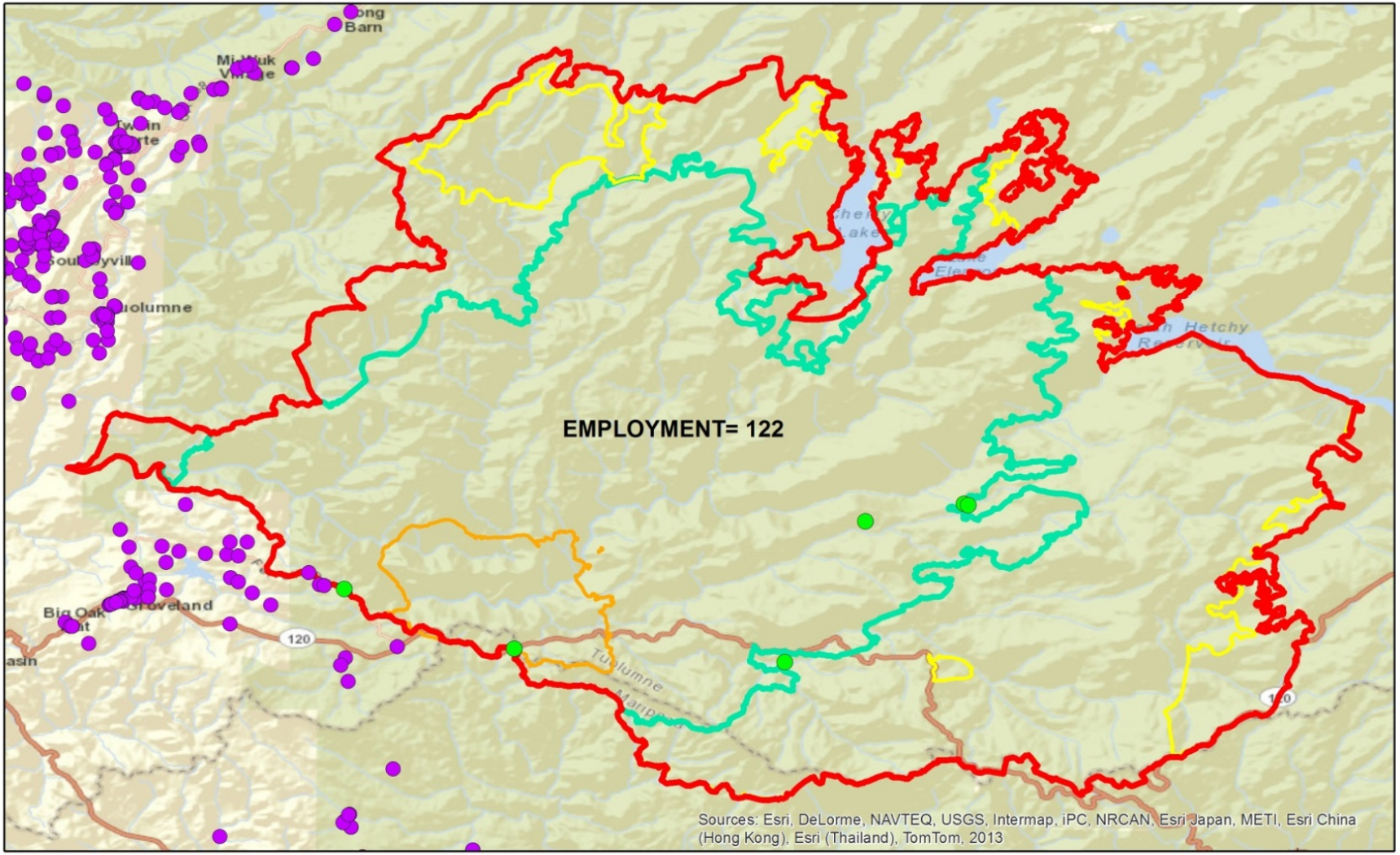
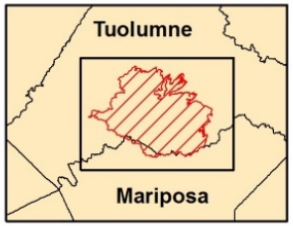
- Rim Fire Perimeter- September 5
- Rim Fire Perimeter - August 24
- Rim Fire Perimeter - August 20





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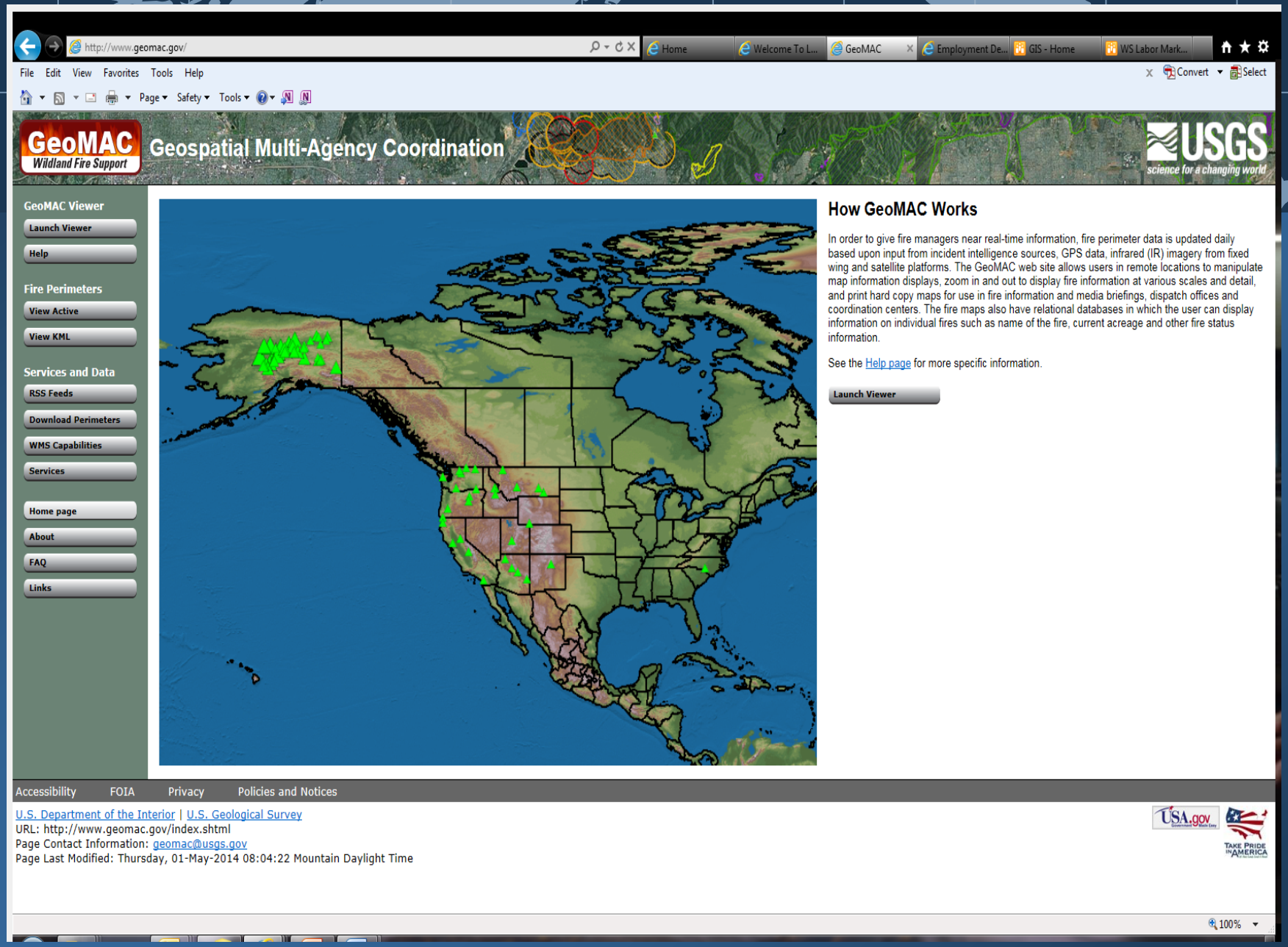
Fire Perimeter dated 09/26/2013 - as of 0958
Source: GeoMAC/USGS Rocky Mountain Geographic Science Center

- Establishments within Fire Perimeter
- Establishments outside Fire Perimeter
- Rim Fire Perimeter - September 26
- Rim Fire Perimeter- September 5
- Rim Fire Perimeter - August 24
- Rim Fire Perimeter - August 20



http://www.geomac.gov/

Interactive Fire Map:

http://calema.maps.arcgis.com/apps/OnePane/basicviewer/index.html?appid=8f418629727943d4b284cafdb823cdd0

Unmanned Aerial Systems-(UAS) aka Drones

- **Drones forced firefighters to ground aircraft while fighting California wildfire**

Unmanned Aerial Systems (UAS)

Unmanned Aerial Systems

USFS Tips for hobby & recreational use:

http://www.fs.fed.us/science-technology/fire/unmanned-aircraft-systems/responsible-use

Making a request for data or maps:

- Contact a member of the GIS Team (either directly, or through a LMID Labor Market Consultant, or use the “Ask EDD” form on our website)

- Try to contact us 3 weeks in advance:
  - Discuss data needed for request (we may not have required data)
  - Narrow down the request to what is needed
  - Determine the fee for the request
  - Turnaround time depends on complexity of request and current workload

Labor Market Information

The EDD promotes California's economic health by providing information to help people understand California's economy and make informed labor market choices. Please take a moment to help us improve our website by taking this brief Website User Survey.

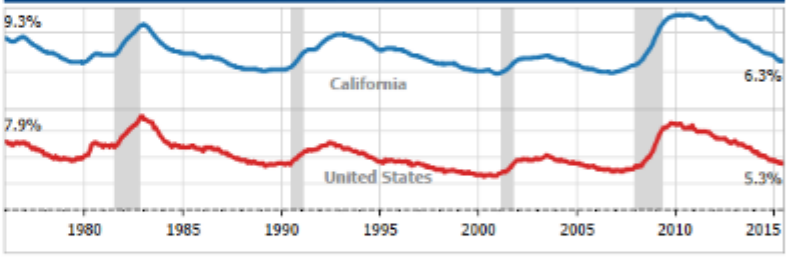
California Labor Market - Current Status

California Labor Market Indicators

Metrics	June, 2015	May, 2015	Change	
Unemployment Rate	6.3%	6.4%	-0.1	↓
Labor Force	19,042,600	19,026,200	16,400	↑
Employment	17,847,800	17,812,800	35,000	↑
Unemployment	1,194,800	1,213,400	-18,600	↓
Non Farm Jobs	16,069,000	16,046,100	22,900	↑
UI Initial Claims	204,200	173,200	31,000	↑

Data Source: EDD Labor Market Information Division:: Note: May 2015 data is revised and June 2015 is preliminary

Unemployment Rate



LMI by Customer

- Job Seekers
- Employers
- Economic Developers
- Educators and Trainers
- Workforce Partners
- **More...**

LMI by Subject

- Industries
- Occupations
- Employment Projections
- Unemployment Rate and Labor Force
- Wages
- **More...**

LMI by Geography

- California
- Counties
- Metropolitan Statistical Areas
- Local Workforce Investment Areas
- Regional Economic Areas
- **More...**

Data Library

- Historical Labor Force Data
- Local Area Profiles
- Major Employers by County
- Online Job Vacancy Statistics
- Top Statistics
- **More...**

Online Services

- What's New in LMI
- Monthly Data Release
- Occupational Guides
- Interactive Maps and Charts
- Publications Library
- **More...**

General Information

- Contact LMI
- Custom Data Services
- Data Release Schedule
- Labor Market Information FAQs
- Website User Survey
- **More...**