The Atlas of
CALIFORNIA
MAPPING THE CHALLENGES OF A NEW ERA

Richard A. Walker and Suresh K. Lodha
Three Angles on an Atlas

1. The Measure of Maps
   - What Kind of Atlas?

2. Atlas Shrugged
   - How to Build an Atlas?

3. Making a Case
   - Chapter and Verse
The Cartography of Conquest
- Discovery & demarcation

Mapping Modernity
- Surveys, states & property

Boosters and Bird’s Eyes
- Promotional maps

Computers and Criticism
- GIS and Critical Geography

Living on Google’s Earth
- Surveillance & resistance
Mapping California - I

- California Conquered
Mapping California - II

- California Carved & Commodified
Mapping California - III

- California Considered Scientifically
  - Coast & Geologic survey maps
  - California leadership in mapping
Mapping California - IV

- California Trumpeted
  - Travel & booster maps
  - Selling the sunshine
Mapping California - V

- California [G]Oogled
  - Everything at a glance
  - Nothing left to change
Mapping California - VI

- Popular Mapping
- Antipodean uses

Foreclosures by race: Black Exodus

Posted on April 5, 2012 by Platro

I got some interest in the map and analysis in the previous post, and upon request I have proceeded to overlay race data with foreclosure data. It should not surprise anyone that the news is grim. But better than a graph, a map shows disparities in space. So:

**THE ELLIS ACT 3040**
SAN FRANCISCO FAMILIES FORCED OUT OF THEIR HOMES, 1/1/1997 - 5/18/2008

The Ellis Act is a state law which says that landlords have the right to evict tenants in order to “go out of business”. All units in the building must be vacant of all tenants—no one can be singled out. Most often it is used to convert condos or group-owned tenancy-in-common units. Once a building becomes a condo it is exempt from Rent Control, regardless of the age of the building, and even if a unit owner subsequently rents to a long-term tenant.

There is no limit to the number of times a building owner can “go out of business”. Rent Board data shows some owners buying and Ellisng multiple buildings over time. If these buyers do not want to be landlords, why are they buying buildings full of rental units? These Ellisd buildings - now “out of business” - are also showing up for rent as illegal vacation rentals on sites like Airbnb and VRBO.

With landlords looking for ways to avoid sending to long-term tenants, the housing crisis in San Francisco will only be exacerbated. See our chart of Ellis data here.

If you have been evicted, please fill out our survey to add your story to a comprehensive map in the making!
California Atlases – Where to Fit In?

Cover by Dugald Stalker
How to Put Together an Atlas?
Appealing to the Public

- Small format
- Short text
- Visual impact
Covering California

10 chapters x 4 spreads = 40 spreads

1. Land & People (Setting the stage)
2. Politics, Governance & Power (The foreground)
3. Economy & Industry (The background)
4. Urban Areas (Key role of cities)
5. Water & Energy (Re-engineering the landscape)
6. Environment (Pollution & carbon)
7. Health & Education (Social problems)
8. Inequality & Social Divides (Worse than you think)
9. Challenges Ahead (What editors want....)
10. Data Challenges (Engineer’s delight)
Making an Argument

Building a ‘spread’
- Text, maps, graphics, data

**Income, Wealth, & Poverty**

Income and wealth inequality have grown significantly in the last 30 years, fueled by stagnant wages, rising asset values and corporate pay, as well as federal tax relief for the rich. Poverty is rampant in California despite its wealth and prosperity.

**How California Companies Compare**

<table>
<thead>
<tr>
<th>Company</th>
<th>Inequality</th>
</tr>
</thead>
<tbody>
<tr>
<td>California</td>
<td>High</td>
</tr>
<tr>
<td>USA</td>
<td>High</td>
</tr>
<tr>
<td>Russia</td>
<td>Moderate</td>
</tr>
<tr>
<td>Ghana</td>
<td>Low</td>
</tr>
<tr>
<td>India</td>
<td>Low</td>
</tr>
<tr>
<td>UK</td>
<td>Low</td>
</tr>
<tr>
<td>Australia</td>
<td>Low</td>
</tr>
<tr>
<td>Germany</td>
<td>Low</td>
</tr>
<tr>
<td>Sweden</td>
<td>Low</td>
</tr>
</tbody>
</table>

**Rising Costs, Worker Compensation Rates**

<table>
<thead>
<tr>
<th>Year</th>
<th>Average Cost of Living Index</th>
<th>Peak Average Worker Compensation</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>120</td>
<td>150</td>
</tr>
<tr>
<td>2010</td>
<td>130</td>
<td>180</td>
</tr>
<tr>
<td>2020</td>
<td>140</td>
<td>200</td>
</tr>
</tbody>
</table>

**Weighting Gap Between Rich & Poor in USA**

- Median household income: $68,000
- Top 1% income: $400,000
- Middle class income: $60,000

**Income Inequality in California**

- Inequality in California is among the highest in the country.
- The state's 24% poverty rate far exceeds the US average.

**Increasing Income Inequality**

- The gap between the rich and poor has widened significantly in recent years.

**Poverty Rate**

- By state, 2009-11

**California Works**

- A new assistance and welfare program for the state's needy, based on needs, work rules, and budget constraints.

- A significant majority of the impoverished population is helped by this program.
Shaping a State

- How to capture ideas in maps
  - Uniqueness
  - Comparison
  - Internal divisions
- California’s difficult shape
Flat-Earth fallacy of most atlases

Triumph & fall of the late, great Golden State of California

The Dark Side of the California Dream

Creating A Narrative

- Flat-Earth fallacy of most atlases
- Triumph & fall of the late, great Golden State of California
- The Dark Side of the California Dream
MAKING A CASE

- Constructing chapters in 4-5 spreads
- Key themes moving across spreads
Chapter 1: Land and People

LAND & NATURE

California’s geography sets it apart from the rest of North America. Its natural blessings have been a source of wonder and wealth, its frequent earthquakes a challenge.

California is so distinct in topography, climate and ecology that it has been called “an island in the land”. Facing the Pacific Ocean on the west, it is walled off by high mountains in the north and east and by deserts in the south and southeast. Within that realm lie nine major topographic regions.

Dominating the state’s midsection are three parallel regions: Coast Ranges, Central Valley, and Sierra Nevada. Southern California has three regions, as well: Coastal Plain, Transverse Ranges, and Mojave Desert. The Transverse Ranges run east-west, cutting across the grain of the Sierras and Coast Ranges. Northern California has two subregions: Klamath and Shasta Mountains on the west and the volcanic landscape of the Southern Cascades to the east. Beyond the Sierra, California shares a piece of Nevada’s Basin and Range.

California’s landscape is a creation of the tectonics generated by the collision of the Pacific and North American plates. In the distant past, the Pacific floor dove under the continent, pushing up the Sierra (as it formed the Cascades). Now the Pacific plate slides along the San Andreas fault system, twisting northwest and pushing upward, creating the Coast and Transverse Ranges, and periodically shaking up California’s cities. California has benefited greatly from the gifts of the land: gold, silver, and other minerals left by volcanism and uplift; oil deposits from sea beds driven far beneath the coast; and deep valley soils deposited from ancient mountains.

Vegetation

- Water/wetlands
- Riparian
- Coastal scrub
- Closed-cone coniferous forest
- Pacific coniferous forest
- California grassland
- Oak woodland
- Chapparal
- Lower montane
- Upper montane
- Sub-alpine
- Mountain meadow
- Great basin coniferous
- Juniper pine woodland
- Sagebrush scrub
- Joshua tree woodland
- Desert scrub
- Alkaline seres
- Agriculture
- Urban
- Barren

California occupies one of the five Mediterranean climate zones of the world (wet winters, dry summers). Heavy fog off the Pacific cools the coastal regions from Mendocino to San Diego during the summer. Far Northern California sees the most rain, skin to the Pacific Northwest. In far Southwest California lies desert: the Mojave and pieces of the Colorado and Sonoran zones. The Sierra and northern mountains enjoy heavy winter snowfalls, the southern mountains light dusting.

The state’s flora and fauna are remarkably diverse, combining species adapted to a Mediterranean regime, those tolerant of the extremes of alpine and desert climates, and remnant species from wetter and colder epochs. California has more endemic (unique) plant species than any other part of the continental U.S. Some, such as the sequoias and bristlecone pines, are wonders of the world. Others, such as Monterey pines and California poppies, are common in gardens and plantations worldwide.

Californians have profited from cutting the forests of redwood, fir and pine growing thick along the northern coast and along the mountain ranges, and even more so from farming the broad valleys beneath the sunnier sun. Yet resource extraction left a legacy of ravaged landscapes and agriculture introduced a host of new species that displaced the native flora and fauna. The combination of rare beauty and rampant devastation is key to Californian’s legacy of conservation.
1a. Land in Brief

- Unique natural landscape/biota
- Unique legacy of public lands
  - Politics of land

But the point is still to get to the people
From the fate of the native peoples

**COLONIALISM & NATIVE CALIFORNIANS**

Native Californians arrived more than 10,000 years ago. They lived in families and clans of exceptional diversity, speaking 100 languages and 300 dialects. They prospered on the abundant wildlife, which they managed through seed collection, land-clearing fires, and fish ponds. Their numbers reached perhaps 300,000 in pre-Colonial times, the largest concentration north of the Valley of Mexico, but unlike the Aztecs they did not form nations. The Spaniards reached California in 1542, but left it alone until their empire was threatened in the late 18th century by British, French, Russian, and American expansion. The Christianizing Missions founded by Father Junipero Serra, where natives were forced to live and work, brought devastation through disease and destruction of past ways of life. Native numbers fell by one-third to one-half, especially along the coast.

The Mexican era after 1821 brought new trials to people further inland and northward. Mexican rancheros exploited the natives as indentured labor, while building a trade in hides and tallow. Again, thousands of the natives perished. The Mexican-American War in 1846-47 brought California under the sway of the US, which annexed the northern half of Mexico in 1848. Following this, the Gold Rush drew in some 300,000 fortune seekers. Miners oversaw the last mountain redoubts of the native peoples, and many were enslaved. Nowhere were American Indians treated worse. The first governor, Peter Burnett, called for the extermination of native tribes, a task aided and abetted by state militias. California opposed Indian Reservations and federal agents were notoriously corrupt, leaving most native people landless and scattered. There are over 100 recognized tribes in California, but most bands never reestablished lands other than they rancheras.

The population of Native Americans fell to a low of 15,000 by 1900, then started a slow recovery, often through mining, with the conquering people. Estimates depend on the criteria for inclusion, but have increased rapidly since 1950. Before that, many did not want to identify as a disparaged people but with the rebellions of the 1960s native heritage became a source of pride, swelling the census count. In addition, Native Californians migrated to the cities, where they were joined by tens of thousands of American Indians from around the west, forced from reservations by poverty and the federal decimation of tribes. By 1970 they were outnumbered by new immigrants, and numbers were climbing fast. The urbanization and mixing of tribes gave rise to the American Indian Movement, ignited when young militants seized Alcatraz in 1969 and proclaimed it liberated territory. Today, there is a renewed pride in learning native languages, crafts, and culture.

The legalization of native-name casinos, over 60 in 2014, has earned more than $7 billion. The income has been used to improve housing, restore tribal lands, and improve education, but has led to disputes over tribal membership. After 200 years of oppression, Native Americans are still struggling to preserve their identities and culture and finding it an uphill task to attain the same level of education, health, and liberties as other minorities do.
1b. A State of Migration

- Through waves of migration
To unauthorized migrants
• The point is that the people are California’s greatest resource, regardless of origin.
Chapter Three
ECONOMY & INDUSTRY

California is one of the world’s economic success stories, having every advantage and making the best of them. It entered the modern world bearing gold and has profited from an abundance of natural riches. But what counts is that Californians have continued to spin new forms of gold from investment, innovation, and opportunity for millions of people.

Technology and how to win in the arena of global competition are the hot topics in contemporary discussions of economic growth, and no place is better known for its high-tech industries than California, particularly Silicon Valley. It continues to spawn earth-shaking technologies, from medical instruments to social media, and to pull great minds into its gravitational field, where their chances of success are the greatest.

With rapid economic growth and innovation, California has gestated thousands of new businesses and supported the expansion of successful companies. In older lines are such behemoths as Chevron, Disney, and Hewlett-Packard, while recent high-tech companies like Apple, Google, and Twitter have taken the world by storm. California is still where eager entrepreneurs flock to from the four corners of the world to find investors willing to launch new ventures.

Yet, despite the attention to technology and entrepreneurship, the foundation of California’s economic prosperity has been its labor force. This term conjures up visions of blue collars and factories, but it includes a wide spectrum of workers—from offices and laboratories to building sites and fields. California has never been a classic industrial state, and it has been repeatedly blessed with infusions of large numbers of well-educated and skilled workers, as well as millions of ordinary folk willing to work hard to achieve their dreams.

Agriculture has been one of California’s crown jewels, and it reveals better than any other sector the paradoxes of the state’s good fortune. It has turned good soil, water, and sunshine into a profusion of crops and a powerful array of products reaching markets far and wide. Here, agriculture became agribusiness and drove productivity to unseen heights, just like any other industry, but it exploited immigrant farm workers with a ferocity greater than that of any other sector.

But the California economy has not been performing as well as in the past, despite the recent glories of high tech and movie making. Growth has hit some nasty bumps in the road and slowed up badly in the 2000s. This has left too many workers unemployed and underpaid, governments short of revenues, and businesses stumbling, and underpin a host of other misfortunes affecting the Golden State.
3a. Economic Powerhouse

How to make a mighty economy visual?
3b. People as Workforce

**WORKFORCE**

California’s prosperity has been built on its workforce, both in numbers and quality. Labor demand and supply, skills, and wages have long exceeded the national average, fueling the state’s remarkable growth.

**AVERAGE WEEKLY WAGE**

<table>
<thead>
<tr>
<th>State</th>
<th>Average Weekly Wage</th>
</tr>
</thead>
<tbody>
<tr>
<td>New York</td>
<td>$1,315</td>
</tr>
<tr>
<td>Washington, D.C.</td>
<td>$1,171</td>
</tr>
<tr>
<td>Massachusetts</td>
<td>$1,168</td>
</tr>
<tr>
<td>New Jersey</td>
<td>$1,047</td>
</tr>
<tr>
<td>California</td>
<td>$1,029</td>
</tr>
<tr>
<td>New York</td>
<td>$1,029</td>
</tr>
<tr>
<td>Illinois</td>
<td>$829</td>
</tr>
<tr>
<td>US average</td>
<td>$704</td>
</tr>
</tbody>
</table>

**Mississippi** | $563

**UNION MEMBERSHIP**

<table>
<thead>
<tr>
<th>State</th>
<th>Membership 2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minnesota</td>
<td>25,300</td>
</tr>
<tr>
<td>Massachusetts</td>
<td>6,600</td>
</tr>
<tr>
<td>New York</td>
<td>92,400</td>
</tr>
<tr>
<td>Ohio</td>
<td>478,400</td>
</tr>
<tr>
<td>Michigan</td>
<td>959,700</td>
</tr>
<tr>
<td>Pennsylvania</td>
<td>5,600</td>
</tr>
<tr>
<td>Illinois</td>
<td>1,012,000</td>
</tr>
</tbody>
</table>

**Labor Force Growth**

California compared to USA 1971–2011

California’s mix of jobs reflects its economic complexity and richness. Several of the fastest-growing occupations cluster in healthcare, technology, and management, including home-health aides, paralegals, biochemists, nurses, database administrators, software developers, and marketing analysts. The demand for low-skill labor in restaurants, home care, sales, and office work is projected to be robust due to the high rate of retirement of baby boomers, and growth in retail, personal services, and business services.

Over 2 million California workers belong to unions. Unionization in California, as in the USA, has been falling for several decades, but has always stood above the national average and has held steady in the last decade. The strength of the union movement today lies in the healthcare and public sectors, where workers were not allowed to unionize until the 1960s and are under political pressure today.

**ECONOMY & INDUSTRY**

**HOW CALIFORNIA’S WAGES COMPARE**

Average weekly wage compared to US average 2011, 4th quarter

- 30%–54% lower
- 25%–29% lower
- 15%–19% lower
- plus or minus 10%
- 15%–19% higher
- 20%–29% higher
- 63%–92% higher

**LABOR FORCE**

Number in each country 2011

- 1 million or more
- 500,000–999,999
- 250,000–499,999
- 100,000–249,999
- fewer than 100,000

**Unemployment**

- 15% or more
- 12%–14.9%

**OCCUPATIONS WITH MOST JOB OPENINGS**

2010–20 projected

- high-skilled
- low-skilled

- Computer & Mathematical Occupations
- Healthcare Practitioners & Technicians
- Education, Training, & Library
- Legal
- Physical Science
- Life Science
- Architecture & Engineering
- Business & Financial Operations
- Community & Social Services
- Transportation & Material Moving
- Protective Service
- Food Preparation & Serving
- Building & Grounds Cleaning & Maintenance
- Office & Administrative Support
3c. Roots of Success

- Gifts of nature
- Powers of labor
- Continuing innovation
• A diverse economic foundation

• Struggling with the census
3e. Signs of Stress

- Outsourcing & importing
- Labor force & unemployment
- Sinking productivity & wages
Chapter 4 – Urban Areas

The Bay Area

San Francisco has long been world famous, but it is today part of a large, complex urban region: the Bay Area—high-tech capital of the world and richest big city in the country.

The Bay Area is the most complex urban region in the US, with three big cities and four subregions: San Francisco/West Bay, Oakland/East Bay, South Bay/Silicon Valley, and the North Bay. It is often underestimated by counting only the five-county San Francisco-Oakland metro area (population 6.3 million), not the full nine-county Bay Area (7.2 million). To compound things, San Jose has passed San Francisco in size—a unique inversion of urban primacy.

San Francisco came out of nowhere in the Gold Rush to become an international icon and the 10th largest US city by 1870. It stood alone as the capital of the Pacific Coast in the 19th century and remained the commercial and financial heart of the West until the mid-20th century, despite challenges from Seattle and Los Angeles. By 1950, Oakland had become the fastest growing part of the Bay Area, giving the region twin cities. After World War II, San Jose morphed into Silicon Valley, and the Bay Area became the only three-headed metropolis in the country. The outer East Bay and North Bay took off after 1975, and urban growth has been spilling outward ever since. Today’s megalopolis stretches 100 miles in every direction, merging with Sacramento and Stockton into an urbanized region over 10 million strong.

A regional manufacturing base developed around metals and machining, lumber, ships and vehicles, and food processing up to 1950. By 1975, the Bay Area had become the high-tech capital of the world, a cluster that today focuses on information technology: business software, internet equipment, security, games, and social media. The area also hosts the nation’s chief concentrations of biotechnology and medical equipment, and the high-tech cluster is backed up by premier universities and medical schools at Stanford and the University of California.

The social character of the Bay Area is distinctive: evenly split between Whites and people of color, and with the highest concentration of Asians of any US urban region (almost one-quarter). High-tech rests on a large concentration of professional and technical workers, featuring the second-highest percentage of college graduates of any US city. Regional leadership in innovation draws great minds from around the world, and over half the high-tech startups in recent years were created by Chinese and Indian immigrants.

Economic success generates great riches, as well per capita, the Bay Area is the wealthiest big city in the country, measured by income, assets, or concentration at the top (such as billionaires in the Forbes 400). At the same time, the region has many less fortunate residents, including large communities of Filipinos, Mexicans, Chinese, and Vietnamese. With the highest housing and living costs of any US metro, the Bay Area has pushed thousands of working people to the far suburbs.

In wealthy San Francisco, gentrification has transformed the face of the city, especially its southeastern neighborhoods, leaving the lowest percentage of African Americans of any major US city.
4a. What is a City?

• Municipality, metropolis, and megapolis
  • Problems of the census definitions
4b. Booming Cities

- Key role of urban economies
- Cities of corporations
4c. Expanding Cities

- Rapid growth outward
4d. Rising Cities

- Densification & gentrification
4e. Colored Cities
4f. Unjust cities

- Race & Class Geography of the Cities