

The settlement of San Francisco and the Land Use Changes in the Bay Area

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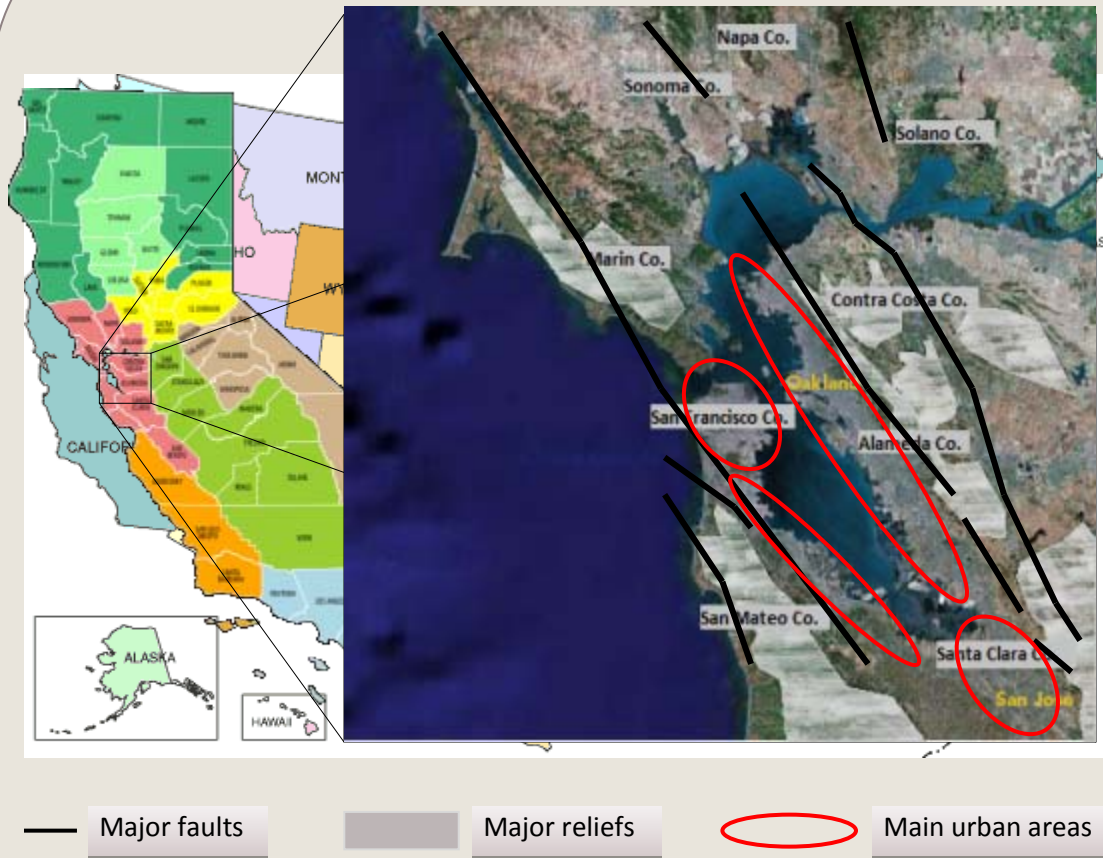
Outlines

San Francisco and its environmental setting

History of the SF Bay area urbanization

Factors of land use changes

Environmental Setting



- Nine counties
- 5th most populous metropolitan area in the U.S.
- 4.4 million acres

The SF Bay area and its environmental setting

Source: USGS, 2002

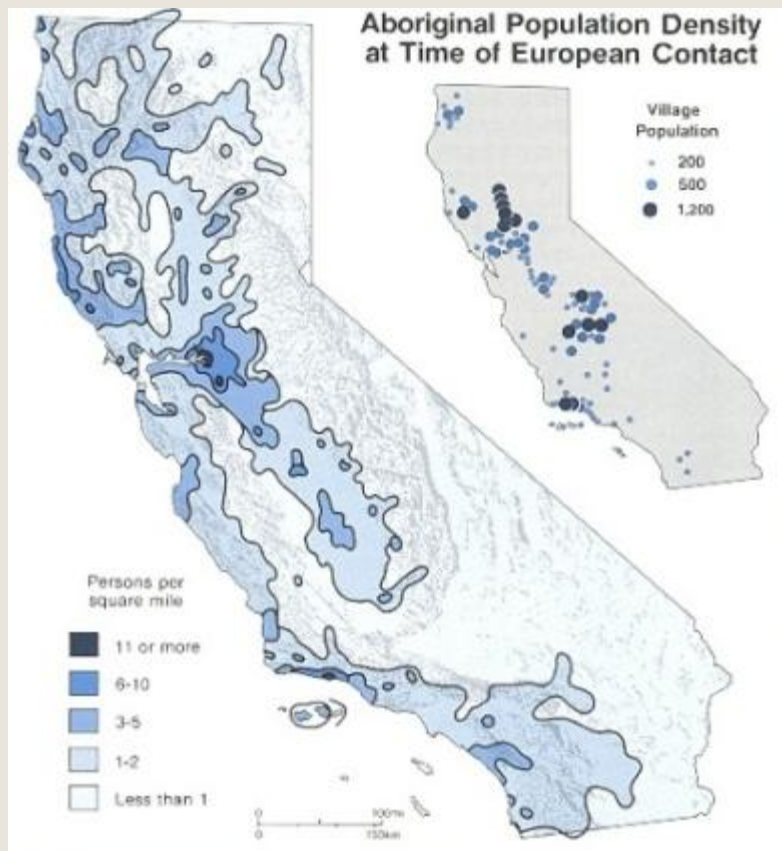
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Pre-Hispanic period



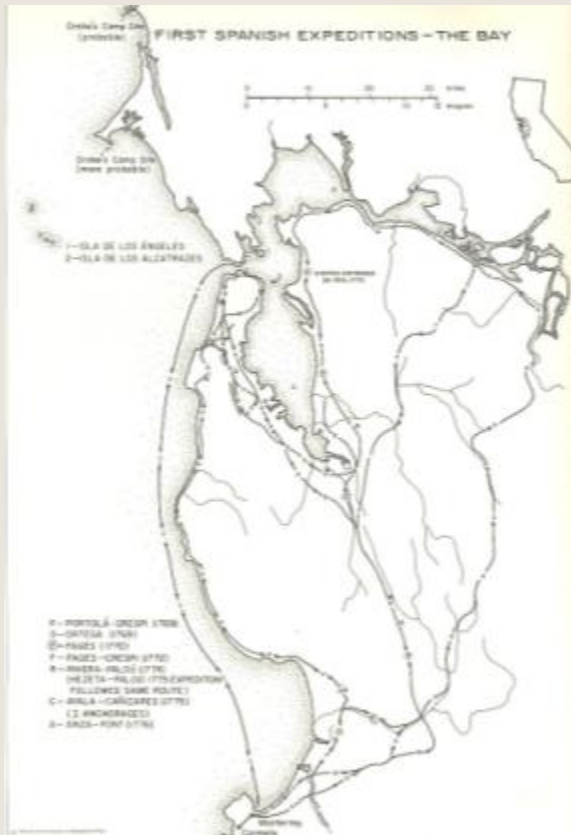
California's native population density
Source: Hornbeck, 1983

- Indians population in the 18th century = between 275,000 and 500,000
- 20,000 people lived in the San Francisco Bay Area

Before 1800s:
Natives



Hispanic Settlement



First Spanish explorations in the SF bay
Source: Beck, 1974

- San Francisco Bay was discovered in 1769
- 1775 = extensive nautical survey of the bay
- Agriculture based on mixture of wheat, maize, and barley
- Trade opened the land to the American adventurers

Before 1800s:
Natives

1769: SF bay
discovery



The American California



The harbor of San Francisco in 1864
Source: Gifford, 1864

- 1848 = gold discovery
- Population increased tremendously and the urbanization of the region started

Gold Rush = the first great input towards the development of roads, the growth of freighting and express companies, and the emergence of a stage coach system

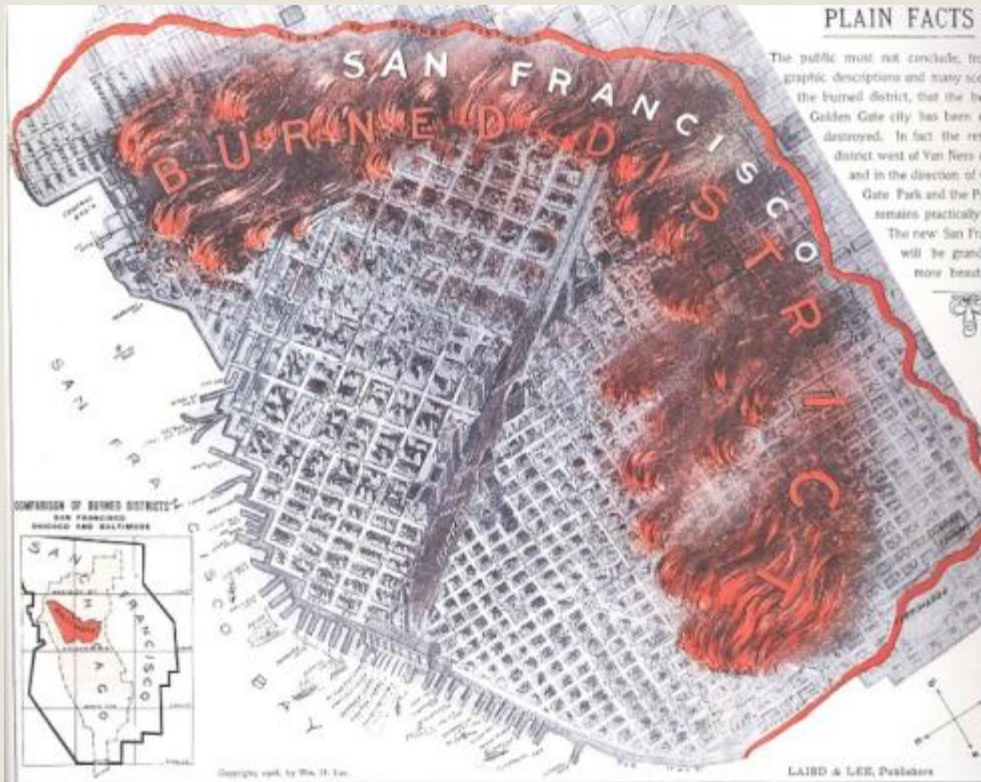
Before 1800s:
Natives

1769: Discovery
SF bay

**1848: Gold
Rush**



The Earthquake of 1906

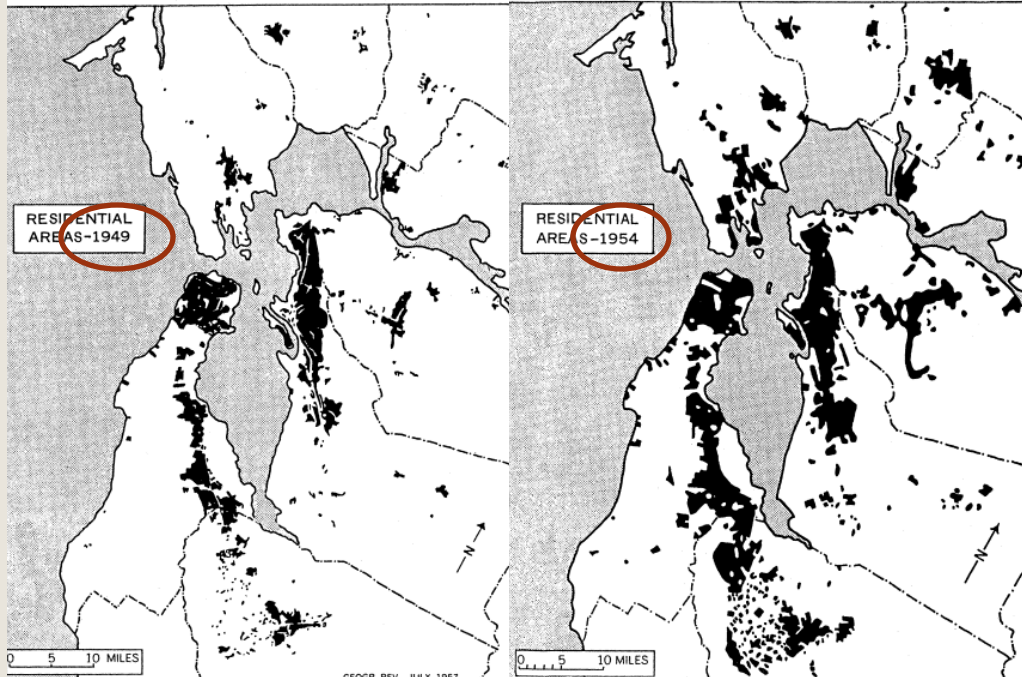


Map of the burnt areas in SF after the earthquake of 1906
Source: Cameron, 1980

- Destruction of 5,000 buildings and roads, railways, sidewalks, gas, water, and electric lines
- 25 years of subsequent rapid rebuilding



Modern medium-rise city



The expansion of the residential areas, 1949-1954
Source: Young, 1957

Urban development

- Growth southward along major transportation routes
- Change from agricultural to residential subdivisions

Industrial development

- East and South with a focus for water and rail transportation facilities

Before 1800s: Natives 1769: Discovery SF bay 1848: Gold Rush 1906: Earthquake 1950: Modern city

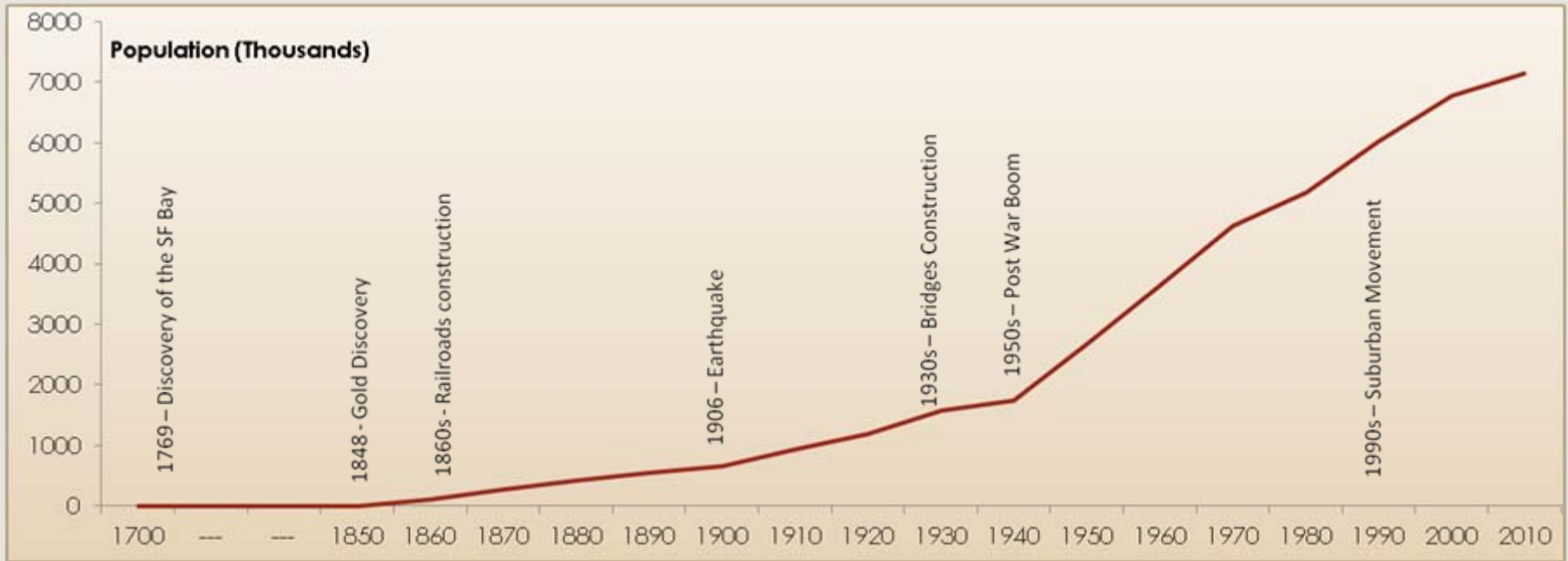
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Population Growth



Timeline of the population evolution and the main events in the SF bay area

Source: Census of Population

The disparity of the people distribution is a result of the climate, topography, and natural resources.

Urbanization



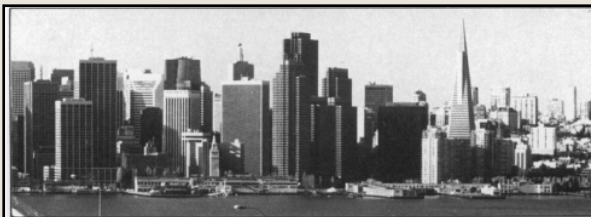
1915



1958



1972



1992

Changes in the Skyline of San Francisco, 1915 to 1992

Source: Godfrey, 1997

- Gold Rush: creation of towns
- 1870s: integrated network of towns
- Before 1950: development in the central bay area
- After 1950 = Population shifted to the South and East

SF Bay discovery

1769

Gold Rush

1848

Industrial Development

1950

Suburban squeeze

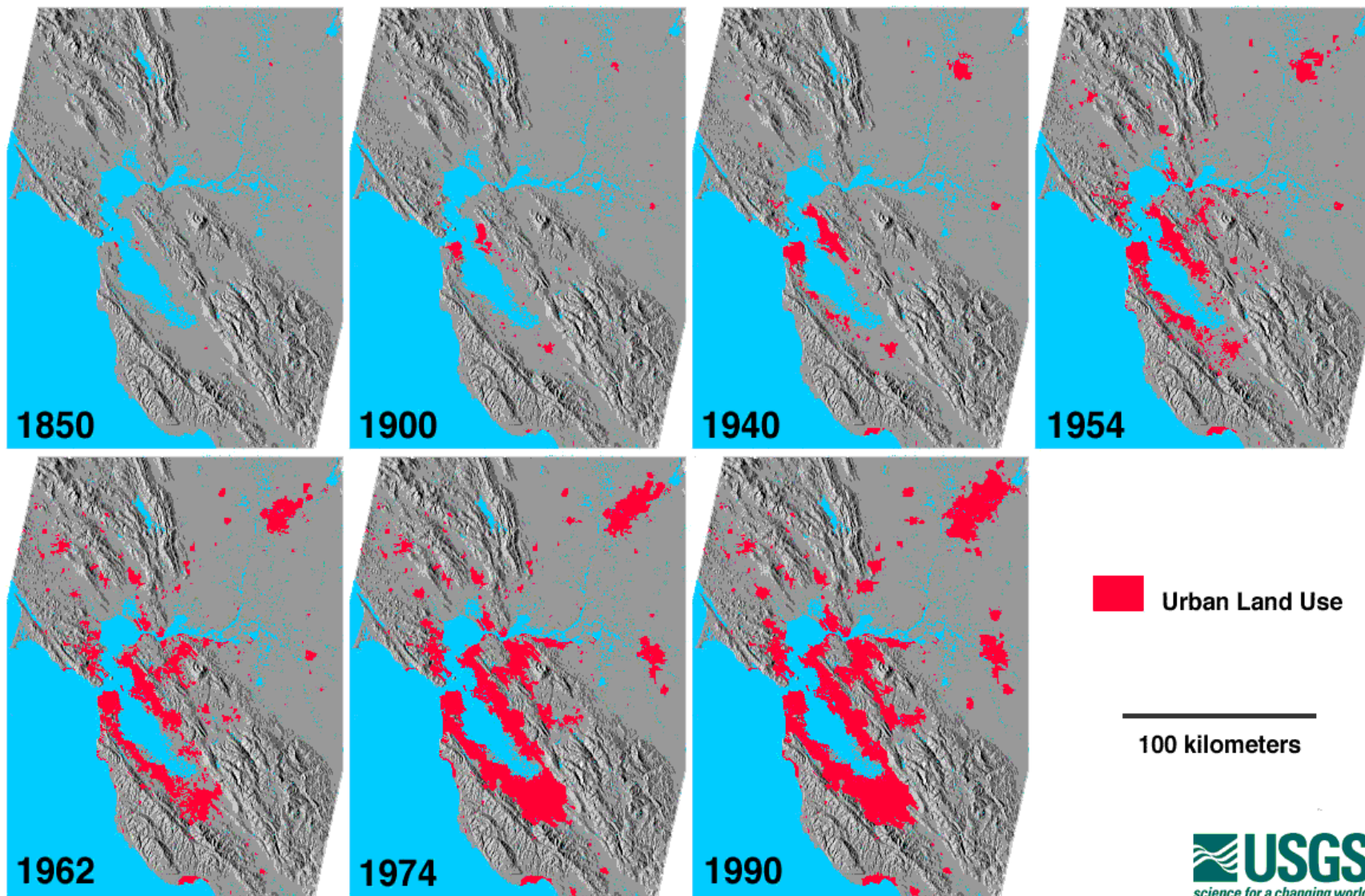
Natives

Hispanic

American California

Earthquake and reconstruction

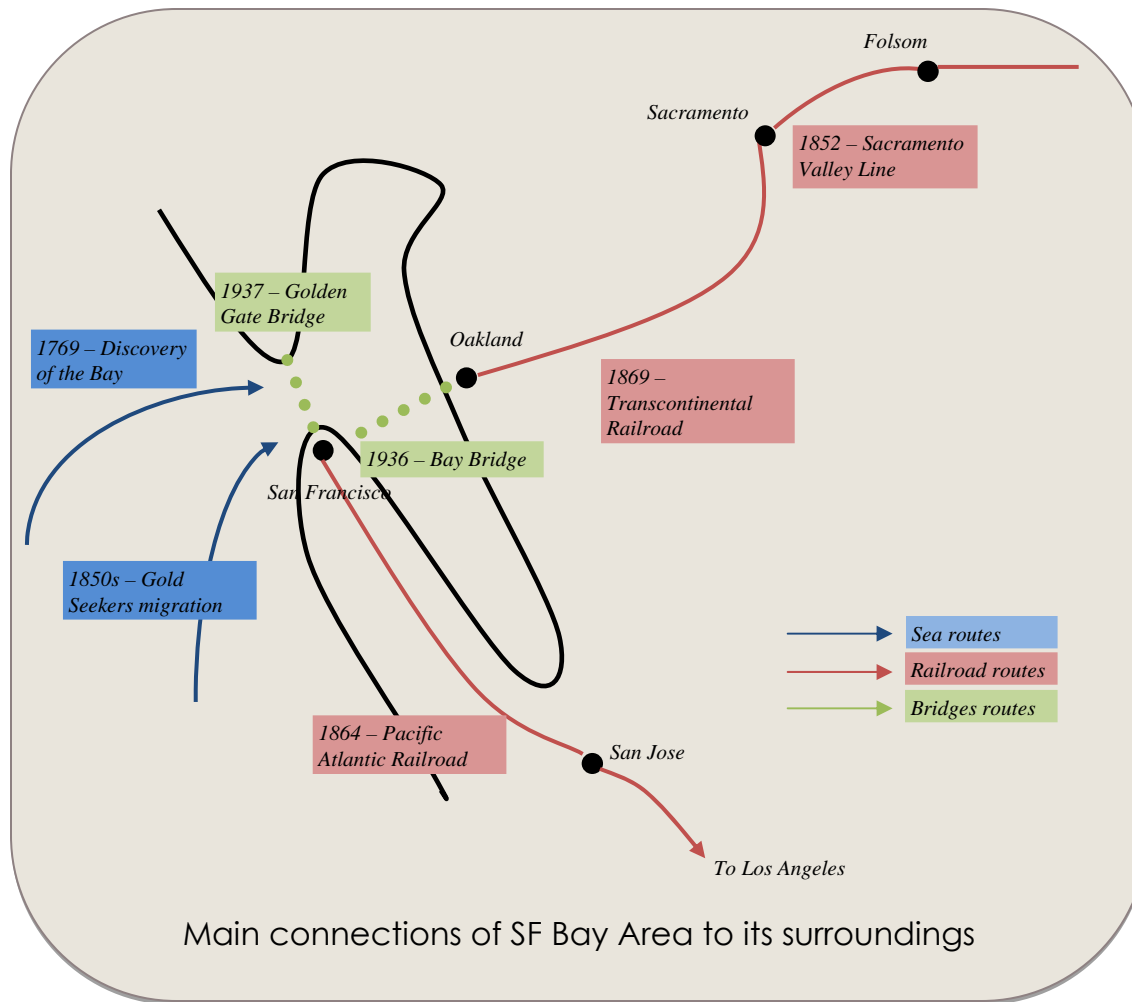
Modern city



Evolution of the urban land use in the SF bay area

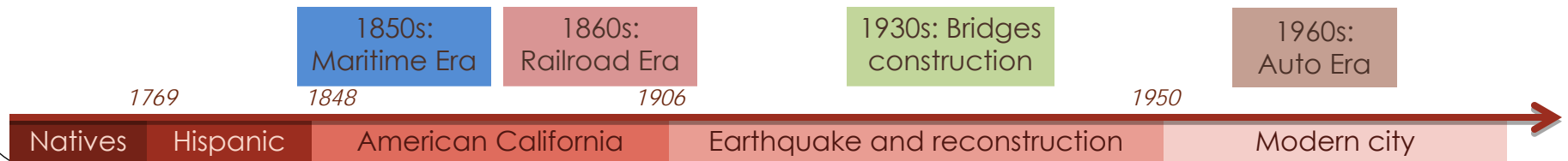
Source: USGS

Transportation

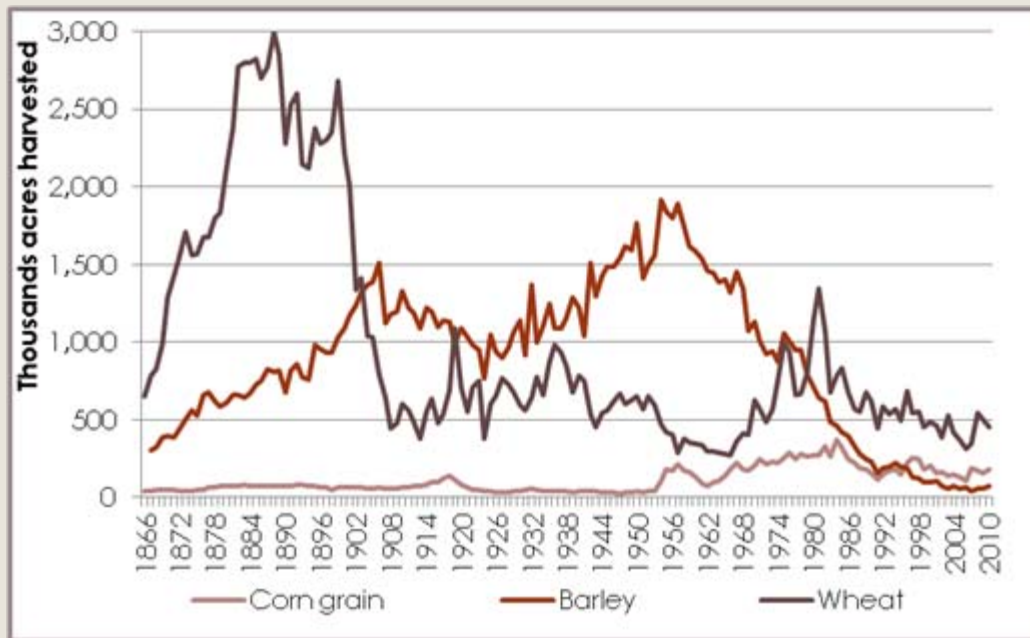


→ Railroads helped establish towns and settlements

→ Before completion of bridges, SF Bay was an obstacle to transportation



Agriculture



Evolution of some agricultural commodities in California, 1866 to 2010

Source: *Census of Agriculture*

- After Gold Rush = cattle
- 1860s = shift to commercial grain

Between 1872 and 1884, California was one of the nation's leading wheat producers

- Early 1900 = shift from an extensive livestock grain farming to diversified, intensive specialty crop farming

The land competition due to the urbanization led to a decline in farmlands

1850s: Cattle Raising

1880s: Wheat Boom

1900: Specialty Crop

1769

1848

1906

1950

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Vegetation Cover

Initial pattern

- Redwood forests along the coast
- Grass and oak savannah, eastward of the Sacramento Valley
- Low growing chaparral in the interior ranges and in the dry southern slopes,
- Marshes and tule rushes fringing the Bay

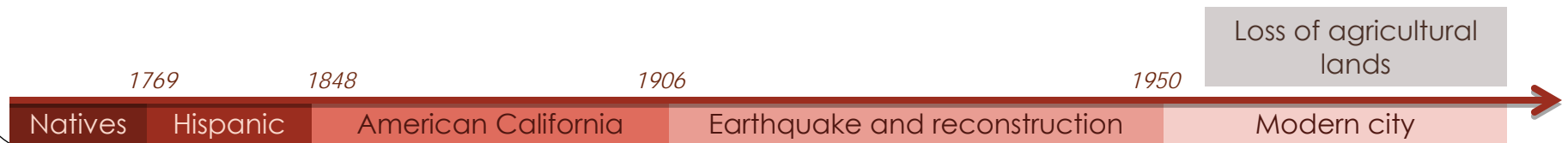
Changes

forest → grass, brush, or crops;

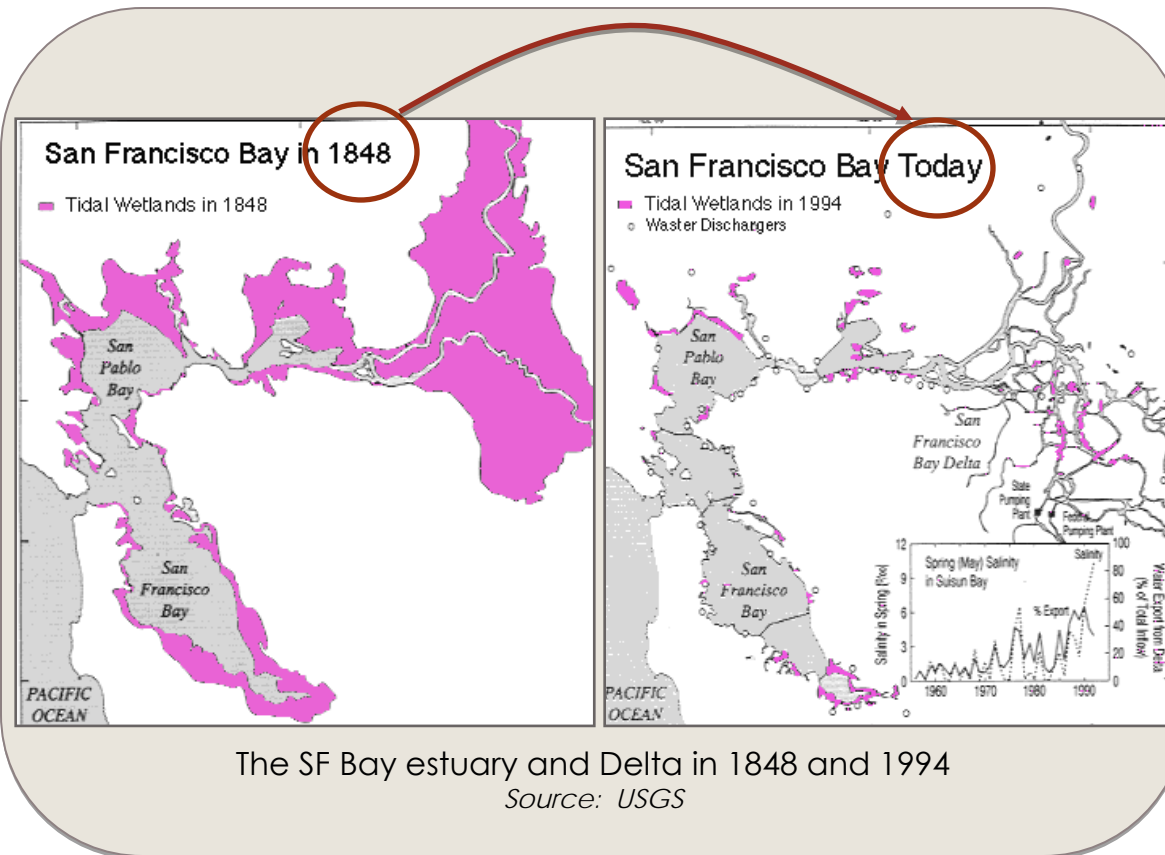
grassland → cultivated lands,

savannah → perennial grasses (wild oat, a Spanish importation)

The urban environment has rapidly expanded on rangeland and agricultural areas



Water Issues



Loss of 95% of the estuary's wetlands since 1850

→ 1931= the Tuolumne River in the Hetch Hetchy Valley of Yosemite National Park

Urbanization led to:

- loss of wetlands,
- alteration of freshwater inflows,
- contamination of water, sediments and biota,
- declines of fish and wildlife species

1931: Hetch Hetchy Aqueduct

1769

1848

1906

1950

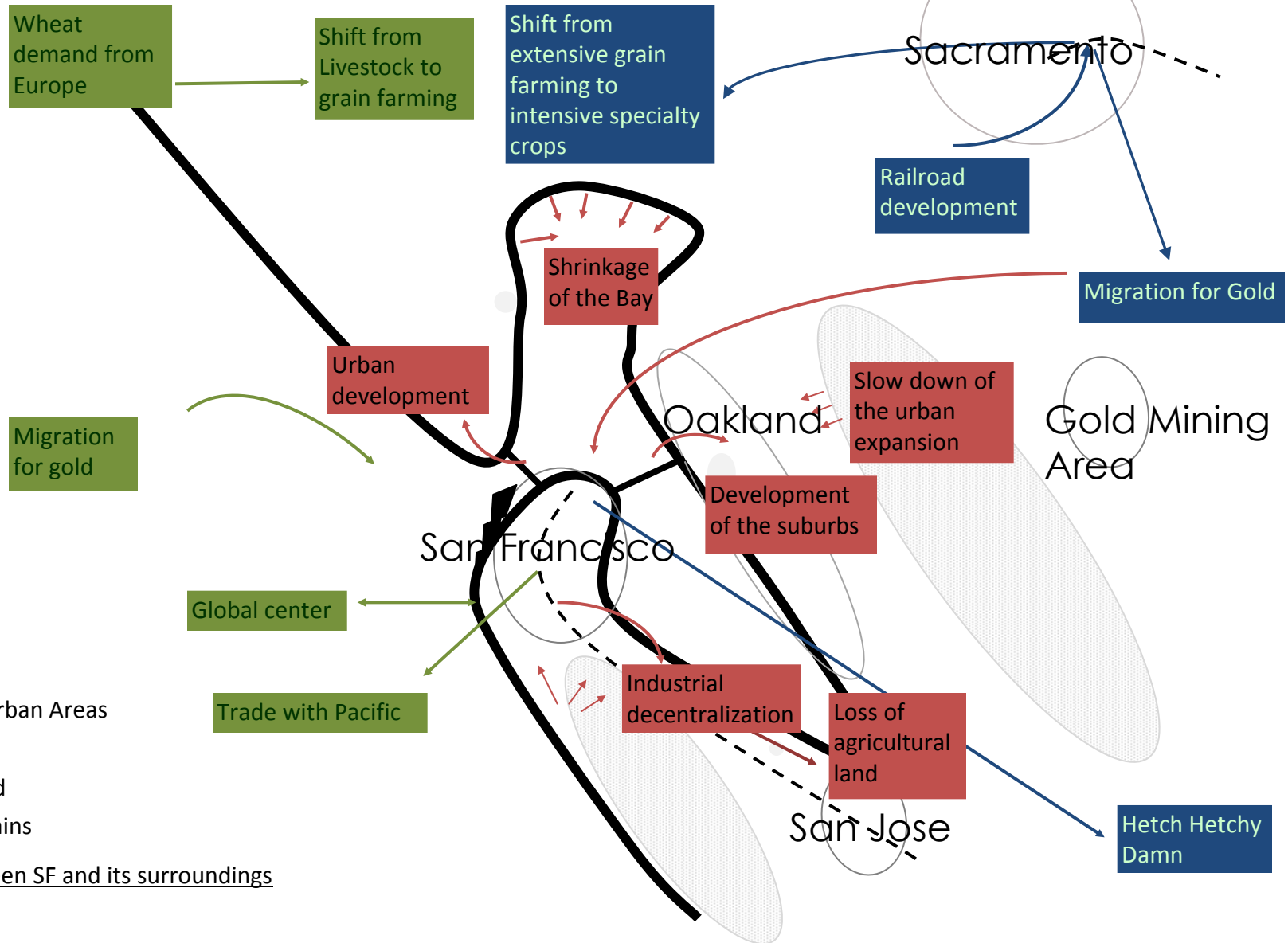
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Representation of the level of interactions between the urbanization of SF and its surrounding environment

Conclusion

Over the next 25 years, the nine counties of the Bay Area are expected to add a total of 1.6 millions new residents.

The region will face the challenges of serving this growth with an efficient transportation system and balancing it with the conservation of open space and agricultural lands.

The Bay Area will also have to face the challenge of the sea level rise, that could have a profound impact since more than 200 square miles of low lying land borders the Bay.

Thank you for your attention

