



Urban Dynamics: San Francisco Bay Region

Like many other large metropolitan areas the San Francisco Bay Region is faced with urban sprawl, loss of natural vegetation and open space, and a general decline in the spatial extent and connectivity of wildlands. The proliferation of housing and commercial development has impacted the region's agricultural lands, wetlands, and wildlife habitat.

Understanding how land-use changes can affect water quality, fragment ecosystems, restrict supplies of natural resources, and aggravate traffic congestion is essential for creating efficient, enjoyable, and ecologically sound communities. Residents and policymakers are voicing increased concern over the effects of unchecked urbanization in the area. Sound spatial and temporal data about land-use

change are needed to help resolve the complex problems associated with urban expansion.

This project will enhance understanding of land-use changes in the San Francisco Bay region. In addition, this work will provide the general public and policy makers with the earth science information needed in making sound decisions regarding future development and environmentally-sustainable economic growth.

The initial San Francisco study focused on temporal geographic information system (GIS) development. Participants developed procedures for interpreting, extracting, and compiling source information from historic maps, census statistics,

commerce records, remotely sensed data, and digital land-use data. They also researched quantitative descriptions of patterns, trends, and rates of urban development in the region.

This study is a joint activity between USGS and University of California at Santa Barbara.

Customers include Greenbelt Alliance, Association of Bay Area Governments, Santa Clara Valley Water District, Joint Venture: Silicon Valley Network, regional newspapers, and regional television stations.

For more information:
<http://edcdgs9.cr.usgs.gov/urban/>