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It's the Land Use, Not the Fuels: Fires and Land Development in Southern California

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INTRODUCTION

Southern California continues to be one of the fastest growing regions in the United States, adding two million new residents since the 2000 census. The single-family housing market in southern California has been a juggernaut of land consumption, effectively overwhelming land-use planning and historically ignoring the dangers of highly combustible landscapes and the inevitable firestorms created by the high winds that occur every fall. The prevailing patterns of land use—single-family homes, master planned communities, and large-lot ranchettes—expanding into naturally fire-prone ecosystems—create a volatile mix. The lack of understanding of chaparral ecosystems and the role of Santa Ana winds in fire behavior, and the underlying fiscal and regulatory factors supporting the land use patterns in southern California (and the rest of the

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state), stand in the way of the changes needed at multiple levels to address fire hazards in the region's built environment.

This paper, a collaborative effort between ecologists, urban planners, and habitat preservation advocates, examines the dynamic and complex interaction between land use decision-making, fire regimes, and ecosystem decline. It is organized in the following way: a brief discussion of recent fire history in southern California, the science of fire regimes in chaparral ecosystems, an overview of the evolution of land use regulations, pressures and politics in California and in the southern part of the state, existing fire policy and regulations, and the policy choices that result from these factors.

We take as our theoretical perspective for the analysis of land use in southern California urban regime theory that posits a very strong relationship between local decision-makers and economic interests. This relationship, dubbed by Logan and Molotch as the urban growth machine,¹ is one in which for local government, land is the principle asset through which elected officials shape the character and revenue stream of the locality. It relies on coordination and planning with local business interests whose activities on the land create local wealth, through both taxes and fees, but also jobs and prosperity. The present workings of local institutions are characterized by a close relationship between politicians and businessmen to enhance both the public and private commercial interests of localities.²

OVERVIEW OF THE FIRES SINCE 2000

Since 2000, large fires have consumed 2.2 million acres of southern California vegetation. The 2007 October wildfires burned 510,000 acres of southern California, causing over \$1.5 billion of structural damage in just eight days. They came just four years after the largest fire event recorded in California's history burning 742,000 acres in multiple fires throughout the region.³ The 2003 fires destroyed 3,361 homes and cost 26 lives, while the 2007 fires destroyed more than 1,600 homes and were responsible for the largest evacuation in the history of California.⁴

Since 2001, the fire management allocations in the United States Forest Service (USFS) have exceeded other management activities, and much of this goes to protecting private property at the wildland-urban interface.⁵ In southern California and a growing number of other regions in the United States, protection of structures has become the primary activity of wildland fire agencies. The scattered patterns

of suburban and exurban land development have placed an exceptionally large number of homes at risk, creating an ongoing debate about the wisdom of housing construction in flammable landscapes. In the 2003 Cedar Fire, 30,750 homes were within the fire perimeter, and over 10% of these homes burned.⁶

CHAPARRAL AND MEDITERRANEAN ECOSYSTEMS

Despite extensive urbanization, much of the area of southern California remains covered by natural or semi-natural vegetation, with evergreen shrublands of chaparral as the dominant form of community. Also present in the coastal areas and foothills are drought-deciduous shrublands of sage scrub, evergreen and deciduous oak woodlands, riparian woodlands, and non-native annual grasslands. Forests comprise less than 10% of the wildland vegetation and are restricted to higher elevations in the Transverse and Peninsular mountain ranges in Southern California. The distribution and composition of plant communities is determined by the amount and seasonality of available water, temperature conditions, and light. These factors, in turn, are influenced by elevation, aspect, slope, soil type, proximity to the ocean, and fire history.⁷

The southern California fires of 2003 and 2007 burned largely through shrublands of chaparral and sage scrub. Despite a widespread public perception that these were forest fires, coniferous forests comprised only about 5% of the total acreage burned. This is an important distinction as chaparral and sage scrub support intense crown fires that consume all of the above ground biomass. In contrast, fires in coniferous forests of California historically supported lower intensity surface fires that burn through litter and understory plants but commonly leave canopy trees unharmed.⁸

Large, fast-moving, high-intensity wildfires are a recurring phenomenon on southern California landscapes. Understanding their causes is a critical first step to any strategy aimed at reducing community vulnerability to these events. Such fires are not new to this landscape. What has changed today is neither the size nor the intensity of fires but rather the size and distribution of the human population across the landscape in this region.⁹

Despite a policy of fire suppression, we have never been able to exclude fire from chaparral¹⁰ in contrast to our coniferous forests, where fire suppression has been relatively effective.¹¹ The shrubland areas of southern California have faced an ever-increasing number of human-caused

fires that has paralleled population growth in the region.¹² The primary reason that fire exclusion has not been possible in chaparral is the annual autumn occurrence in southern California of periods of gale-force Santa Ana winds that produce extreme fire-weather conditions.¹³

Southern Californians often dismiss chaparral and sage scrub ecosystems as valueless and unattractive scrub. Land use planners tend to use terms like *vacant* or *unoccupied* in county and city general plans. Chaparral is often referred to as "brush" or "decadent vegetation." However, these shrub land communities are actually characterized by high biodiversity and relative to other communities have a disproportionately high number of rare and endangered species,¹⁴ contributing to southern California's status as a hotspot for biodiversity.¹⁵ Shrub communities also play an essential role in watershed protection, with root and aboveground morphology that protect steep slopes. Clearing this vegetation for housing or fuel breaks typically accelerates soil erosion and instability, which can cause catastrophic slope failures and debris flows.¹⁶

Although shrubland ecosystems are resilient to a wide range of fire regimes and intensities, unnaturally high frequencies of repeat fires can eliminate long-lived woody species that require fire-free periods for successful maturity to reproductive age or that must resprout after fire from stored carbohydrates in woody root crowns.¹⁷ Large areas of what were once chaparral and sage scrub shrublands have been converted to alien grasslands by short intervals between fires. These alien grasslands provide highly flammable flash fuels, which create feedback loop causing increased fire frequencies.¹⁸

LAND USE IN CALIFORNIA

California has had to contend with tensions about where intense population growth should be accommodated for decades. Protection of biodiversity and agriculture, concerns about traffic and quality of life, and the impacts of urbanization have been debated since the late 1950s with little or no regulatory success in setting firm guidelines for the location of development.¹⁹ The recent catastrophic fires in southern California have, again, raised concern about growth on the wildland-urban fringe. How to address this issue remains as difficult as ever. Incentives for building outside of existing urban areas seem to have gotten stronger over time due to a number of interacting forces:

- Home rule and the need of local officials to ensure sufficient revenue to their budgets;
- Land use controls and determinations made by local elected city councils and county supervisors;
- Continued population growth;
- Severe revenue constraints at the local level ushered in by the 1978 passage of Proposition 13, and the 1996 passage of Proposition 218;
- Relatively inexpensive land at the urban fringe, and a host of direct and indirect incentives for development that operate at multiple levels;
- The Endangered Species Act;
- Strong ties between the development industry and local elected officials fostered by need of local officials to raise campaign funds.

Home Rule

Just like nearly everywhere in the United States, land use designations are a local prerogative, delegated from the state to the local level under the principles of Dillon's Rule.²⁰ Other than Oregon, which has a strong state land use planning framework that was created to preserve agricultural land and open space and to concentrate urbanization, most states, including California, regulate land at the local political level. Land use determines a city and county's fiscal, racial, economic, and cultural profile. In California, numerous attempts to coordinate, manage, or control growth through state-level policy have all been defeated through the concerted efforts of the California League of Cities, the California State Association of Counties, the California Chamber of Commerce, and multiple development and real estate industry interests.²¹ Controlling growth and development at the local level has had limited success.

Growth in Southern California

Between the 2003 and 2007 fire events, about 200,000 additional homes were built in the wildland-urban interface. As the following chart shows, the region has experienced dramatic population growth in the past decades. An additional 96,000 homes are in the planning stage for Los Angeles and Orange Counties on land designated as high risk from wildfires.²² The San Diego Building Industry Association projects the need

for approximately 18,000 to 20,000 new residences per year to meet housing needs fueled by growth in population.²³

Figure 1²⁴

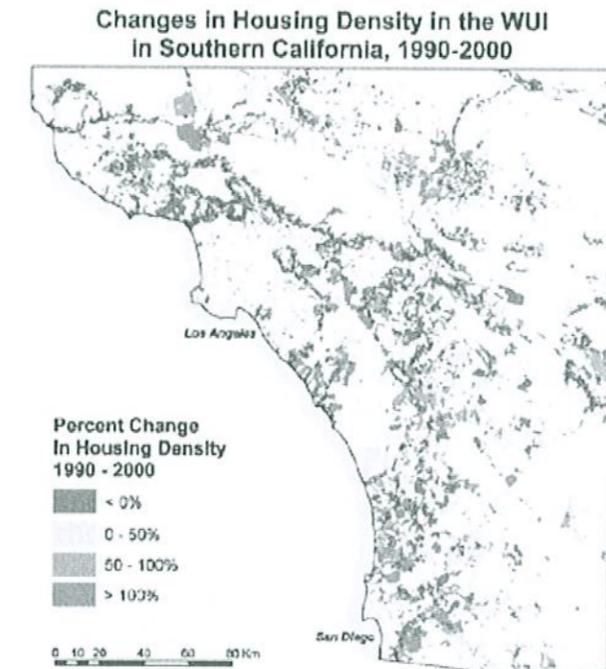


Types of Growth

There are two types of growth outside the city itself, one is through accreted development at the urban fringe, extending the urban-wildland interface. The second is large-lot housing development (one acre or more) in wildland areas, creating a fragmented natural landscape. Growth in large-lot developments with one acre or greater lot sizes in the U.S. has accelerated through periods of both prosperity and recession since 1970. The largest lot-size category (10 to 22 acres) accounted for 55% of the growth in the housing area in the U.S. since 1994, and lots greater than one acre accounted for over 90% of land for new housing. About 5% of the acreage used by houses built between 1994 and 1997 was for existing farms and ranches, and 16% was in existing urban areas within Metropolitan Statistical Areas (MSAs) defined by the U.S. Bureau of the Census. Thus, nearly 80% of the acreage used for recently constructed housing—about two million acres—is land outside urban areas or in non-metropolitan areas. Almost all of this land (94 %) is in lots of one acre or larger, with 57 % on lots of ten acres or larger.²⁵ While we do not have the exact

figures of this process in southern California, the following map shows the extent of far-flung development in the past years.

Figure 2 1990-2000 Wildland-Urban Interface Change in the U.S. West Coast²⁶



Based on county GIS data, there are at least 200,000 homes in the ex-urban area of southern California, and another 800,000 in suburbs adjacent to wildlands, demonstrating that southern California has evolved to have thousands of miles of edge between houses and flammable vegetation. The California Department of Forestry and Fire Protection (CalFire) has mapped fire risk by severity and found *Very High Fire Hazard Severity Zones* in 60% (121) of southern California cities. Even homes within suburbs have not been immune to adjacent wildfires; at least 15% of the homes lost in the Cedar, Witch, Harris, and Rice Fires (2003 and 2007) were in areas considered suburban in San Diego County vegetation maps. Embers flying into the community of Del Rosa destroyed houses nearly *two miles* from the burning edge of the Old Fire of 2003.

The state Legislative Analysts' Office has shown that numbers of housing units in areas where the state takes responsibility for fire fighting (State Responsibility Areas (SRA)), have increased significantly even as local governments annexed large parcels of land. These SRAs are the wildland-housing intermix landscape where the state agency, CalFire, is responsible for fire fighting. Four southern California counties are not included in the SRA because they have their own first-responder fire departments. These counties are: Los Angeles, Orange, Santa Barbara, and Ventura. Based on 2005 data, even excluding those four major counties in southern California, there are 860,000 housing units in State Responsibility Areas.

With a population of over four million, the "Inland Empire"—Riverside and San Bernardino Counties in southern California—ranks 14th in population among U.S. metropolitan areas and is one of the five fastest growing such regions in the nation. In 2005 alone, Riverside County experienced the second highest county growth rate in California; the combined gain of the two Inland Empire counties for 2005 was 106,000 people, or 48 % of southern California's population growth that year. Hundreds of thousands of additional dwelling units have already received entitlement approvals in western Riverside County (which stretches east towards Palm Springs and south towards San Diego) and will be added to the county over the next decades. The current southern California population of 24 million is expected to swell to 30 million by 2020, with 60% of that surge in the Inland Empire. Riverside County has had the greatest increase in acres burned over the past century for the entire southern California region, and that is before these additional entitled houses have even been built.

In Orange County growth continues as well. Approval has recently been granted for Rancho Mission Viejo to build 14,000 new homes and five million square feet of commercial space near San Clemente. According to population forecasts by the Center for Demographic Research at California State University Fullerton, Orange County will add more than 500,000 people over the next 30 years. Much of this new development will occur in proximity to chaparral and coastal sage scrub habitat.

In Los Angeles County, 54,000 housing units located along Interstate Highway 5 are planned in two shrubland areas. Newhall Ranch in Santa Clarita Valley will have 21,000 homes. The new city of Centennial to be located in a rural valley north of Los Angeles will have 23,000 houses, along with commercial and retail business.

BALLOT BOX BUDGETING: THE FISCALIZATION OF LAND USE

In addition to pressure from population growth, the fiscal structure of the state has a very significant effect on growth policies. A dramatic change in taxation policies ushered in by the passage of Proposition 13, which cut property taxes profoundly, in 1978 had far reaching (and presumably unintentional) effects on land use decision-making.

Prior to Proposition 13, property taxes—and those of special districts—were set by each county, and rates would automatically increase with the rate of inflation. People on fixed incomes were facing hugely increasing taxation rates. The average rate of inflation in that decade was about 6%, topping out at 13.3% by 1979. Combined with increasing unemployment, double-digit interest rates rose to unprecedented levels (above 12% per year). The prime rate hit 21.5% in December 1980, the highest in history. These factors were the context for the drastic tax restrictions incorporated in Proposition 13. The Proposition set the maximum property tax rate at 1% of the value of the property. Perhaps even more critically, property could only be revalued upon a change of ownership. No new ad valorem property taxes could be imposed. *Any* special taxes (which were not defined) needed to be approved by two-thirds of the voters. In 1977, local governments in California drew 41.7% of their revenues from property taxation; by 1997, this had dropped to 25% for cities²⁷ and less than 10% of regional revenues in southern California.²⁸

The effect of these changes resulted in such changes in fiscal responsibility as San Diego County, turning responsibility for fire fighting over to local districts. Consequently, many cities and counties have encouraged the construction of more expensive housing at low densities so as to reduce service expenditures and increase property taxes. They have worked to raise more sales tax by zoning land for retail stores. To keep up with the provision of services and the need for revenue to pay for them, a development treadmill has become established, constantly pressuring the locality to grow.

Further reducing revenues for localities, California voters passed Proposition 218 in 1996 requiring majority voter approval for all general local taxes and a 2/3 majority vote for all special taxes, as well as other restrictions to revenue generation. This additional restriction on revenue raising has led local governments to resort to aggressive economic development, though they receive only a portion of the funds.²⁹ Lewis, in a survey of city managers, found that the "desire to enhance

sales tax revenues to localities in a state where the property tax is seriously constrained as a revenue source, is a prime motive for municipalities' attitudes toward new development, redevelopment and annexation."³⁰ This is complemented by the relative cheapness of land at the fringe and in exurban areas.

The reluctance to pay taxes is deep-seated in some parts of southern California, with consequences for its residents. Following the 2003 fires, San Diego County voters twice rejected initiatives to increase a hotel tax to boost fire protection (the increase requires a two-thirds majority for passage), and local officials are pessimistic about succeeding in the future. This in a county that no longer has a unified countywide fire department and where large numbers of houses burned in both 2003 and 2007 despite the deployment of 90% of CalFire statewide resources to southern California to fight the conflagrations, leaving the rest of the state without adequate resources.

This tax averse stance is possible in part because many of the costs of fire protection are paid for through higher insurance premiums for all county residents, whether they live in a high fire risk area or not, by utility customers (who pay for this protection indirectly through charges in their utility bills), and by state and federal taxpayers far removed from the fire's perimeter.³¹ California Governor Schwarzenegger is currently proposing to bolster this subsidy through an additional statewide fee of 1.24% on insurance premiums to pay for the purchase and maintenance of fire engines and other equipment and additional staffing increases during peak seasons—essentially taxing all insurance holders to protect those who choose to live in remote areas outside the reach of local fire departments.³² This also means that most voters who contribute to fire fighting budgets have no say in the land use practices that have contributed to the fire management issues.³³

INCENTIVES FOR SPRAWL

Long-standing structural factors favor sprawl type land development. As many commentators have noted,³⁴ federal and state policies, including mortgage subsidy programs, highway-building programs and cheap transportation costs, tax systems, cheap water, utilities and services, urban poverty, and racism, underlay expansion on the edge. Infrastructures like the Los Angeles Aqueduct supplying water to Los Angeles, the Metropolitan Water District's far-flung water purveyance system, connected to state and federally built water purveyance systems, drain and flood control

projects provided by federal agencies, highways and airports, and the mortgage deduction, among other incentives, have favored urban expansion.

An analysis of Metropolitan Water District rates, for example, show that the San Diego County Water Authority and the Municipal Water District of Orange County received some of the highest subsidies and had some of the highest average annual growth rates into the 1970s.³⁵ In 2004, the San Diego County Water Authority negotiated an additional 200,000 acre-feet of water for the county, to be transferred from the agrarian Imperial Irrigation District. This water transfer was effectuated with the backing of the state legislature, Congress, and the Department of the Interior as it involved water from the Colorado River. Despite the over allocation of the River, the transfer occurred with no land use change. Although the costs of water will be high, more water will allow greater land intensive development to occur, including at the urban wild-land interface.³⁶

These kinds of hidden infrastructure and financial subsidies have, combined with the fiscalization of land use and the availability of cheap developable land, been the engine of continued suburban expansion into the wildland interface.³⁷

The Endangered Species Act

Paradoxically, the preservation of endangered species in southern California may also be contributing to sprawl. Because land acquisition is severely under-funded, development projects are frequently asked to "set aside" land for reserve assembly as part of the entitlement process. These set asides—whose purpose is to protect habitat—have the unintended consequence of rapidly expanding the urban wildland interface and putting the preserved land at risk of frequent human-caused fires. This is especially true when the development footprint is poorly consolidated, snakes along ridgelines, is broken up into dispersed "pods," or situated in areas that have high habitat values such as riparian areas and canyons that serve as wildlife corridors. Such project designs are commonly approved. All these sites typically are designated very high-risk fire areas.

Additionally, as in Riverside County, development impact fees are a primary source of scarce acquisition funds, creating a linkage between more development and land preservation. Habitat conservation through land purchase is being financed by development fees.³⁸ While the Endangered Species Act has created better parameters for the protection of particularly threatened and endangered ecosystems, without a source of funding to

purchase important areas, they can only be preserved through development fees assessed on new development or county and city zoning, requiring those counties and cities to down zone land, depriving them of potential revenues. In San Diego, an acquisition need of over \$2 billion has been identified to protect the remaining natural ecosystems. Meanwhile, development is occurring adjacent to preserves, and farther into habitats that are threatened or endangered. During the 2003 fires, more houses burned near small, scattered, and small multi-habitat preserves than where there were large multi-habitat planning areas, such as Otay Mesa in San Diego County.

Campaign Contributions

As pointed out, in a commercial republic like the U.S., there are strong connections between promoting a vital commercial economy and public officials.³⁹ First, there is evidence that voting behavior is strongly shaped by the electorate's assessment of how well public officials have done in promoting prosperity. In California's revenue restricted environment, this means that, of necessity, there are increasing joint collaborations between government and business, where governments rely on businesses for services and revenues. Thus, public officials will listen to businessmen with care, and businesses will be actively involved in promoting officials with whom they can work.

Secondly, California does not have publicly financed campaigns, further consolidating the relationships between public officials looking for campaign contributions and business interests seeking assistance to conduct their affairs. Take one example among many in San Bernardino County: the Lewis Group of Companies is among the largest development companies in the region, building thousands of homes, dozens of shopping centers, office buildings, and industrial parks in the Inland Empire. In the period from 2001-2007, the Lewis Group contributed nearly \$2.3 million to political campaigns from local city council races to congressional ones.⁴⁰ Under these conditions of mutual interdependence between elected officials and business interests, land and its development becomes the vehicle for both to succeed.

As urban regime theorists have argued, the success of urban political economies relies on economic growth, and "promoting economic growth in the city [or county] has come to mean viewing the city [or county] as a pattern of land use."⁴¹ Rearranging land-use patterns is what generates income for both businesses and the localities. The less expensive land at the urban fringe, has been both less expensive to develop and has yielded

greater revenue streams for localities and developers, creating a win-win for localities and business interests.

EXISTING FIRE POLICY AND REGULATIONS

Building codes are much stricter in California than they are in most other parts of the West. State regulations require fire resistant roofing on all homes constructed since 1995 and those reroofed since then.⁴² Many municipalities now require fire-resistant construction for new developments, which includes screened eave openings and vents, double-paned windows, use of fire-safe building materials, and incorporation of greenspace around new homes. Very few areas have gone so far as to require retrofitting of existing homes.

Counties and cities in southern California have different rules and requirements, both for buildings and for land buffers. For example, the counties of San Diego, Los Angeles, Orange, and Ventura require closing gaps under barrel tiles, screening attic vents, covered eaves, and so forth for new development, while the city of San Diego does not.

New statewide *Wildland-Urban Interface Building Codes* went into effect January 1, 2008, and apply to all new construction located in Very High Fire Severity Zones of State Responsibility Areas. This includes the requirement for costly tempered dual-pane windows. The estimated average cost of compliance for new construction or retrofits is \$3,000 per housing unit. All construction materials used for buildings in these zones must display the State Fire Marshall stamp. Imperial, Riverside, San Bernardino, and San Diego counties will be subject to these codes since they are State Responsibility Areas. The remaining counties of Los Angeles, Orange, Santa Barbara, and Ventura are expected to adopt similar stringent building codes for their high fire severity zones.⁴³

For developers to receive building permits, they must increasingly assure decision-makers that their communities are Fire-Safe or provide Shelter in Place. Stevenson Ranch near Santa Clarita in southern California has been pointed to as a model of the master-planned fire resistant community. All of the homes were constructed to withstand radiant heat and flying embers using concrete tile roofs, double-paned heat-resistant windows, and enclosed eaves. Stone and concrete culverts protect homes adjacent to canyons and other open space, and many of the swimming pools are equipped with valves to allow firefighters to draw water. A 200-foot greenbelt with fire-resistant landscaping rings the properties, and the development has been laid out with firefighter access and evacuation in mind. But the ecological impacts of this type of fire

protection on chaparral and sage scrub landscapes can be considerable. Increasing evidence suggests that the cumulative effects of defensive space activities is a primary contributing force of ecotype change, habitat destruction, slope destabilization, water quality impairment, and infrastructure costs.⁴⁴

For example, in the proposed Merriam Mountains development in northern San Diego County, where the development area itself is consolidated, for each acre of housing, one acre of land will be cleared of flammable, native vegetation in an area that will include a Natural Communities Conservation area to protect endangered species.⁴⁵

Finally, such land buffers are typically developed using experience from forest fire ecology and not Santa Ana wind driven chaparral and sage scrub fire regimes. Before the large property losses incurred in the 2003 and 2007 conflagrations, the primary tool employed to protect homes was maintenance of defensible space. Recent history shows that no amount of vegetative clearance will ensure protection of a building from flying embers in the Santa Ana wind-driven chaparral and sage scrub ecosystems, especially in the dispersed ranchette developments.⁴⁶ Each southern California county has a defensible space requirement for buildings. The area cleared of vegetation must be maintained at all times and any violation is subject to a fine, removal by local jurisdictional enforcement order, or imprisonment for repeat offenders. Circumferences vary depending on the ordinance and range between 100 to 300 feet. Many localities incorporate suggested lists of fire-wise landscaping materials into their clearance policy.

EPILOGUE/CONCLUSION

There is no simple answer for how to reduce fire risk. Some of the solution lies with public policy related to the location and design of new housing developments, the use of fire-resistant building materials, and the maintenance of defensible space around homes. We can learn from looking not only where homes burned, but where they did not.

Those who suggest a policy to remove chaparral over broad areas face a quixotic quest to control nature. Such a strategy is not only impossible to accomplish, but also unwise. Chaparral regrows quickly after fire (if the fires are not too frequent), plays an important role in stabilizing the soil on southern California hillsides, contributes to water infiltration, and supports other natural ecosystem services from which we benefit. With the population of southern California expected to double over the next 40

years, we can expect that fire ignitions by human actors will continue to increase. Forward thinking public policy in land use planning decisions must formally involve individuals with fire fighting expertise if we are to meet this challenge.

Californians need to embrace a new paradigm for dealing with and managing fire on the southern California landscape. In this respect, we can learn much from the science of earthquake or other natural disaster management. No one pretends they can stop them, rather they engineer infrastructure to minimize impacts. Fire science tells us there will be continue to be massive wildfires on the southern California landscape in the future, and they are on the increase because there are more houses and more people. Fire management activities cannot prevent these large fires. However, through a combination of better site planning and use of buffer zones, we may be able to engineer an environment that minimizes their impact on property and lives.

However, there are two important realities to fuel management at the wildland-urban interface that will potentially cause problems in the future. One is the increasing complexity of land ownership and different management goals of neighbors. Fuel clearances necessary to ensure structure survival may not always be possible because of alternative management goals by neighbors that might include more flammable landscaping plant choices. The other reality is that fuel management in the wildland ranchette intermix landscape will likely lead to substantial environmental degradation of native ecosystems, and might include destabilization of riparian and hillside areas, further fragmentation from parcelization, land use, and roads.

Finally, policymakers must begin to understand the consequences of land use decision-making in southern California. By permitting development in far-flung locations and along the urban wildland interface, in ecosystems that will burn, not only are they exposing residents to high risks but they are also raising costs to state residents outside the area as well as to local residents. What is required is both better building and sitting practices, but also a revision of how cities and counties are financed. Short of the latter admittedly difficult and ambitious task, we will be facing continued impossible trade-offs and be engaged in slow, but sure, degradation of our environment and many hidden economic costs as well.

NOTES

1. Logan, J.R. and H. Molotch, 1987. *Urban Fortunes, the Political Economy of Place*, Berkeley: University of California Press.
2. Elkin, S.L. 1987. *City and Regime in the American Republic*. Chicago: University of Chicago Press.
3. Keeley, J.E., C.J. Fotheringham, and M.A. Moritz. 2004. Lessons from the 2003 wildfires in southern California. *Journal of Forestry* 102: 26-31.
4. www.usatoday.com/printedition/news/20071024/1a_firescover24_dom.art.htm.
5. <http://www.nifc.gov/stats/wildlandfirestats.html>.
6. http://www.wflcenter.org/ts_dynamic/research/16_pdf_file.pdf.
7. Rundel, P.W. and Gustafson, R. 2005. *An Introduction to the Plant Life of Southern California: Coast to Foothills*. University of California Press, Berkeley.
8. Fites-Kaufman, J.A., P.W. Rundel, N. Stephenson and D.A. Weixelman. 2007. Montane and subalpine vegetation of the Sierra Nevada and Cascade Ranges. pp. 456-501, In: Barbour, M. A. Schoenherr and T. Keeler-Wolf (eds.). *Terrestrial Vegetation of California*. University of California Press, Berkeley.
9. Keeley, J.E. 2002. Fire management of California shrubland landscapes. *Environmental Management* 29: 395-408.
10. Syphard, A.D., V.C. Radeloff, J.E. Keeley, T.J. Hawbaker, M.K. Clayton, S.I. Stewart, and R.B. Hammer. 2007. Human influence on California fire regimes. *Ecological Applications* 17:1388-1402.
11. Ibid.
12. Ibid.
13. Halsey, R.W. 2004. *Fire, Chaparral and Survival in Southern California*. Sunbelt Publications, El Cajon, California.
14. Keeley, J.E. and C.J. Fotheringham. 2001. The historical role of fire in California shrublands. *Conservation Biology* 15: 1536-1548.
15. Keeley, J.E. 2005. Fire as a threat to biodiversity in fire-type shrublands, pp. 97-106. *Proceedings of the Conference, Planning for Biodiversity: Bringing Research and Management Together*. USDA Forest Service, Pacific Southwest Research Station, General Technical Report PSW-GTR-195.
16. Mittermeier, R.A. Gil, P.R. Hoffman, M. et al. 2005. Hotspots Revisited: Earth's Biologically Richest and Most Endangered Terrestrial Ecoregions. Mexico City: CEMEX.
17. Zedler, P.H. 1995a. Fire frequency in southern California shrublands: biological effects and management options. Pages 101-112 in J. E. Keeley and T. Scott, editors. *Wildfires in California brushlands: ecology and resource management*. International Association of Wildland Fire, Fairfield, Washington.
18. Keeley, J.E. 2006. Fire management impacts on invasive plant species in the western United States. *Conservation Biology* 20:375-384.
19. Pincetl, S. 1999. *Transforming California, a political history of land use and development*, Baltimore: Johns Hopkins University Press.
20. Dillon's Rule states that local governments are creatures of the state legislature and that they may act only if they have legislative authorization to do so. States typically delegate land use authority to local governments.
21. Ibid.

22. SFGate.com, 2007. 86,000 homes to be built in fire-prone SoCal areas, Nov 11. <http://sfgate.com/cgi-bin/article.cgi?f=/n/a/2007/11/11/state/n050241S27.DTL>.
23. The San Diego Foundation, *After the Fires Fund*, 2007. Community Needs Assessment Report, San Diego. December 5.
24. www.scag.ca.gov/census/pdf/regionweb.pdf.
25. Heimlich, R.E. and W. D Anderson, 2001. *Development at the Urban Fringe and Beyond, Impacts on Agriculture and Rural Land*, Economic Research Service, USDA, Washington D.C., June.
26. http://silvis.forest.wisc.edu/projects/WestCoast_WUI_Change.asp.
27. Wassmer, R. 2002. Influences of the "fiscalization of land use" and urban-growth boundaries, California Senate Office of Research.
28. Musso, J. 2004. Metropolitan fiscal structure: coping with growth and fiscal constraint, in *Up Against the Sprawl, Public Policy and the Making of Southern California*, J. Wolch, M. Pastor and P. Dreier (eds), Minneapolis: University of Minnesota Press, pp. 171-194.
29. Chapman, J.I. n.d. Circa 2000. Proposition 13: Some unintended consequences, Occasional paper, Public Policy Institute, San Francisco, California. Department of Planning and Land Use, 2004, *Planning Report, General Plan 2020, Traffic Modeling and Residential Land Use Distribution Map*, Board of Supervisors' Hearing, May 19.
30. Lewis, P.G. 2004. Retail politics: local sales taxes and the fiscalization of land use, *Economic Development Quarterly*, 15 (1), 21-35.
31. Berg, E and B. Boyarsky. 2004. Losing Ground, how taxpayer subsidies and balkanized governance prop up home building in wildfire and flood zones. Center for Governmental Studies, Los Angeles (www.cgs.org).
32. Rothfield, M. 2008. Rejection of fire plan levy urged. *Los Angeles Times*, B 1, B 10, Jan 26.
33. Grijalva, R. Chief, Director, CalFire, 2007. Chief's Memo, June 22. http://www.fire.ca.gov/about_content/downloads/weeklymemos/ChiefWeekly_062207_RDG_Updated.pdf.
34. Fishman, R. 1987. *Bourgeois Utopias, the Rise and Fall of Suburbia*, New York: Basic Books.
35. Jackson, K.T. 1985. *Crabgrass Frontier, the Suburbanization of the United States*, Oxford: Oxford University Press.
36. Peiser, R. 1999. Myths about urban sprawl, Presentation to The Cutting Edge 1999 Conference, St. John's College, Cambridge, The Royal Institution of Chartered Surveyors.
37. Rome, A. 2001. *The Bulldozer in the Countryside, Suburban Sprawl and the Rise of American Environmentalism*, Cambridge: Cambridge University Press.
38. Erie, S. et al. 2004. W(h)ither Sprawl? Have Regional Water Policies Subsidized Suburban Development? In *Up Against the Sprawl, Public Policy and the Making of Southern California*, J. Wolch, M. Pastor and P. Dreier (eds), Minneapolis: University of Minnesota Press, pp. 45-70.
39. Pincetl, S and B. Katz, 2007. The Imperial Valley of California: Sustainability, Water, Agriculture and Urban Growth, in *The Sustainable Development Paradox, Urban Political Economy in the United States Europe*, R. Krueger and D. Gibbs (eds), New York: The Guilford Press.
40. Building on the urban fringe has always been less expensive for several reasons: less expensive land, the ability to lay down infrastructure unimpeded, and new construction is less expensive than retrofitting the old.
41. Pincetl, S. 2004. The preservation of nature at the urban fringe, in *Up Against the Sprawl, Public Policy and the Making of Southern California*, J. Wolch, M. Pastor and P. Dreier (eds), Minneapolis: University of Minnesota Press, pp. 225-254.

Pincetl, S 1999 b. The politics of influence: democracy and the growth machine in Orange County, U.S. in *The Urban Growth Machine, Critical Perspectives, Two Decades Later*, A.E.G. Jonas and D. Wilson, Albany: State University of New York Press.

39. Ibid.

40. Newell, J. 2007. Building influence. Crew: Citizens for Responsibility and Ethics in Washington, www.citizensforethics.org/node/27520, 8 April.

41. Ibid.

42. California Building Code Health and Safety Code Section 13127.7.

43. Clark De Blasio, J. 2007. Defensible Space: Environmental Implications of Fire Clearance Regulations in the Santa Monica Mountains National Recreation Area. Graduate comprehensive project. University of California Los Angeles. 99 pp.

44. Ibid.

45. <http://www.sdcounty.ca.gov/dplu/docs/PR/10-15-07/APPENDICES/k2.pdf>.

46. Ibid.

Possible Causes of the Current Subprime Mortgage Loan Crisis

Joshua Buch and Kenneth Rhoda*

INTRODUCTION

Mortgages play a major role in our financial system and the current crisis in the industry should be of great concern to all of us, in part because of the following:

- Equity in our homes is by far the largest net worth category of the average U.S. household. "Over one third of U.S. households' net worth is the equity they have in their homes."¹
- Total consumer debt is over \$10 trillion, \$8 trillion of which is in home mortgages.²
- Defaults on mortgages affect our entire financial system. According to Ronel, "... mortgage-backed securities (MBSs) distribute this risk throughout the entire economy; indeed, some estimates show that one-quarter of all mortgages are ultimately held by investors in MBSs."³

The current crisis has the potential to surpass that of the thrift industry debacle in the late 1980s. At that time numerous thrift institutions throughout the country became insolvent and eventually failed, according to Madura, due to: "An increase in interest expenses, losses on loans and securities, serious liquidity issues, and fraud."⁴

Discussing the details of those issues is beyond the scope of this paper. However, the causes of the Savings and Loan failures were not predictable. Possibly, better regulatory oversight with more frequent examinations and the maintenance of existing standards could have eliminated a portion of the crisis. A better understanding of the potential impacts of the regulatory changes of the early 1980s could also have helped minimize the magnitude of the crisis. Regardless, analyzing data that existed

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