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The Intrusion of Human Population Into Forest and Range Lands of California[1]

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Abstract: Demographic and economic growth are pushing deeper into California's forest and range lands, making effective fire protection and traditional industrial uses of the land more difficult. Urban forces that will increase the difficulties in the future include: increasing urban population pressures, selective migration, low-priced housing, adequate infrastructure, decentralized development, and government inadequacies. Some compensating trends that will tend to restrict growth and minimize problems include a near-term weakening of the rural economy, few major planned developments, growth opposition, more integrated recreation uses, zoning for larger parcel sizes, and stabilization of tax benefits such as the Timber Production Zone.

The nature and pace of demographic and economic development significantly affects California's forest and range region (Bradshaw, 1986). In general it is useful to think of this growth and development along a continuum bounded by two value sets, stretching from the natural wildlands to the developed urban setting (Blakely, 1984). The line is not sharp between these two patterns, but with urban development comes an inexorable pressure limiting the effective management of natural resources. This pressure is evident in both fire protection and the management of land for industrial purposes.

The patterns of growth that continue to shape the intrusion of people and urban values into rural lands can be organized according to whether they are generally antagonistic or favorable to the effective management, biological growth, and economic well being of the state's forest and range resources areas and industries. Problems from the perspective of forest management and fire prevention/suppression are defined as those conditions or practices due primarily to growth in rural areas that:

--restrict the land available to productive management,
--limit the range of effective management practices used on productive land, and
--lead to the allocation of investment dollars or natural resources away from productive forestry or agriculture.

On the other hand, favorable developments from the point of view of forest and range resource management include those that preserve available land from alternative patterns of development and that mitigate the negative effects of growth on the management of natural resources.

PROBLEMS OF GROWTH FOR FOREST AND RANGE MANAGEMENT

The critical problems caused by growth in the forest and range regions of the state are (1) the continuing increase of population in and near forest and range areas. (2) the people moving into forest and range areas are self-selected to include a high proportion of people who value the open space and rural life style of the region even at the expense of economic opportunity. (3) considerable long term

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population growth will be stimulated due to low price rural housing and unbuilt subdivisions, (4) inadequate infrastructure capacity seems not to limit rural and forest region growth, (5) many small independent developers rather than a few large ones are building in rural areas, making it more difficult to monitor growth and to control cumulative impacts, and (6) the inability of local government to effectively balance the needs of the forest and range industries with public concerns over management practices and industrial impacts.

Rural Population Growth Exceeds Urban Growth Rates

The first source of strain on rural forest and range area management is that growth is likely to continue at a rate exceeding most urban areas (California Department of Finance, 1983). The counties with the largest forest and range resources are now growing at a rate about 20 percent faster than the urban counties, with the small foothill counties still the predominant population growth rate leaders in the state. Although the rural population increase has slowed since the 1970s when it was growing three times as fast as the urban counties, population growth in the forest and range counties continues to exceed urban population growth and will probably continue to do so past the turn of the century. Whereas the state as a whole has experienced a doubling of its population every 20 years since statehood, California will not again double its 1970 population of 20 million until at least 2020, a period of 50 years. However, by 1986 eight counties had already doubled their 1970 population, and these counties were all in the forest region: Nevada, Lake, Alpine, El Dorado. Mono, Mariposa, Calaveras. and Amador. In addition, seven counties, all of which were forest except one, had at least 75 percent of the population needed to double, and they might be able to do so by 1990, a period of 20 years: Tuolumne, Madera, Riverside, San Luis Obispo, Placer, Trinity, and Santa Cruz.

The continuing pressure of high population growth rates on the counties that include the major forests and range lands of the state inevitably means that there are more people who want land to develop, who want to use roads, and who have a stake in the management practices used on the land near where they live. While this fact does not necessarily lead to predictions about whether newcomers or oldtimers will be involved in activities that restrict traditional resource industries or at what level of population growth pressures will be felt, experience has shown that with more people comes a higher probability that a conflict will result (Beale, 1975).

Newcomers Seek to Preserve Rural Environment

The people moving into rural areas are self-selected to be similar in many respects to the people who have traditionally been residents of the communities into which they move. For example, they value the amenities of rural living and they want a small town atmosphere. They generally have left the city because they want to avoid the congestion and problems found there. When they come to a rural community they do not want it to become urbanized too fast, and they want to preserve the surrounding natural environment (Bradshaw and Blakely, 1981). However, for the most part the newcomers do not make their living from the land and they do not understand or appreciate the values of those who do. Consequently. they more often seek preservation and oppose major industrial intrusions.

This self-selection of newcomers is reflected in the types of communities into which they move. The most rapidly growing communities are those with a strong tourist base and those with large numbers of elderly and retirees. Tourist communities for the most part rely on an attractive environment and nearby recreational or historical attractions, leading to pressures to maintain attractive surroundings. Retirees move to rural communities looking for inexpensive, safe, and attractive places to live. This group tends to be financially secure under social security, and contributes significantly to the overall economy through their expenditures (Hirschl and Summers. 1982). Newcomers to professional and trade centers, as well as manufacturing towns, contributed to moderate growth rate, while government centers and agricultural communities were the slowest growing. Moreover the growing places have populations with higher incomes, less poverty, fewer minorities, and higher levels of education, reflecting a population that is both more capable of developing their own jobs in the rural environment and more interested in a dispersed urban style of life within the forest and range region (Bradshaw, 1986).

Due to this selective recruitment of essentially middle and upper middle class

persons into growth areas that also have high degrees of dependence on traditional forest and range industry operations, misunderstandings and opposition to some industrial practices occur. For the most part the newcomers are not dependent upon the traditional industries of the areas for their income, and in fact they often view these industrial activities counter to their interests (Bradshaw and Blakely 1979).

Low Priced Rural Housing and the Acceptance of Mobile Homes Attract Development

The lower price of housing and land in rural areas contributes to the expansion of the population base. Housing in the forest and range areas cost 25-50 percent less than comparable housing (Bradshaw,1986). In a large number of the most rapidly growing areas, a high proportion of households live in mobile homes. Moreover, the greatest population growth has been in areas with high levels of housing vacancies, reflecting in part the potential of converting seasonal homes to permanent residences. The price of California urban housing is among the most expensive in the world, leading to an ongoing demand for lower priced rural housing.

In addition, lots that were subdivided years ago carry the potential for considerable unregulated expansion. Thousands of lots (how many is not known) remain unbuilt in subdivisions created as early as the 1920s and 1930s. The major barriers to construction are still the high cost of all construction, especially for second homes, and the problems of connecting the lots to water and sewage systems. Increasingly, local planning departments also place strong requirements on these parcels for adequate construction, which is often expensive in rural areas.

However, if an owner wants strongly enough to build and has the financial resources to do it, there are few means available to local communities to stop or slow the development of these lots. One type of tool is the establishment of a maximum number of building permits that can be issued each year, such as Santa Cruz and Napa counties have done. But this level of antidevelopment initiative is relatively unlikely in most rural counties with large numbers of unbuilt parcels, and consequently they provide a considerable potential for growth outside the zoning process.

Infrastructure Limitations in the Long Run Will Not Stop Rural Growth

Many forest and range communities are near capacity on sewage connections or are expecting to reach capacity soon. For the most part, however, only a few communities have restricted development because of inadequate capacity, and most of these communities had inadequate systems in the first place. While it is increasingly difficult to finance improvements, inadequate capacity will not be a long term barrier to development, with just a few exceptions. Similarly, water problems are faced by many rural communities, but supplies are nearby and probably can be delivered at reasonable (though increased) prices (Bradshaw 1986).

Incremental Small Scale Development May Be Harder to Identify and Control Than Large Single Owner Developments

The major form of land development in the forest and range areas is on single parcels or in a small number of parcels being developed individually by local developers. While large lumber and land development companies initiated huge subdivisions in the 1960s and early 1970s, often near new reservoirs, this form of development has largely subsided. Instead the largest impact is from the cumulative consequences of thousands of individuals building on previously unoccupied parcels of land distributed throughout the forest and range land, often outside community boundaries. The major techniques available to local governments to control growth are disproportionately effective on large concentrated developments. The techniques of anticipating and mitigating problems associated with the cumulative impact of many small parcels is not well understood. This problem is being faced by Vermont where an effective strategy for dealing with large developments has been threatened by the overwhelming consequences of many small ones (Healy and Rosenberg 1978).

Local Governments Are Unlikely to be Able to Resolve Conflicts

Local governments are in a difficult situation with regard to the strains of growth pressures on the one hand and the need to preserve the traditional industries and way of life for the long-term population. Local government lacks the capacity, tools, and will

to meet the challenge in many localities, making ongoing problems more severe (Blakely and Bradshaw 1985).

Growth has concentrated along major highways in the forest and range areas of the state, and these are often the same roads used for the largest amount of truck traffic. On small roads nearer to the forest, complaints about trucks are often heard from the growing resident population. Yet this mainstay of the forest industry remains a growing problem in small communities.

Intensive forest and range management practices are criticized. Local concern over population growth carries over to concern by local groups for management practices on nearby private and public land. Since amenities of the natural environment are the major attraction of people to rural areas, major resistance is expressed at times to patterns of resource management that involves harvesting trees and using herbicides for brush control. Local people are aware of their interdependence with the land and are concerned about the air and water quality associated with forest and range management practices nearby. Maintaining the viewshed causes a more difficult problem in many respects especially for the large tourism industry.

FACTORS FAVORABLE TO MODERATE POPULATION GROWTH AND EFFECTIVE RESOURCE MANAGEMENT

The slowing of population increases and the greater separation of population and forest activities compensate for and counterbalance the factors likely to reduce the effective utilization of forest resources in California. The following factors are most important in this respect: (1) the long term outlook for economic growth in the rural areas is that it will not repeat the very high rates of the 1970s, (2) few major industrial, residential, and recreational developments are being considered, (3) residential growth and commercial development is frequently contested and stalled, (4) recreational resources are being developed in conjunction with forest and range management programs, thereby reducing conflict, (5) new zoning provisions offer greater protection to forest and range land from competing uses, and (6) the land set aside by Williamson Act and the Timber Protection Zone (TPZ) tax programs seem to be stable.

The Rural Economic Base is Weakening from the 1970s

Several aspects of the expansive economic growth in rural areas during the 1970s have weakened, leading to projections of less economic vitality in rural communities in the 1980s and beyond. This weakening of the economy is not good news for many rural communities, but it does slow the pressures of growth. The slowdown in the amount of Federal money going to social programs seems to be a critical component of this process. In the 19709, based on perceptions of lagging rural economies and extensive poverty, Great Society programs expanded to meet the true needs of rural residents, and for the first time rural components of programs were developed to match the delivery expectations of the program's urban counterpart. Government cutbacks have occurred throughout the country, and rural programs are no longer the source of special attention, limiting this source of rural growth (Blakely and Bradshaw 1985).

The major source of California's economic development in the 1980s is the huge increases in defense expenditures. These have gone largely to urban defense contractors while less decentralization into rural areas has been possible. High technology firms associated with the growing consumer electronics industry made a significant contribution to rural economic growth in the 1970s (Bradshaw and Blakely 1979). However, even this industry is under severe competitive pressures and is not expanding much in the 1980s.

Equally important, local government employment and social service employment funded by state and federal sources have not kept up with the overall pace of the economy. During much of the 1970's these programs constituted a transfer from urban areas to less developed rural places, providing employment for skilled persons working in organizations capable of obtaining federal grants.

The private sector has also lagged in its move to rural locations. Manufacturing plant relocations, which have not been particularly important in California's rural counties in any case, no longer are a potential source of new rural jobs. Many service industries are automating and no longer need rural work forces. The bulk of rural economic growth is in small business, as it has been for the last several decades. However, the present rural economy seems to be entirely dependent on small

businesses whereas they were only partially dependent on small business previously.

Commodities continue to weaken as a component of the rural economy. Agricultural exports are a problem throughout the nation, with many "third world" countries reaching self-sufficiency in basic grains. Beef and lambs, major range products, suffer from declining domestic markets and foreign competition. Lumber imports continue to threaten the local lumber industry as well.

These patterns, though only preliminarily identified, suggest caution in the projections for rural economic pull in the future. The prognosis is not for major rural depression, but only for a slower future economic growth.

Few Major Industrial, Residential, Residential, end Recreational Developments are Being Constructed

Several new industrial facilities with 100 or so employees are being considered, but larger ones are not. As well the proposed facilities are often deeply contested, as evidenced by the large public outcry over the construction of biomass energy plants in several rural locations.

Growth is Being Contested and Frequently Stalled

The pressure for local areas to closely evaluate and monitor the growth taking place is widespread. In about half of California's counties, growth is deemed to be visible and contested, and in these situations local groups are formed and opposition is focused on the planning process to slow the rate of development.

Better Integration of Recreation and Forest Management.

New state laws that provide mechanisms whereby forest and range land owners can charge fees to hunters and other recreational visitors on their land provides another opportunity for effective land management that produces an economic return. Landowners receiving income from these sources neutralizes some of the negative consequences of expanding recreational pressures on rural lands with little compensation to landowners whose property provides necessary habitat for wildlife.

Zoning for Larger Parcel Sizes

Over half the counties in California have taken steps within the last 5 years to increase the minimum parcel size of forest and agricultural land. These steps to use zoning regulations to slow the parcelization of rural land are a significant step in the direction of establishing more responsible county efforts to protect and solidify the forest and range industries and their land base. Supplemented by the taxation advantages of Williamson and TPZ contracts, forest and range parcels are now zoned closer to the sizes on which minimum industrial activity is possible. However, these parcel sizes are still questionable in terms of the minimum plot on which forestry or range management could be efficient and practical. Economical forest management may not be possible on parcels as small as 20 acres, and 500 acres or more may be required in many range areas. Zoning strategies that supplement the establishment of minimum parcel sizes are also being explored, including cluster zoning and use restrictions.

Williamson Act and Timber Production Zones are Stable

County planning directors report that few parcels under the Williamson Act or in TPZ taxation zones are being converted out of their plan and developed for alternative uses. While the coverage of these plans is not complete, most of the industrial forest land, and much of the other prime land is covered. The counties think that this land is a fairly stable base of resource dedicated property.

On balance, then, the growth pains that the forest and range areas experienced during the 1970s have eased on their own and have been countered by productive responses on the part of government and planning departments. These efforts have removed some of the most threatening problems faced by communities in the forest and range region. However, the reality remains that the forest and range areas are continuing to grow with more politically active and astute people, and they will make increasing demands on industry to mitigate the adverse effects of their of their operations

POLICY ISSUES

The relation between urban population growth and natural resource management poses significant questions for policy consideration at the state and local level. This review is not intended to be exhaustive, but to identify the most pressing issues.

1. Subdivisions. Progress has been made in developing better methods to monitor and control land splits and subdivisions, though any increase in the number of parcels in rural communities poses the potential for major increases in the population living there. The cumulative effect of many land splits which are not built upon for years is a major concern, yet the rationale for constraining land divisions is not entirely well established. The subdivision of land into five or more pieces is well controlled by laws governing subdivisions, but divisions into four or fewer pieces is not. These smaller splits should also be more closely monitored.

Existing subdivisions pose an even more difficult challenge to effective planning. Many lots in Lake and Nevada counties were created before standards were established for minimum size and before adequate infrastructure was budgeted. Today, these lots are legally developable if infrastructure could be provided and if an appropriately designed building was proposed. If they were all developed, however, they would overload the communities in which they exist, stressing schools, roads, utilities, and police/fire services. Some planning departments are putting pressure on owners to combine and swap lots to bring them into conformity with modern standards, while others are simply waiting until the issue becomes critical. A number of communities have explored purchasing development rights on some parcels, but this has usually proven very expensive. For rural communities and the owners of these parcels, a better solution needs to be reached.

2. Zoning policies. County zoning revision efforts to increase minimum parcel sizes within productive agricultural and forest land zones need to be continued. The effort to set minimum size land parcels of 5 to 20 acres in forest and range areas can effectively reduce the density of population in areas that have ample natural resources. Too often, however, small parcel sizes allow the land to be taken out of production while the parcels sell at higher prices to more affluent outsiders who use the land for a "ranchette" or other nonproductive use. The progress being made by in increasing the minimum parcel size within forest and agriculture zones to areas that constitute large enough economically viable parcels is a significant contribution to the protection of the forest and range resource, within the goals and objectives of the local community. Innovative and effective strategies such as cluster zoning or a "rural planned development" (RPD) permit residential development on small parcels situated on the least productive part of the parcel, with the remainder protected by deed as a single large agricultural parcel. Counties with forest and range lands should examine their zoning rules and use appropriate strategies to protect the natural resource areas where productive forestry or ranching are desired.

Moreover, land in these zones and neighboring zones should have the expectation of productive uses, avoiding questions of many challenges now faced by landowners about whether they can harvest on their property. Similarly, land in these zones should not be open to speculative valuation for residential or commercial development. In short, the planning process as it is currently practiced is an attempt to adjust the expectations of owners about what can and should be done on their land to the overall preferences of the public for the long term development of their community. To the degree that the planning process continues to offer unclear or contradictory mandates (such as to zone forest land in parcels as small as 5 acres each), the expectations of landowners can not be stabilized. Similarly, if changes and exceptions to the general planning process are frequently made, the expectation that the plan will hold would be appropriately questioned.

The pressure of population growth itself (as well as technological changes in transportation, industry, and forest management) contribute to the uncertainty of the planning process. A major policy crisis faced by the traditional zoning process is how to remain flexible to accommodate unforseen opportunities and to correct unforseen problems, while at the same time remaining fair and consistent. Significant progress has been made in solving some of these problems through the use of performance zoning criteria, which place low emphasis on the geographic allocation of land and emphasize the identification and mitigation of impacts of land use changes.

3. Research and development. The California Department of Forestry and the

University of California need to develop new fire protection. logging, and range management practices that are more compatible with a growing urban population near traditional forest and range properties. A major criterion for establishing management programs and for developing research programs should be the minimization of effects on the nearby urban population. In the long run forestry, lumber, and range industries will have to be compatible with nearby urban populations. The necessary research and demonstration programs to ease the interface problems should be initiated now.

4. Property rights issues. Property rights, ironically, emerge as a critical factor in these debates. On the one hand, the exercise of strong controls by the public over land use to control the rapid infusion of population into areas near the forest is an advantage to forest interests. At the same time, these same controls can be used against the forest industry to regulate their forest practices and to control the disposition and use of their land. It is unclear whether the benefits to the public and the industry are now in balance, or whether one group is giving more than it is getting.

Population growth in the forested and range areas of California is a mixed blessing. On the one hand it is essential to keep the small rural community from becoming a rundown, hopeless place. On the other hand, population growth brings change and pressure that conflicts with the traditional ways of life and sources of employment. Fire protection and management practices will need to accommodate the social and economic changes that are shaping California's forest and range areas. Programs are needed to reduce conflict and to identity and implement strategies that will be of mutual benefit. The tools for this accommodation are available but must be used creatively.

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