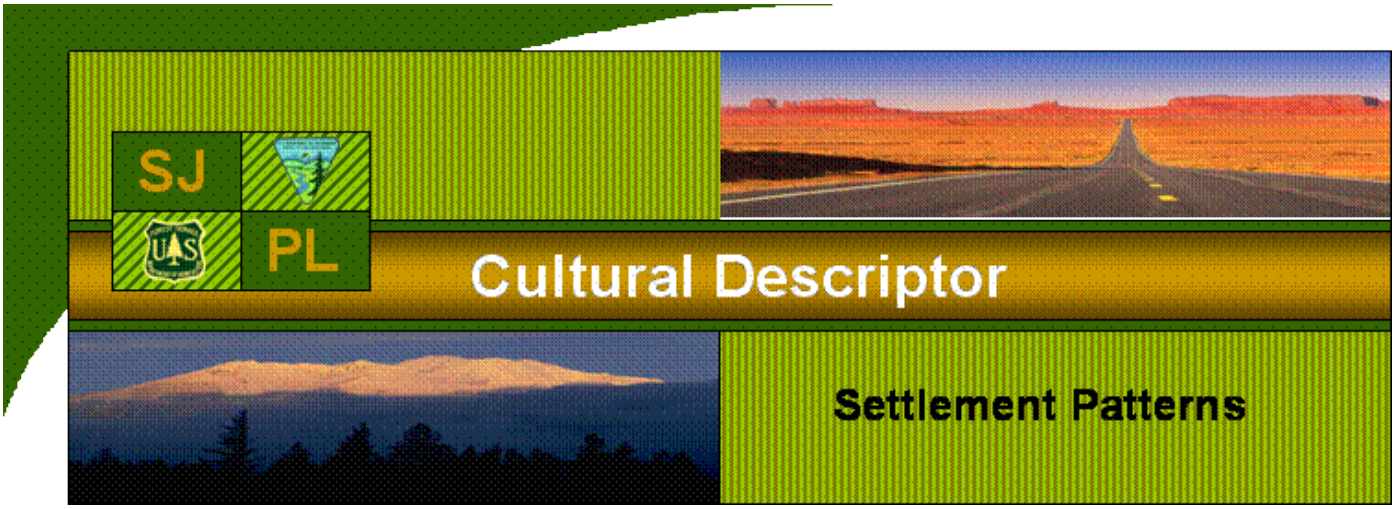
SJ
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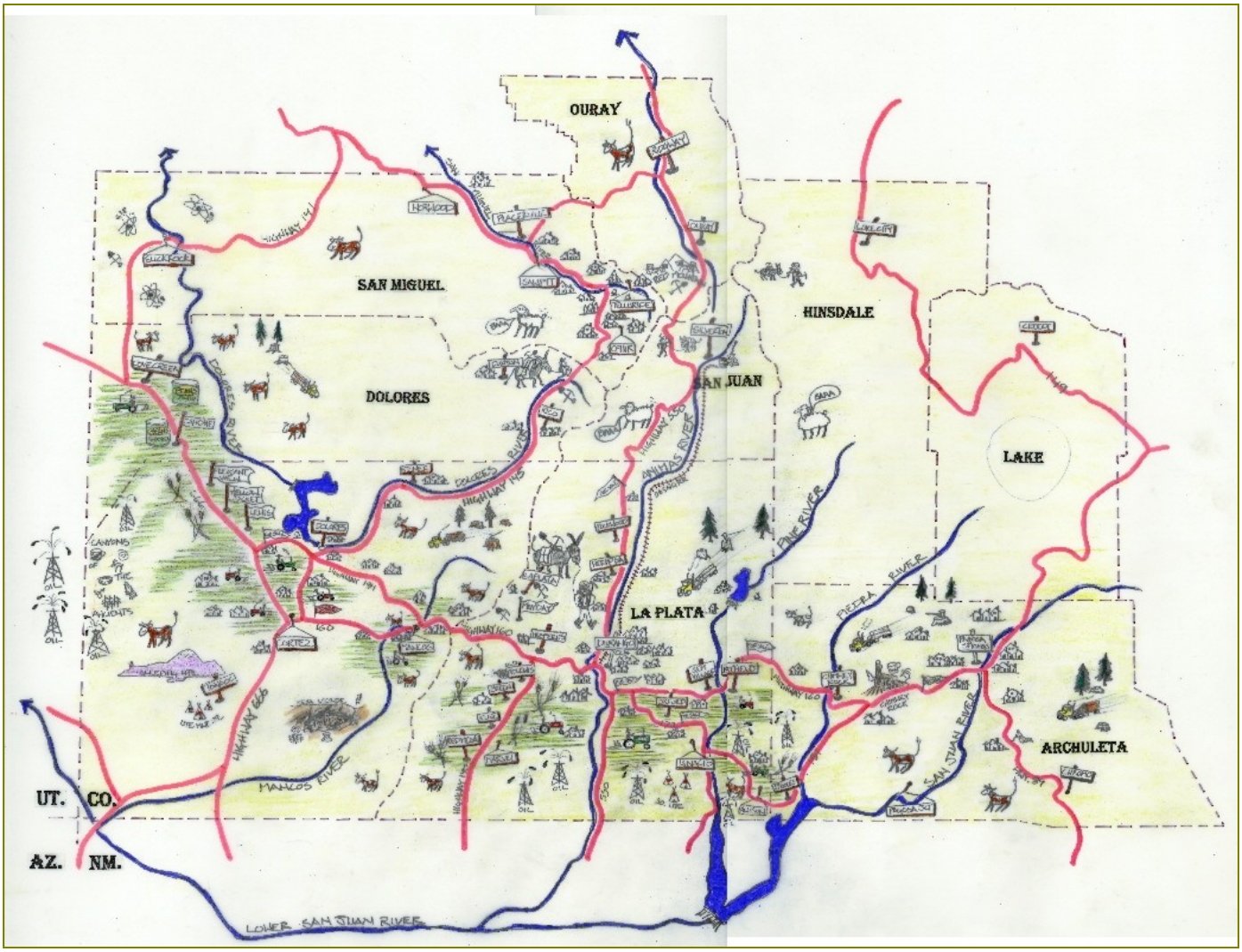
Cultural Descriptor
Settlement Patterns


OURAY
SAN MIGUEL
DOLORES
SAN JUAN
HINSDALE
LAKE
LA PLATA
ARCHULETA
UT.
CO.
AZ.
NM.
LOWER SAN JUAN RIVER

# Cultural Descriptor: Settlement Patterns

*A settlement pattern is any distinguishable distribution of a population in a geographic area, including the historical cycles of settlement in the area. This cultural descriptor identifies where a population is located and the type of settlement . . . It also describes the major historical growth/non-growth cycles and the reasons for each successive wave of settlement.*

The "historical cycles of settlement" in the San Juan and Dolores River Basins in Southwest Colorado will be presented in terms of "eras" including: the Pre-European Settlement and Migration Era, the European Settlement Era, the Conservation Era, the Post World War II Energy Development Era, and the New West Amenity Migration Era. Use of the term "Era" is not intended to reflect a sharply defined sequence of beginnings and endings. Eras, rather, define the dominant focus of migration and settlement at in a particular time frame. Each of these eras is like a wave of migration that rolls in and partially subsides, leaving behind a foundation upon which future waves of migration are overlaid.

Each settlement era overlay adds to the mosaic of past and ongoing settlement patterns on the physical landscape was well as the social, cultural economic and institutional mosaic that characterizes the contemporary study area. The extensive structures that the Anasazi left behind play a profound role in communities of today. Likewise the mines, towns, ranches, and remnants of the rail system developed during the era of European Settlement continue to shape the relationship between people and the land. The Resource Conservation Era created the public land agencies and management regimes that continue to be adapted via the Forest and BLM Plan process. The Post World War II energy development era is still alive in the form of a coal bed methane boom. The New West era of amenity migration dominates community life as the 21st Century opens. The challenges posed by the New West and the assets available to meet these challenges involve the cumulative and persistent contributions of everything that has gone before.

## Pre-European Settlement and Migration Era

The extensive dwellings and artifacts left by the "Anasazi" or "Ancestral Puebloans" tell the story of a people who migrated to find the shifting balance between increased precipitation at higher elevations and a longer growing season at lower elevations. These people sustained themselves with a combination of farming, gathering and hunting. They appear to have left the area when drought, and possibly deforestation, made their livelihood unsustainable. The extensive archaeological sites that remain attest to the aesthetic and spiritual value they placed on the spectacular vistas that characterize the region. The Ute and Navajo people that migrated into the area subsequent to the Anasazi and prior to European settlement also migrated seasonally between mountains, valleys, canyons and deserts in order to live off of the land by hunting, gathering and limited crop production.

(Social) Trends and (Land Use) Patterns:

- Seasonal and weather cycle migration for hunting, gathering and farming
- Extensive surface and subsurface structures and artifacts.

Forest Plan Issues:

- Archaeological protection/mitigation
- Cultural properties

## The Era of European Settlement/Mining: 1870-1910

**Gold, Silver and Hardrock Mining: Silverton and Rico**
It was gold and silver that brought European settlers into Southwest Colorado. The early boom towns were Silverton (incorporated 1876) on the upper Animas River and Rico (1876) on the upper Dolores River. Silverton and Rico peaked at about 5,000 residents each between 1890 and 1910. Severe winters, steep terrain, and a short growing season necessitated the development of down-river settlements to produce food, lumber, mine timbers and smelt gold, silver and other minerals.

**La Plata HRU: L. P. County, Animas and Pine River Valleys, Durango, Bayfield, Ignacio**
It was during this initial mining era that Durango (organized 1874) established itself as the dominant town in Southwest Colorado and the La Plata County seat. Durango was in proximity to rich coal deposits, fertile agricultural lands, extensive timber resources and ample water supplies. The Denver-Rio Grande narrow gauge railroad along the Animas River corridor carried ore to be smelted in Durango and carried food, lumber and supplies up to Silverton. Narrow gauge rail connections were also established to Durango from Rico and other San Juan mining districts. Thus Durango became the rail hub for the San Juan Basin to Chama and on to emerging urban markets in Denver and the Midwest.

Other river valley towns and agricultural settlements developed in Southwest Colorado during the era of European Settlement. Two towns were established in the Pine River Valley in eastern La Plata County. Cattle were brought into the Bayfield area in 1875 and the Town of Bayfield was incorporated in 1906. The Brunot Treaty of 1873 established the current boundaries of the Southern Ute Reservation and the Ignacio Agency for the Southern Ute Tribe was established in 1877, attracting an influx of Spanish American settlers from Northern New Mexico and the San Luis Valley. Ignacio was incorporated in 1913.

**Pagosa HRU, Archuleta County, Piedra, San Juan and Rio Blanco River Valleys:**
The Brunot Treaty of 1873 also touched off an influx of Hispanic settlers into southern Archuleta County and Anglo settlers into northern Archuleta County. The Denver-Rio Grande Railroad reached Pagosa Junction in 1881 and connected Pagosa Springs in 1900 in response to the development of two large and several small lumber mills. Ranches were established in the Piedra, San Juan and Rio Blanco River Valleys.

**Montelores HRU, Dolores and Montezuma County, Dolores and Mancos River Valleys:**
While hard rock mining was getting started in Rico on the east side of Dolores County, livestock settlers were being attracted to the lush native grasses on west side of the County. By 1910 open range overgrazing had converted native grasses into sagebrush.

The Mancos River Valley in the east side of Montezuma County, was settled by ranch families beginning in the 1870s. In 1891 the narrow gauge railroad connected from Dolores to Durango through the Town of Mancos (established 1894). Dolores was established when the narrow gauge rail line was built to connect Rico and Telluride to Durango. The narrow Dolores River Valley supported ranching and sawmills, establishing it as a supply town to the mines.

It is believed that at one time the Dolores River was connected to McElmo Creek, but a geologic uplift turned the Dolores north, leaving the fertile Montezuma Valley without a river. Work began in the 1880s to punch a tunnel through uplift at the bend of the River and bring Dolores River water into the Montezuma Valley. The Town of Cortez was platted by the original water company in 1886, and the Montezuma Valley was opened to homesteading.

**Ute Tribes:**
Prior to the discovery of gold and silver in the San Juans, the Ute people occupied most of the western slope of Colorado, migrating with the seasons to hunt, gather and winter. The expansion of Anglo and Hispanic settlement resulted in a series of land cessions. By 1895, the Muache and Capote bands had taken up allotments

on what today is the Southern Ute Reservation. The Weeminuche band refused to take up allotments and communally occupied today's Ute Mountain Ute Reservation to the west.

**Summary of the European Settlement/Mining Era:**
Native Americans were displaced as Europeans came into the area in search of gold and silver and created high altitude boom towns. Agricultural and sawmill settlements grew up in the valleys to support the mining towns and persisted when the mining economy collapsed after the turn of the 20th Century.

The San Juan Mountains provided wood products for shelter, and watershed resources that were vital to establishing agricultural settlements in an arid environment. The mountains also provided a ready source of livestock forage, resulting in unregulated grazing, prior to the turn of the century, which did serious damage to the watersheds. While the saw mills, farms and ranches persisted, mining continued to boom and bust and was eventually overshadowed by the extraction of energy resources beginning in the 1950s.

These migrations, settlements and economic activities profoundly affected the ownership and land use patterns that continue to shape the area. The Valleys came into private ownership through a combination of the Homestead Act, and the development of water storage and irrigation systems under the emerging water rights priority system. Water availability also determined the location of town-sites. With the exception of mining patents and water facilities, most of the San Juan Mountains remained in public domain with "open use" for timber harvesting, for spring-summer-fall grazing and for hunting. The canyon country supported a combination of mining patents and open winter grazing.

Trends and Patterns

- Towns, valleys, public domain
- Natural resource economies

Forest Plan Issues:

- Preservation of historic structures
- Impacts of unregulated use of the public domain
- Basis for future tribal water, and hunting rights claims

## The Resource Conservation Era

Conservation measures were initiated by President Theodore Roosevelt, in the first decade of the 20th Century, to address deteriorating conditions on western public domain lands. To address overuse, resource deterioration, user conflicts and community stability; most of the San Juan Mountains, that hadn't been homesteaded came under the management by the U.S. Forest Service with the creation of the San Juan National Forest in 1905. In the high desert and mesa country to the south Reservations were established for the Ute Mountain Ute, Southern Ute, and Navajo Tribes. In 1906, Mesa Verde National Park was set aside, as a preserve for the spectacular Anasazi cliff dwellings. The land that became Mesa Verde National Park had been part of the Ute Mountain Ute Reservation.

The open range in the canyon country to the west came under the Bureau of Land Management (BLM) grazing management as a result of the Taylor Grazing Act of 1936. This was part of a series of conservation initiatives undertaken by Franklin Roosevelt in response to the "dust bowl." The 1930s also saw the homesteading and conversion of privately owned non-irrigated rangelands into dry land farms in western Montezuma and Dolores Counties, and the "dry-side" on Fort Lewis Mesa in southwestern La Plata County. Many of the people that came in to take up dry land farming were escaping the "dust-bowl" crisis in the Midwest.

Another conservation era Federal agency that shaped southwestern Colorado was the Bureau of Reclamation. The construction of larger scale Reservoirs such as Vallecito Reservoir on the Pine River and Jackson Gulch Reservoir on the Mancos River provided irrigation and domestic water, as well as flood control. Smaller reservoirs also continued to be built to deal with the "hydrograph" of San Juan Basin rivers, which run most of

their volume in the spring when the snow pack melts, with diminishing flows in the summer when irrigation and domestic water demands are highest. Reservoirs allow spring runoff to be stored and used later in the season, when it is needed. Reclamation projects such as the Dolores Project, and Animas La Plata Project (currently under construction) were shaped by the changing conditions and values, laws and policies of the "New West Era" described below.

A general pattern of land use and ownership had been established by the 1950s involving small towns encompassed by privately owned irrigated valleys and dry land farms, encompassed by National Forest Land to the north, Indian Reservations to the south and BLM managed canyon lands to the south and west. Substantial BLM ownership was also established in the mining districts in the Silverton area. Grazing rotations involving National Forest, private, and BLM lands represent a more intensive variation on the seasonal uses and migrations that have characterized human settlement and livelihood since pre-European times.

## Post World-War II Energy Development Era

**Energy Development:**
As World War II ended, the economy of Southwest Colorado was primarily driven by production of renewable resources including farming, ranching, and wood products. The discovery of the Aneth Oil field in Southeastern Utah added a non-renewable dimension to the natural resources economy. The success of the Aneth Oil Field stimulated exploration and development of other oil, gas, coal and uranium fields in the Four Corners. The smelter mountain area along the Animas River became a uranium mill for a time creating a tailings pile that took until the 1990s to remove. During the energy boom of the late 50s and early 60s, Durango became the headquarters for energy company executives and engineers.

Cortez, in closer proximity to Aneth field, became home to most of the oil field workforce. The growth and new money from the oil field resulted in new housing subdivisions, schools and paved streets, as well as major improvements in Highways 160 and 666 and the opening of the McElmo Canyon Road to access the oil field. Cortez, which had struggled for lack of a railroad or river, and a series of irrigation company bankruptcies, outgrew Dolores and Mancos to become a regional trade town. This expanded physical and commercial infrastructure also laid the foundation for future tourism development.

Durango had long established its dominance in Southwest Colorado as a center for commercial and professional services. Energy company headquarters were a natural extension of this position. The most profound change for Durango resulted from the energy crash in the early 1960s. Town fathers looking for a way to pick up the pieces, focused on transforming Fort Lewis A&M, which had been a two year college located in Hesperus into a four year college. Fort Lewis College moved to its current College Heights location in Durango in 1956, and granted its first baccalaureate degrees in 1964 .

Since many of the energy reserves were discovered on the Southern Ute, Ute Mountain Ute and Navajo Reservations, the energy boom had the effect of beginning to bring the Tribes into the economic mainstream. Opportunities for Tribal government revenues and jobs, and the need to enter into business arrangements resulted in the reorganization of tribal governmental structures and a dramatic increase in tribal buying power in local economies.

Another profound change set in motion by the energy boom was the dramatic growth of Farmington, across the New Mexico State line at the confluence of the Animas and San Juan Rivers. In addition to developing new energy fields, the Farmington area became a center for the intersection of the energy pipeline system developed to carry resources to distant markets. The eventual growth of Farmington to three times the size of Durango has created competition for commercial and professional services.

**Other Post World War II Changes:**
Growth during the energy boom also began to fuel demand for wood products, which coupled with growing export opportunities, began to increase harvest levels on National Forest Land. Tourism, recreation and hunting

had begun to play an increasing, but still minor role, as post World War II America became more mobile, and transportation and communication systems were improved in the Region.

Trends and Patterns

- Towns, valleys, regulated public lands
- Energy booms (and busts)

Forest Plan Issues:

- Energy field and pipeline revenues and potential impacts on public land
- Tribes begin to develop economic/institutional clout
- Timber harvest levels begin to increase.

## The Era of Tourism/Amenity Migration: "The New West"

Throughout the Conservation and Post World War II energy development eras, tourism was a social and economic factor in Southwest Colorado. Hunting and fishing, the cliff dwellings of Mesa Verde, and the narrow gauge train from Durango to Silverton attracted modest numbers of visitors and helped to soften the swings of what continued to be a natural resource based economy. The establishment of Purgatory Ski Area, carved out of the San Juan National Forest in the 1960s was a hint of changes to come. But as of 1970, Durango had little in the way of up-scale bars and restaurants, there was no resort at Purgatory, and "Rio Grand Land," east of the train station was in ruins. The historic core of downtown Durango was populated by auctions, second hand stores, as well as the drug stores, dime stores, and hardware stores. The only "shopping center" was on Camino Del Rio. Highway 160 east was two lanes on the east side of the Animas River and looked down on the San Juan lumber mill. The San Juan Forest Supervisors Office was on the second floor of the Old Post Office Building on Main Street.

A look at how Durango has changed in the 30 years since 1970 is evidence of the dramatic shift in economic orientation that has occurred. But it is the changes on the rural landscape that have the most profound ramifications for Forest Planning. In the early 1970s Tammaron Resort was built, and the first large rural mobile home park was developed at the junction of Highway 550 and Trimble Lane, primarily to accommodate incoming construction workers. During this same period, the first few houses were built in what would become the Durango West complex of large subdivisions.

By 2000 the number of developed lots in the Durango West area was in the thousands with future development constrained by the availability of water. Headlines in the year 2002 talk about a Durango Mountain Resort (formerly Purgatory Ski Area) on the La Plata County/San Juan County Line that has been scaled back to 1,649 units and 410,000 square feet of commercial space. A proposal to develop the River Trails Ranch in the East Animas Valley was proposed for annexation into the City of Durango and the development of over 2,000 residential units. The River Trails ranch annexation proposal was denied by the City in the face of opposition to such high density development on the southern end of the Animas Valley, and will go forward as a lower density, high dollar development of 60+ residential lots. In the meantime an annexation in the Grandview Area east of Durango was proposed and approved in 2004 including a new location for Mercy Hospital, and the "Three Springs" development involving 2,100 residential units as well as substantial commercial development. Conceptual plans are under consideration for 1,500 to 3,000 homes, and office park and golf course on Ewing Mesa just southeast of downtown Durango, an excellent location for high density development except that it will require substantial investment to create access and sewage treatment capacity.

The constraint on high density growth in the Animas Valley by the denial of the River Trails Ranch annexation, the growth in Durango West, and the approval of high density development of Three Springs to the east of Durango, and plans to develop Ewing Mesa are reflective of the reality that Durango has outgrown it's historic geographic boundaries within the southern Animas Valley. Another trend is increased density within the historic boundaries of Durango in the form of a significant number of townhouse units. From a social standpoint all of these development trends involve the interrelated issues of density, housing affordability, and open space. River

Trails was blocked in the name of open space, Three Springs promises "attainable housing", and the high end development at Durango Mountain Resort incorporates an affordable housing element. As of July of 2005, the median home price in Durango was $356,000 up 19% in one year, while and the median price for county homes near Durango were $370,000. This is resulting in growth and price pressure on nearby small towns such a Bayfield and Mancos.

The general trend towards more new house lots in higher density City annexations and townhouses and proportionately less low density development in the County provides one building block for open space preservation. The increasing social value being placed on open space is being supported by land conservancies, and attempts at preservation through County comprehensive planning and the consideration of tools such as TDRs. Voters in the City of Durango past a sales tax increase in 2005 to acquire open space. There is still, however, a trend towards high end residential development in areas adjacent to public lands which will undoubtedly continue.

The change in Archuleta County is epitomized by the contrast between a billboard with Art Linklater's picture and an observation tower overlooking undeveloped land in the early 1970s, and what in 2002 is Pagosa Lakes resort, commercial center, and second home oriented subdivision that dwarfs historic Pagosa Springs. Pagosa Springs could also be impacted by proposed resort development adjacent to the Wolf Creek Ski Area that could eventually accommodate as many as 10,000 people. Even the slower pace of growth in Montezuma County is resulting in ranchettes, and subdivisions in what recently were hay fields and pinyon-juniper grazing lands. Since 2000 Montezuma County has seen it's largest subdivision of 135 lots in a fire prone area adjacent to BLM land.

The sea change reflected in the anecdotal contrasts described above between 1970 and 2005, and quantified in Table SP-1 has been described by the term "amenity migration," coined in 1994 by Dr. Laurence Moss:

**Amenity Migration**

[Amenity migrants are] "focusing on places around the world that are rich in nature and culture, places that until recently were veiled by their relative remoteness. Tourists, and similarly motivated longer-term migrants, are seeking to enjoy our planet's dwindling reserves of natural beauty and cultural diversity." (p. 2).

. . . Moreover, in this context, longer-term, or resident amenity migrants now appear to be as important, or more important, than the amenity tourist. Together these migrants are a formidable force for change" (p. 6). [Dr. Laurence Moss (1993, August) in "Beyond Tourism: The Amenity Migrants." XIII Conference of World Futures Studies Federation, Turku, Finland, revised 1994.]

"Relative remoteness" and "reserves of natural beauty and cultural diversity", have proven to be assets that have driven a large share of the migration into Southwest Colorado since 1970. It should be emphasized however that the ever-increasing influence of amenity migration is interwoven with the continuing influences of previous eras. The growth during the early 1970s in Figure SP-1, reflects the maturation, and for a time, the dominance of tourism. People migrated into Southwest Colorado to join in the development of tourism generated economic opportunities and take advantage of related employment opportunities.

By the latter part of the 1970s the Arab oil embargo had spawned an energy boom in Western Colorado and the Four Corners that promised (or threatened) to permanently transform the region. By the mid-1980s the energy boom had turned into another bust and population growth went flat. Growth stopped, property values fell, agriculture was in a trough, and businesses contracted or failed.

When the economy began to recover and growth resumed in the early 1990s the influence of the "amenity

tourist" was overshadowed by the influence of the "amenity migrant." Anecdotal evidence strongly indicates that most amenity migrants were originally amenity tourists. The growth in tourism of the early 1970s sowed the seeds for the amenity migration of the 1990s. A variety of forces are at play in this trend:

- Many of the people that had visited the area over the years, or were raised in the area, are reaching retirement or early-retirement age.
- Pollution, crime and traffic are making life in metropolitan areas more difficult, and for many, the prospect of living in a rural area more attractive.
- Relatively high land and business values in metropolitan areas have created substantial leverage to cash in and invest in Southwest Colorado.
- Information technologies and the decentralization of professional services in the global economy have opened up new opportunities to conduct business in rural areas.
- A desire to connect or reconnect with a "sense of community" and "sense of place," often rooted in family histories with ties to small town and agrarian living is attracting people to rural areas.
- Lifestyles built around outdoor recreation are an increasingly strong priority to potential migrants, young and old.
- As desire to reconnect with nature and advocate environmental protection motivates people to move to more natural non-urban settings.
- Communities surrounded by public lands desired for their recreational and aesthetic, and environmental values and public access.

## Summary of Settlement, Population and Land Use Trends 1890-2001

The land use patterns that have evolved in the current Amenity Migration Era are overlaid on the settlement patterns that have been carried forward from previous eras. Matrix SP-1 provides and a summary overview of this progression. It also links the settlement patterns in each era with the related land attachments and cultural values, because these attachments and values have also been carried forward into the current era.

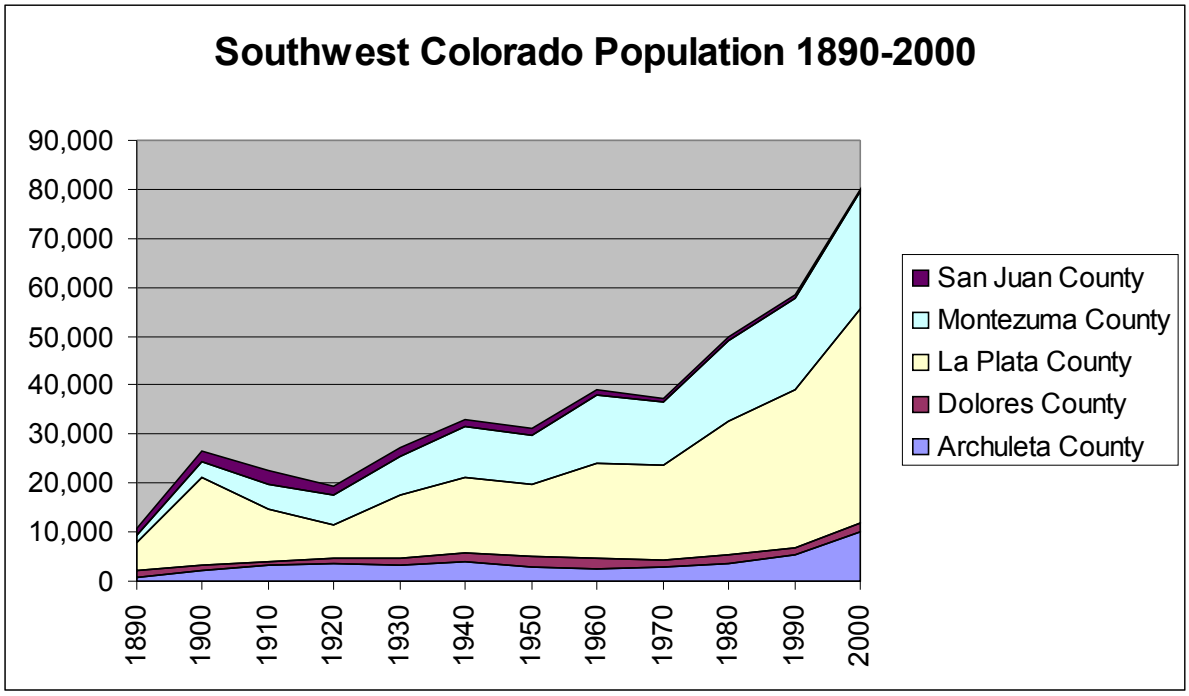
**Matrix SP-1**

| Era | Settlement and Land Use Patterns | Land Attachments and Cultural Values |
|---|---|---|
| Pre-European Migration/Settlement | Seasonal and weather cycle migration. Extensive stone and pottery artifacts. Extended family oriented settlements. | Game, water, farmable soils, stone, wood, vistas, communal/family life. |
| European Settlement/Mining Era | High altitude hard rock mining boom towns supported by saw mill and agricultural supply towns, set in irrigated valleys, connected by a narrow gauge rail system. Private property established via homesteading laws, with unclaimed land remaining in the public domain. | Resource extraction, survival, community building, overcoming of geographic isolation, establishment and protection of private property rights and water rights. The free and open use of the public domain. |
| Resource Conservation Era | Agricultural land base expanded by improved irrigation, soil conservation and production technologies. Development of community water supplies and rural electrification. Export oriented agricultural & timber production. Creation of public land management agencies, regulations, & resource development programs. Aggressive fire suppression on public lands. | Community identity and heritage tied to the improved productivity of land and water resources. Prosperity tied to natural resource exports. Survival of boom-bust cycles tied to family and community self-sufficiency. Ambivalence towards federal land management: recognizing need for orderly allocation/use of grazing, timber, water resources, while resisting federal intrusion on traditional rights and practices. |
| Post WW II Energy Development Era | Leasing and development of sub-surface resources impacts primarily agricultural uses. Significant compensation only to surface owners who control mineral rights. High paying jobs, stimulate local economies, spur population growth and provide needed cash to supplement farm income/improvement. High export values underwrite transportation access to isolated areas, expand local tax base. | The infusion of cash and high paying jobs is appreciated along with resulting community improvements and tax base development. Concerns about the transience of the oil-field work force are off-set, in part, by local job opportunities, and many oil field migrants becoming permanent members of the community. Tension develops over pipeline impacts on private land. |
| "New West" Tourism/Amenity Migration Era | Increasing residential development in agricultural areas and adjacent to public land boundaries. Resort, second home, gated community development. Diminishing access to public lands. Impacts on rural infrastructure and services. Increasing property values. Degraded, and in some cases enhanced ecological conditions. Increased recreational use on public land coupled with tourism accommodations in towns, along highway corridors. Increase in environmental regulation and protected areas (e.g. wilderness). | Values oriented towards open space, wildlife, aesthetics, and recreation. Desire to participate in community life vs. desire for isolation. Commitment to manage/restore degraded private land vs. passive approach to land ownership. Advocacy for environmental protection on public land vs. advocacy for maximizing recreational access/use. Tendency to access local/federal land use planning opportunities. |

Figure SP-1 below depicts the population trends reflecting settlement patterns during the eras summarized in

Matrix SP-1 above. Growth from 1890 and 1900 during the "European Settlement Era" was lead by mining and followed by a bust between 1900 and 1920 after the silver crash. Growth resumed between 1920 and 1940 during the "Resource Conservation Era" lead by opportunities related to land and water available for agricultural and renewable resources livelihoods. After decline during the WW II years, growth resumed during the 1950s driven primarily by oil and gas development. The 1970s begins the "Era of Tourism and Amenity Migration."

**Figure SP-1**




It is crucial to emphasize that the eras that created the settlement patterns summarized in the Matrix SP-1 are not "over" or "ended." Rather these eras overlay and overlap one another and should be viewed as major themes in the unfolding of local settlement patterns, which persist and become part of the mosaic, as new eras of emphasis unfold.

The remains of pre-European settlements by the Ancestral Puebloans are a dominant physical, intellectual and economic feature of the region. The more nomadic Ute and Navajo Indians that came in after the Anasazi are a cultural and economic presence of increasing significance.

The mine, town, agricultural valley, and transportation corridor patterns, established during the era of European Settlement, provided the template upon which everything that followed was set. The damage done to the public domain during this era established the constraints and possibilities for public land restoration.

The Resource Conservation Era saw the establishment of boundaries, jurisdictions, authorities and public land management policies intended to preserve, allocate, and provide access to the natural, scenic and recreational resources that have attracted and complemented the settlement, land use and economic development patterns that have evolved. The Resource Conservation Era also saw the strengthening of the agricultural infrastructure and practices that have sustained the valley component of the town, valley, and public land mosaic.

The Post WW II energy development era resulted in improved transportation, community expansion and infrastructure development, and expanded property tax base, royalty income and good wages (some of which helped stabilize and improve farm and ranch operations). The post World War II energy development era was also a period of expanded timber production. The development and availability of energy and wood products was part of a societal trend towards increasing mobility and a major expansion in the nation's housing needs and

expectations. Increased mobility supported amenity tourism, which in turn stimulated amenity migration and the resulting development, which have become dominant themes in the New West Amenity Migration Era.

What needs to be emphasized about the New West transition from amenity tourism to amenity migration is the central role played by the public lands in attracting tourists and migrants. In an article entitled "The West's Forest Lands: Magnets for New Migrants and Part-time Residents", published in the Winter/ Spring 2001 edition of The Rocky Mountain West's Changing Landscape, economist Larry Swanson analyzes "Population Change in Non-Metro Areas Nearby Forest Service Lands in the West". This analysis demonstrates a doubling of the growth rate when the 1980s the 1990s are compared, and that net migration growth is more than double natural change in these communities. There is a parallel increase in per capita income when these two periods are compared.

> "These lands, managed and planned for by the US Forest Service and Congress, have become and will remain 'magnets' for new migrants in the West. The management and use of these lands have heavily shaped the history of settlement and economic development in the West. They will continue to do so in the future, but under vastly different circumstances and prerogatives than in the past."
> [Swanson page 25]

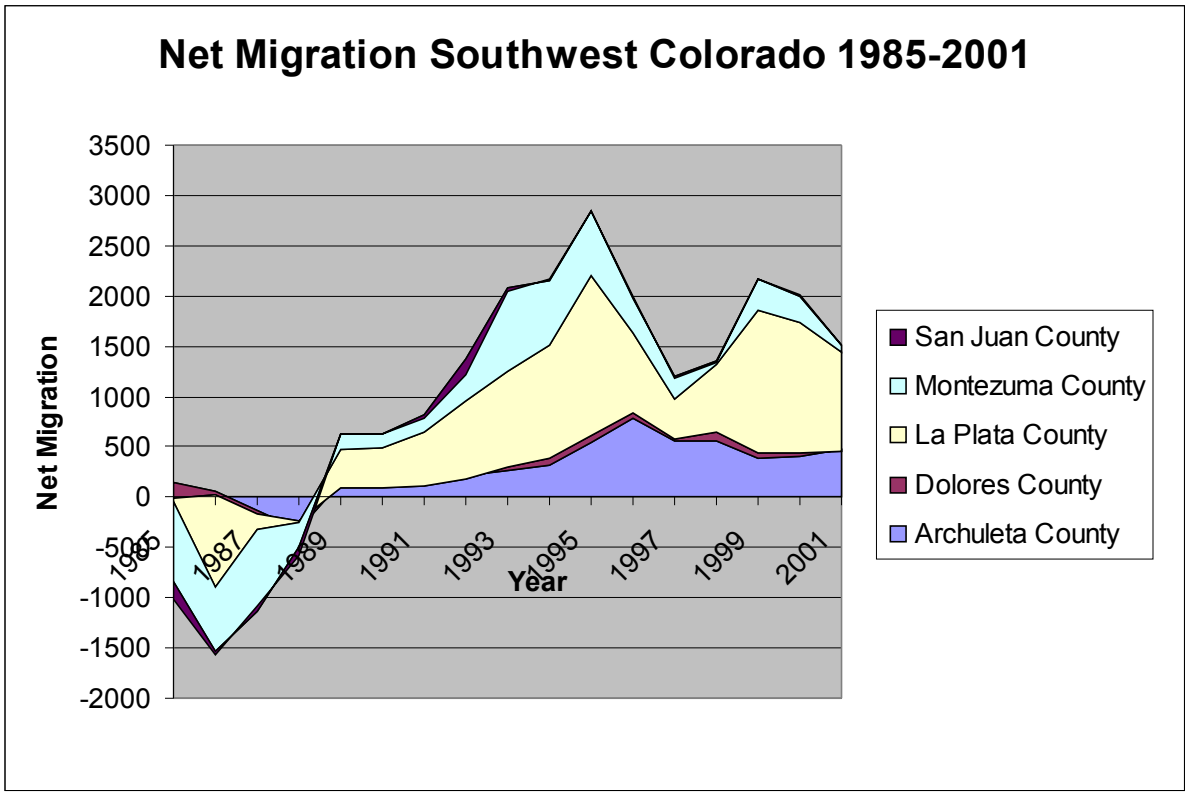
Table SP-1 presents Total Natural Population Increase and Net Migration in the five Southwest Colorado Counties from the peak of the out-migration in the mid-1980s through 2001. Natural population increases were at their highest between 1985 and 1988 (with a peak of 720 in 1985) at the same time that negative net migration was peaking at -1,561 in 1986. From 1992 on when positive net migration ranged from 1,200 to 2,800, natural increase dropped below 400. These figures provide a clear contrast between the wind-down after the energy bust of the mid-1980s and the acceleration of the amenity migration boom during the 1990s.

**Table SP-1**
**Southwest Colorado Region 9**
**Natural Population Increase and Net Migration 1985-2001**

| Total Region 9 | 1985 | 1986 | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 |
|---|---|---|---|---|---|---|---|---|---|
| Natural Population Increase | 720 | 486 | 556 | 502 | 435 | 452 | 395 | 425 | 394 |
| Net Migration | (1,010) | (1,561) | (1,087) | (577) | 623 | 626 | 792 | 1,222 | 2,045 |
| Total Region 9 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | |
| Natural Population Increase | 399 | 375 | 391 | 328 | 353 | 291 | 346 | 361 | |
| Net Migration | 2,160 | 2,840 | 1,988 | 1,188 | 1,345 | 2,165 | 2,004 | 1,508 | |

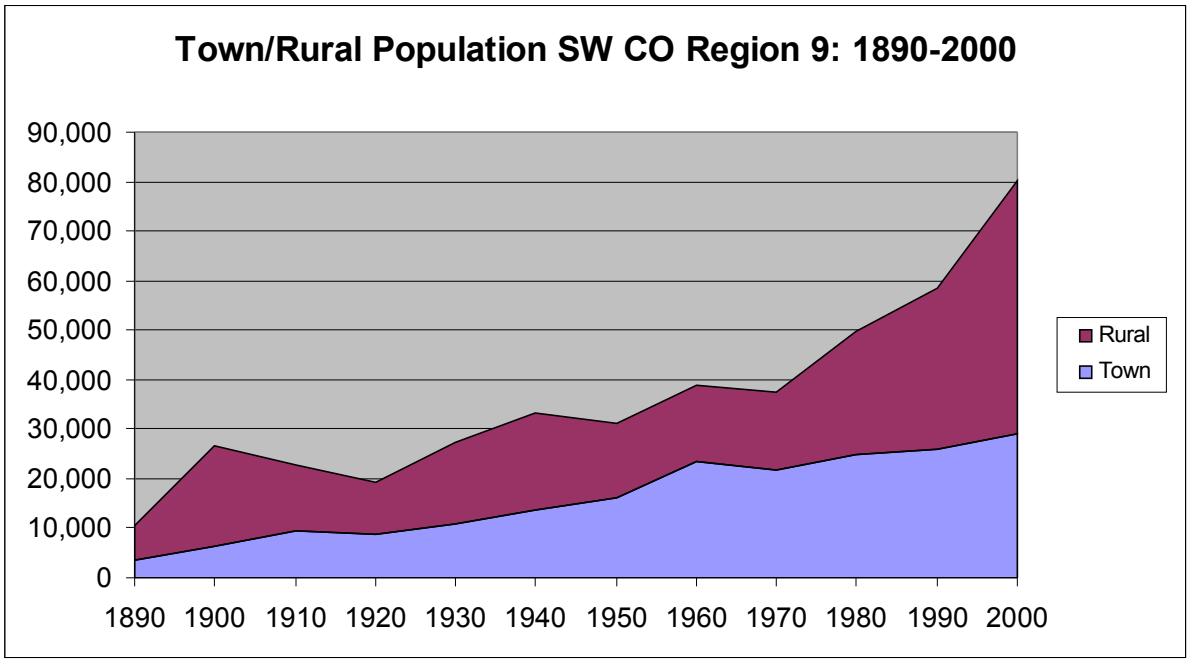
Figure SP-1 above shows the population curve get noticeably steeper in the 1990s. Figure SP-2 below is a graphic presentation of the net migration trends presented in Table SP-1

**Figure SP-2**




The other trend since 1970 has been an increasing amount of residential growth in the unincorporated or rural areas under County jurisdiction as opposed to growth in the cities and towns. Figure SP-3 below depicts this trend over the entire period from 1890-2000.

**Figure SP-3**




During the mining led boom at the turn of the century most of the population growth was outside of incorporated towns. The same can be said during the resource conservation era boom from 1920 to 1940. The energy boom from 1950-60s stimulated much more "in town" growth. From the 1970s on growth in the rural areas resumed

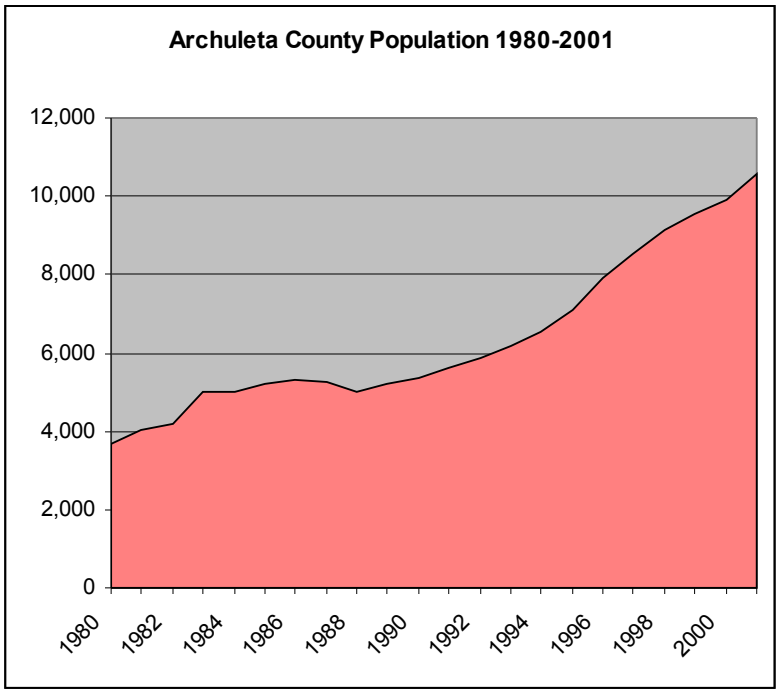
dominance.

Most of the new settlement is in the agricultural and wooded belts between the Towns and the public lands. People want to live in an agrarian or semi-agrarian setting. The result is sprawl moving outward from the towns as people try and combine country living with an easy commute to town. There is also sprawl moving inward from the public land boundaries as people seek the seclusion and recreational access to public land.

A more refined County level analysis of population and settlement patterns during the period from 1980 to 2001 reveals a shift from the job lead growth of the early 1980s to the amenity lead growth of the 1990s. This analysis, beginning with Figure SP-4 will also address the unique population and settlement trends within each County.

# Archuleta County Population and Settlement Trends and Patterns

**Figure SP-4**

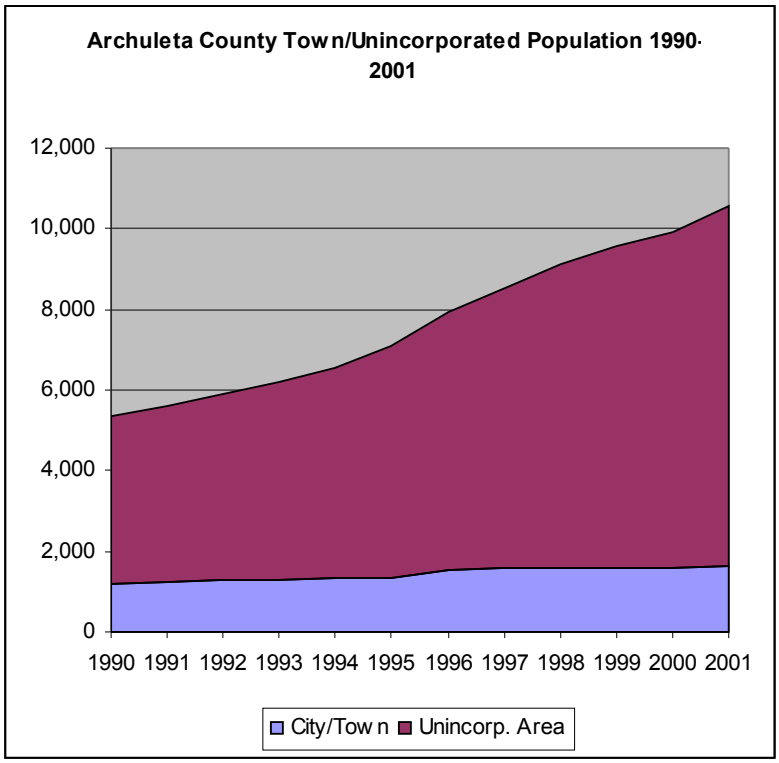



**Archuleta County Population Trend 1980-2001**

Archuleta County experienced the flat growth characteristic of Region 9 as a whole between 1984 and 1990 with a surge in amenity migration beginning in 1994 that shows no signs of abating.

The net result was that the population of Archuleta County nearly doubled increasing 97% from 5,345 in 1990 to 10,548 in 2001.

**Figure SP-5**




**Archuleta County Urban Rural Trend 1990-2001**

Virtually all of the growth was in the unincorporated portion of Archuleta County. Between 1990-2001 Pagosa Springs grew 34% from 1,207 to 1,621, while the incorporated area of the County grew by 4,798 or 116%

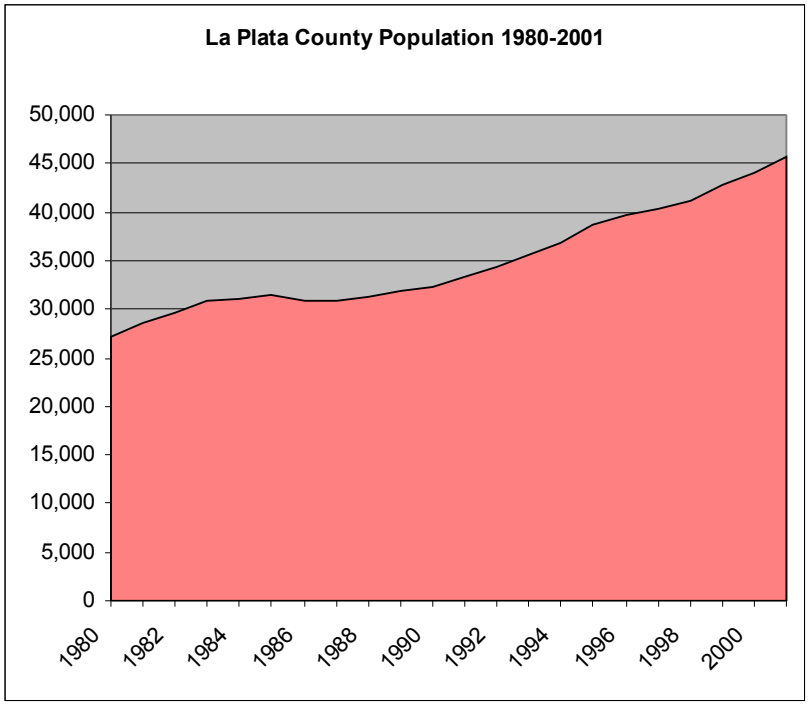
It is important to note however that much of the "unincorporated growth" was in the Pagosa Lakes area, which exceeds the population of Pagosa Springs but has never been incorporated or annexed into Pagosa Springs. There is, however substantial commercial development in the Pagosa Lakes area that has been annexed into the Town of Pagosa Springs, creating a very favorable revenue base for the Town.

**Key Population and Settlement Trends and Issues in Archuleta County:**

- Archuleta County has experienced steady growth of 3-5% per year making it one of the fastest growing smaller counties in Colorado.
- The unincorporated growth in Pagosa Lakes now exceeds the population of the Town of Pagosa Springs. The result is that a relatively high density of residential development in Pagosa Lakes which is supported by infrastructure that must be maintained by a combination of County, Special District and Homeowner Association service providers.
- Pagosa Lakes includes a mix of year round and seasonal homes as well as a golf course, with associated resort and commercial development incorporated by the Town of Pagosa Springs. The commercial annexations have put the Town in a strong revenue position.
- There is a proposed resort development on the Mineral County side of Wolf Creek Ski Area which could stimulate population growth, economic growth and housing costs even faster than recent trends.
- Highway 160, in addition to being a major east west State Highway corridor, is also the primary transportation artery for movement in and around Pagosa Springs/Pagosa Lakes community.
- The combination of these factors present challenges in County governance, revenues, infrastructure and service capacities which are likely to intensify.

# La Plata County Population and Settlement Trends and Patterns

**Figure SP-6**

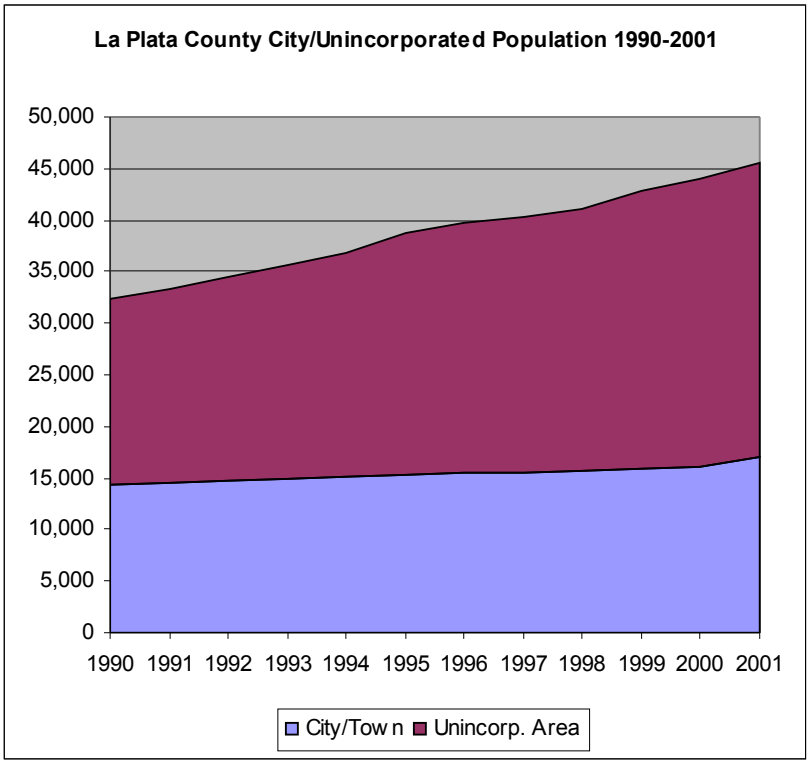



**La Plata County Population Trend 1980-2001**

La Plata County came off of the slump of the mid to late 1980s with consistent amenity driven growth of between 3% and 4% per year.

Between 1990 and 2001 the County grew by 13,330 or 41% from 32,284 to 45,614

**Figure SP-7**




**La Plata County Urban Rural Trend 1990-2001**

Throughout the 1990s most of the growth was occurring in the unincorporated areas of the County (58% between 1990 and 2001 compared to 18% in Durango which grew from 12,439 to 14,708). Bayfield nearly kept pace with the unincorporated county growing by 56% from 1,090 to 1,695.

Beginning in 2000 there were the beginnings of a shift back towards growth in the Towns. From 2000-2001 the Towns grew by 6% while the unincorporated county grew by only 2.5%. Durango grew by 786 while the unincorporated areas grew by 706. This "urbanizing" trend appears to be accelerating supported by recent and proposed annexations.

**Key Population and Settlement Trends and Issues in La Plata County:**

- **Water and Sewer Infrastructure.** A substantial portion of recent growth in unincorporated areas of the County, has been in larger scale, relatively high density residential developments such as those in the "Durango West" area. With no municipal or public water and sewer provider, such development often ends up being serviced by privately owned water and sewer systems, resulting in uncertainty as to long term service capacities, costs, and compliance with public health standards. The Historic constraints on development in rural La Plata County related to water will in part be overcome by the development of the Animas La Plata Project currently under development and the creation of a rural water system in the east part of the County with water from Vallecito Reservoir.
- **Transportation Infrastructure.** Another issue related to higher density rural residential development is the impacts on transportation arteries. By example, Highway 160 West of Durango is able to handle the traffic generated by development in the Durango West area and points west without much problem. By contrast traffic generated on 160 to the east of Durango creates rush hour bottlenecks at the "Farmington Hill" intersection of Highway 160 and 550 and congestion along Highway 160 from Bayfield to Durango. The new hospital and Three Springs development will intensify this congestion until substantial highway improvements are made.
- **Wildfire Hazard.** Much of the rural development over the last two decades has been in wooded areas with the potential for catastrophic wildfire. The magnitude of this threat became tangible in the summer of 2002 with the 75,000 acre Missionary Fire and ensuing flooding and mudslides. Beyond prompting dramatically increased wildfire mitigation efforts by property owners, and the consideration for more "Firewise" land use planning standards, it is likely an additional factor in a shift back towards living in Town. The realities of the Missionary Ridge fire have also sparked opposition to higher density development in the Vallecito Lake Area.
- **City/Town Growth.** Statistical indications for 2000-2001 in Figure SP-7 suggest that growth is shifting back to the Towns, and are pick up momentum with the convergence of the above issues (i.e. problems related to water and sewer, traffic and wildfire).
    - **Durango**. The real estate market in Durango has continued to heat up even as it has cooled down in unincorporated La Plata County. Durango has out-grown its natural geographic boundaries and growth proposals in any direction are controversial particularly in terms of traffic, and the "rural character" that has prompted so many to settle out of Town in the past few decades. A major annexation has been approved in Grandview to the East and River rejected for Trails Ranch to the north of Durango, and conceptually approved on Ewing Mesa just southeast of downtown. Any growth in and around Durango will also impact traffic in "Historic Durango" where Highway 550 and 160 converge. As geography forces Durango to leap-frog there is a related concern about the health of the commercial core of Durango as commerce continues to follow the spread of residential develop along with major services such as the new Mercy Medical facility proposed for Grandview.
    - **Bayfield** has more that doubled in population from 724 in 1980 to 1,695 in 2001. The surrounding area provides plenty of opportunity for Bayfield to grow. In 2005 Bayfield updated its comprehensive plan setting the stage for increases in density and opportunities for future subdivisions and annexations. A key issue in the growth of Bayfield is improved connections to Highway 160 which divides traditional Bayfield to the South from the residential and commercial growth areas to the North of Highway 160.
    - **Ignacio** showed no population growth during the 1990s but has seen substantial commercial development related to the Sky Ute Casino. Future plans to develop a 51,000 square foot office building to house the Tribal Growth Fund which includes the Tierra Group, a Tribal real estate development enterprise would suggest potential for future residential and commercial growth in Ignacio. The Town has recently acquired a 65 acre parcel of land and is planning the development of 110 family housing units. There are other properties adjacent to Ignacio that could be developed in the future.
- **Resort Development** began in the 1970s with the development of Tamarron Golf Course and Resort (now known as the Glacier) in the North Animas Valley between Durango and Purgatory Ski Area (now

known as Durango Mountain Resort). This trend continued over the next 25 years with condominium developments in and near the Ski Area and assorted small destination resorts and retreats. The potential scale of resort development took a quantum leap in 1999 when big time real estate developers took a majority interest in Durango Mountain resort. A proposal has been approved by the La Plata County Planning Commission and upheld by voter referendum to "build up to 1,649 housing units and 410,000 square feet of commercial space in a series of "villages" along both sides of Highway 550." Construction is set to begin on the first phase of a 25 year master plan to develop 612 acres. ["DMR construction begins", Durango Herald, September 24, 2003].

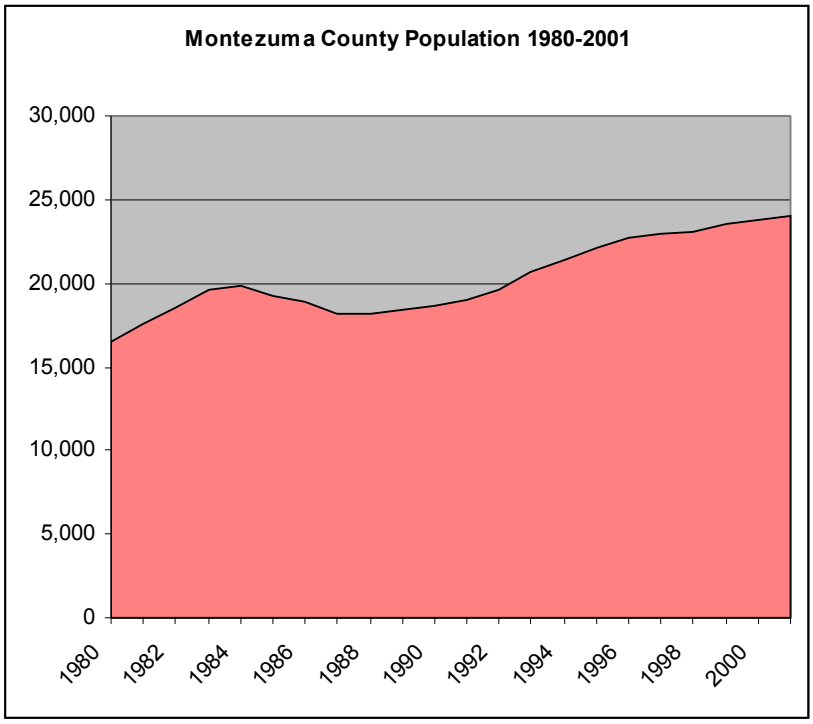
If the 25 year master plan for large scale resort development materializes the effects on the Animas River corridor between Durango and Silverton will profoundly affect the issues outlined above of water, sewage disposal, transportation infrastructure and the future growth and commercial health of Durango and Silverton. The evolution from a "family ski area" initially sited on National Forest land in the 1960s into a major resort complex is reflective of the growing complexity and integral nature of National Forest, local government and private sector planning and decision making.

- **Coal Bed Methane.** Coal bed methane extraction began in earnest in the 1980s supported by tax incentives. Technology and market forces combined to make this a feasible without tax subsidies. As a result well spacing has been reduced from the original one well per 320 acres to a recent decision allowing one well per 80 acres. Many of the existing and proposed wells are on private land with impacts intensified by smaller, high value parcels owned by amenity oriented residents. The result has been intense public objection which has spawned tighter county regulation, more environmental oversight and public input by the Colorado Oil and Gas Commission, which is beginning to prompt MOUs between the County and energy companies which address increased mitigation of impacts on private property and public infrastructure. Proposed methane development on public land, particularly in the HD Mountains has also been controversial particularly in isolated, unroaded areas. Since the HDs are already under lease, regulation can only address the intensity of development coupled with mitigation measures.

- **Community/Public Land Interface.** Durango and the Animas Valley are closely bounded by National Forest Land. The interface between the public lands and the local economy will be discussed under the "Work Routines" Descriptor. The recreational interface will be described under the "Recreational Activities" Descriptor.

# Montezuma County Population and Settlement Trends and Patterns

**Figure SP-8**



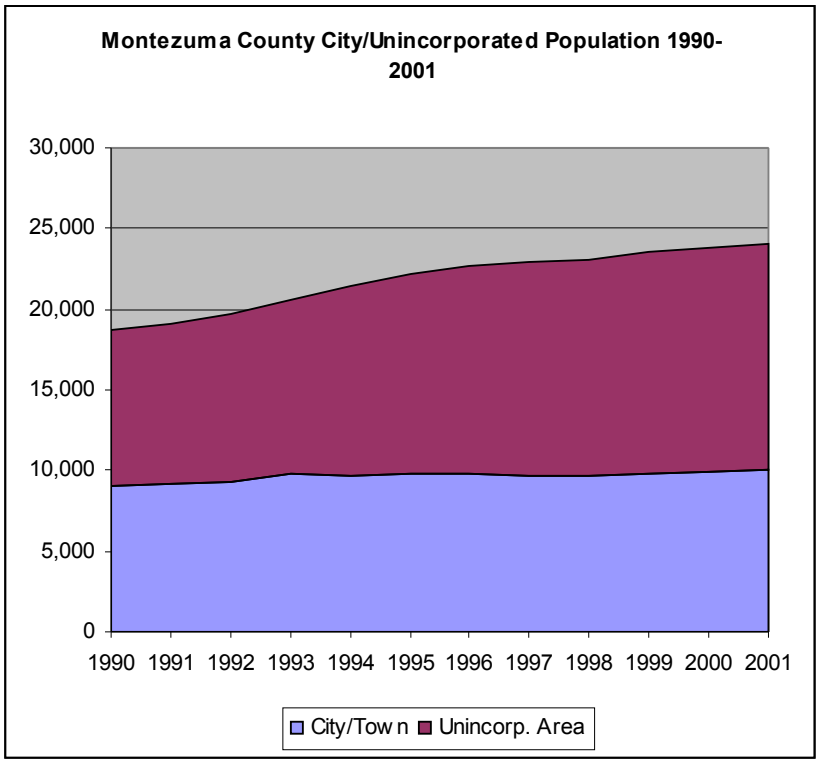

**Montezuma County Population Trend 1980-2001**

The population decline in the mid-1980s from 19,826 in 1984 to 18,110 in 1988 reflects the wind-down in construction of McPhee Reservoir and the Shell $CO_2$ gas field.

The population grew to reach previous levels and began to escalate in 1992. Between 1990 and 2001 the population increased 29% or 5,327 people for a total of 24,000.

While the growth and decline of the 1980s was related to natural resource development, growth during the 1990s was amenity driven.

**Figure SP-9**




**Montezuma County Urban Rural Trend 1990-2001**

Most (80%) of the amenity driven growth of the 1990s occurred in the unincorporated areas of the county.

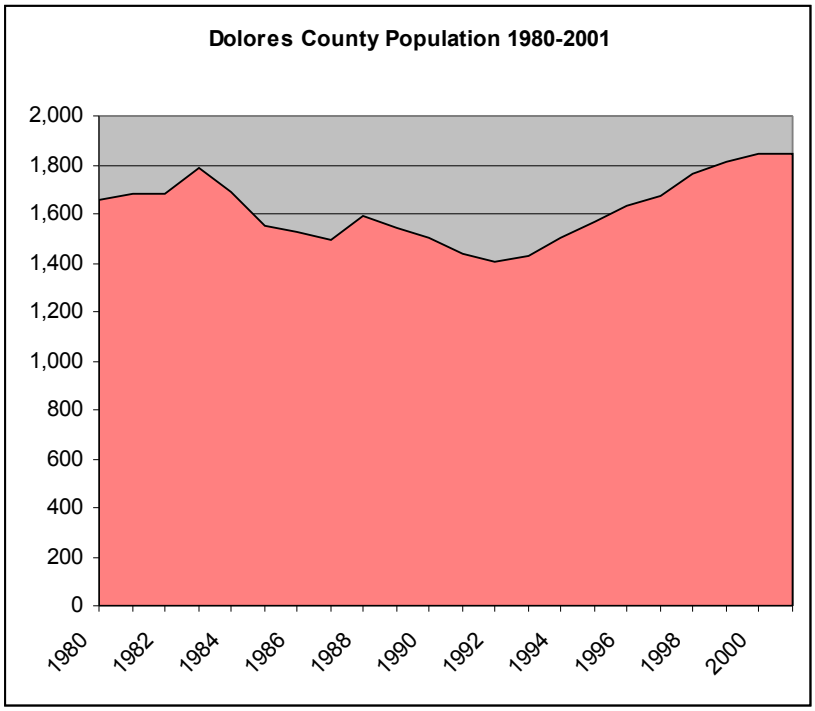
Between 1990 and 2001, the unincorporated areas grew by 4,241 (44%) to 13,921. The population in Dolores began and ended at 866. Mancos grew by 289 people (34%) to 1,131, and Cortez grew by 797 (11%) to 8,081.

## Key Population and Settlement Pattern Trends and Issues in Montezuma County:

- **Low Density Rural Residential Subdivisions.** Most of the growth in Montezuma County during the 1990s was low density rural residential development. The availability of rural water in most parts of the County facilitated subdivisions of three acre lots, which could accommodate on lot septic systems. Much of the three acre lot land subdivision occurred in land dominated by pinyon juniper and ponderosa pine forests because of its limited agricultural value and the seclusion provided by wooded land. Montezuma County also continued to provide affordable land for people interested in 10 to 40 acre irrigated ranchettes.
- **Introduction of Comprehensive Planning and Zoning and the Future of Agriculture.** As growth picked up steam in the early 1990s the aesthetic and economic impacts of "rural sprawl" became increasingly apparent resulting in successful voter referendum in 1994 directing the County Commission to move forward with a comprehensive land use plan and code. With active participation by the agricultural community the plan and code resulted in a Landowner Initiated Zoning system which encouraged cluster development and facilitated the establishment of zoning to protect neighborhoods that wished to remain agricultural.
- **Escalating Land Values and the Future of the Valleys and Towns**
  - **Montezuma Valley/Cortez.** Much of the productive agricultural land in the Montezuma Valley has been moved into agricultural zoning. Recent subdivision has been primarily in the pinyon-juniper landscape. The open parcels in and around the City of Cortez, have not seen the establishment of a zoning pattern leaving a lot of unresolved questions about the future expansion of Cortez and the desire to retain openness and agricultural character of the landscape along highway corridors and surrounding future urban growth.
  - **Mancos Valley/Mancos.** Growth in the Town of Mancos and the Mancos Valley is in part driven by commuting proximity to both Durango and Cortez. The productive agricultural lands south of Highway 160, adjacent to BLM, Mesa Verde National Park and Tribal land has remained primarily in agricultural use, with the caveat that ownership is beginning to move from traditional ranching families to affluent buyers who pursue ranching or horse breeding and training as an amenity lifestyle. Much of this land has been placed in agricultural zoning. The Mancos Valley from Highway 160 North to Summit Ridge is less productive agriculturally and has been subject to more subdivision. A major attraction in the North part of the Mancos Valley is proximity to the boundary of the San Juan National Forest. The other harbinger of change in the Mancos Valley is the approval of a golf course at Echo Basin Ranch and a proposed 95 residential unit resort development. Impact on water resources, traffic the rural character of the neighborhood have prompted intensive citizen involvement in the land use review process.
  - **Dolores Valley/Dolores.** The construction of McPhee Reservoir has limited the expansion of the Town of Dolores down-river and to the west. The narrowness of the Dolores River Valley upriver and to the east of Dolores, it's scenic appeal and its location along the Highway 145 corridor connecting Dolores to Telluride has resulted in escalation of land values in the Valley. The combination of a newly permitted gravel mine and a proposed golf course and resort lead to the appointment by the County Commission of the Dolores River Valley Citizen Working Group early in 2002. In addition to water quality and gravel mining recommendations, the Group recommended capping density in the Valley and establishing a Transfer of Development Rights (TDR) System that will require development beyond a base density of one unit per 10 acres, including resorts, to purchase development rights from other property owners in the Valley. These recommendations were adopted into the Montezuma County land use plan and code in 1994 and 1995 and the administrative framework for managing TDR transfers is in place.
- **Montezuma Land Conservancy.** The Montezuma land conservancy was established in the late 1990s and has conserved approximately 5,000 acres of primarily agricultural land via conservation easements. The land conservancy has also been active in and effort to conserve scenic areas along the San Juan Skyway. In 1995 the County received $4.6 million in matching funds for Great Outdoors Colorado and is working on the purchase of scenic easements in the Mancos and Dolores River Valleys.
- **Pipeline Corridors.** A major source of controversy involving the interface between public and private land use has been pipeline corridors. Long time property owners have built up grievances over the development of past pipelines, while property owners driven by amenity values, often owning smaller pieces of property, feel strongly impacted.

# Dolores County Population and Settlement Trends and Patterns

**Figure SP-10**

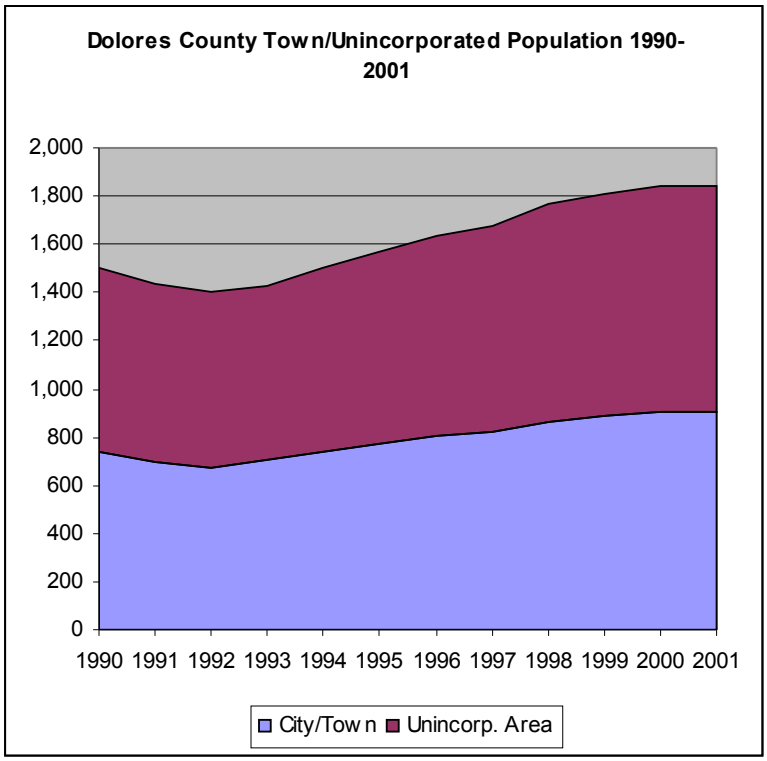



**Dolores County**
**Population Trend 1980-2001**

The Dolores County population of 1,884 in 2000 was at the highest level since 1940-1960 when Rico was an active mining town, dry land bean farming was at its most prosperous and the economy of Dove Creek was underwritten by mining.

The 1980s peak of 1,789 in 1983 reflects employment from uranium mining in Southeast Utah, and construction of the CO2 and Dolores irrigation projects. The energy bust and agricultural recession drew population levels down to 1,403 in 1992. The recovery to 1,884 in 2001 most likely reflects Dolores County realizing its share of the amenity migration boom of the 1990s.

**Figure SP-11**




**Dolores County**
**Urban Rural Trend 1990-2001**

During the 1990s County population grew by 340 (23%) equally split between town growth 171 and rural growth of 169 people leaving that total County population of 1,884 almost evenly split between the Towns (906) and the rural county (938).

A trend of note is that the population of Rico grew by 129% from 92 in 1990 to 211 in 2001 while Dove Creek started at 643 in 1990 (down from 826 in 1980) fell to 589 in 1993 and expanded to 695 in 2001 for growth of 8% during the 1990s. During the previous high of the 1940s-60s Dolores County population was 2,196 with 966 in Dove Creek and 353 in Rico.

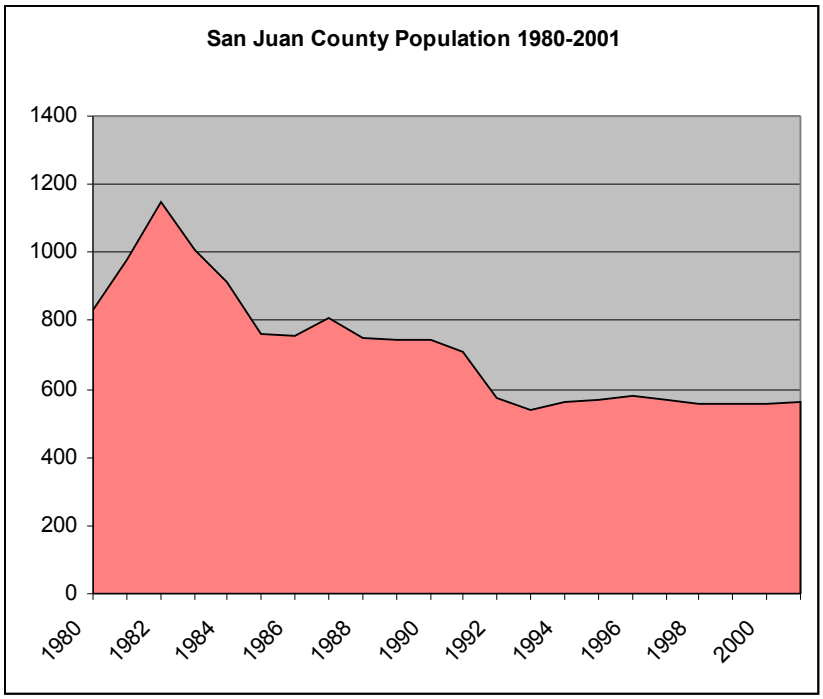
**Key Population and Settlement Pattern Trends and Issues in Dolores County:**

- **Two Distinct Physical and Human Geographic Units.** The east and west sides of Dolores County are very distinct both in geographic and cultural terms.
  - The **Western or Dove Creek side of Dolores County** was settled around dry land farming, which has been supplemented by the availability of irrigation water from the Dolores Project. Historically farmers and rural residents outside of Dove Creek had to haul water for domestic use. Beginning in the 1990s, rural domestic water supplied by Montezuma Water Company has been extended into rural Dolores County prompting increasing non-agricultural settlement, much of it in the form of 35 acre parcels. A primary appeal of western Dolores County is its wide open vistas.
  - The **Eastern or Rico/West Fork** side of Dolores County is characterized by a forested, mountainous landscape which is the watershed into the west fork and main stem of the Dolores River. Limited private land is confined to river valley floor for the most part, with the upland watershed in predominately National Forest ownership. Property in the West Fork has become high value with both seasonal and year round homes being developed. Once mining phased out, Rico began to regain population largely as a home to commuters working in Telluride. In recent years, Rico has an increasing seasonal and retiree population. The Town does not have a centralized sewer system, but new development (both existing and planned) is predicated on getting centralized sewer in place. The Town has been working with developers and property owners to address the protection of the river corridor from development and address the checkerboard of public and private land ownership resulting from a long history of mining claims.
  - **Mining and Energy Development.** Rico was settled as a hard rock mining community. The presumption is that the mining era is over and the primary focus with regard to mining involves preservation of historic structures and the clean up of mine contamination, particularly with regard to the Dolores River and tributaries. Much of the private land owned by large mining companies has or is being sold off for residential development. There are, however, significant mine clean-up issues in the process of being worked out. A related land use concern is the degree of disturbance that will result from clean up activities. The west end of Dolores County has a history of uranium mining employment in western San Miguel County. Given rising energy costs, it is possible that uranium mining could resume, and that the milling operations contemplated in the energy boom of the 1980s could be reconsidered.

- **Challenges of Supporting Infrastructure and Services.** A population base of less than 2,000 people, makes it challenging for Dolores County and the Towns of Dove Creek and Rico to maintain, physical infrastructure, services and schools both in terms of limited users and limited revenues. For example, Dolores County has an extensive road system to maintain and the onset of rural residential development is putting more pressure on the infrastructure. Likewise the Town of Rico is at a point where centralized sewer is becoming critical, but the small customer base makes supporting a system problematic. These communities also face the challenge of keeping their school systems viable.

# San Juan County Population and Settlement Trends and Patterns

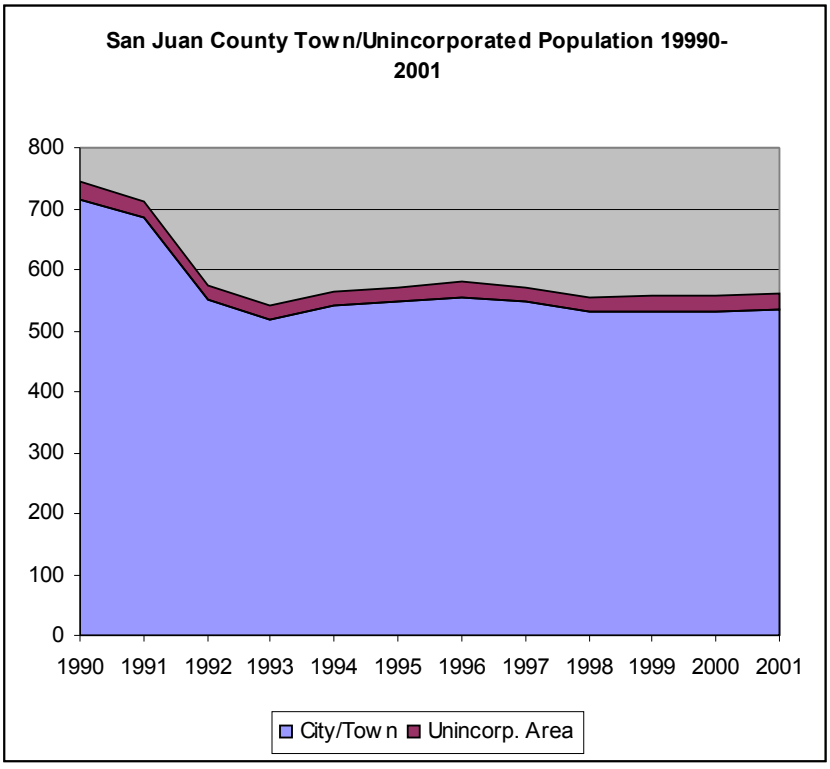
**Figure SP-12**




**San Juan County Population Trend 1980-2001**

San Juan County's population peak of 1,170 in 1982 was the highest since the 1940s and 50s when it was around 1,400 people. From 1982 on as mining began to wind down the population dropped to the 750 range, dropping to 540 in 1993 and staying below 600 for the rest of the decade. It is likely that the population that depended on mining continued to migrate out or to shift to amenity based occupations during the remainder of the 1990s. This was made possible by the amenity based economic foundation contributed by tourism from the Durango brought in by the Silverton narrow gauge railroad.

**Figure SP-13**




**Montezuma County Urban Rural Trend 1990-2001**

Most of the buildable private land in San Juan County is within the Town of Silverton, so population growth in unincorporated areas has never been a major factor. This reality relative to opportunities for population growth presents a challenge in that Silverton has a very finite land base for residential and commercial expansion. There are opportunities under exploration for consolidating patented mining claims and exchanges for San Juan Public Lands.

## Key Population and Settlement Pattern Trends and Issues in San Juan County:

- **Seasonal Tourism Supplemented by Vacation Home Development.** The intensity of high altitude winters coupled with the seasonal nature of tourism generated by the Durango to Silverton narrow gauge train and people driving the "Million Dollar Highway", has resulted in a significant number of seasonal residents. In recent years Silverton has been discovered by people interested seasonal homes to enjoy the pleasant summer weather and recreational opportunities. Property values have been rising steadily based on these trends. Assessed valuation in San Juan County increased for $28.6 million in 2003 to $40.5 million in July of 2005, an increase of over 40% increase in two years. ("Silverton Turns the Corner" Durango Herald, July 30, 2005).
- **Skiing and Year Round Economics.** From the time of the Sunnyside Mine closing in 1991, there was talk about the potential to create a year round attraction to capitalize on challenging ski opportunities the Mountains around Silverton. This vision is coming to fruition with the development of Silverton Mountain Ski Area which offers unique and challenging opportunities known as Extreme Skiing. A 2005 Record of Decision increased the Silverton Mountain capacity from 80 skiers per day to as many as 475 per day on a 1,300 acre 40 year lease of BLM land, which will likely support winter employment and business opportunities that could help to expand the current 600 year round residential population, which is expected to double in the foreseeable future. Another advance is the opening of Kendall Mountain to more localized family skiing which is an amenity for year round family residents. (Durango Herald, July 30, 2005)
- **Limited Private Land Base in the Silverton Area.** Silverton is bounded by public land with very limited additional private land available for development. This limitation is compounded by the patchwork of patented mining claims that are a significant part of the undeveloped private land base. Careful land use planning including exploring the balance between commercial and residential land uses is an important consideration. Some of the increase in assessed value referenced above results from homes recently built on purchased patented mining claims. By the summer of 2006 there are expected to be 45 to 92 additional buildable parcels in Silverton's West Side Improvement District. (Durango Herald, July 30, 2005)
- **Building on Mine Heritage/High Altitude Setting.** Silverton has long been the home of and avalanche school. Efforts to position Silverton as a center for mine reclamation and high altitude ecological studies resulted in the formation of the Mountain Studies Institute, a non-profit corporation focused on research and education related to high altitude physical and social ecology.
- **Cost of Living and Affordable Housing.** As the year round economy begins to rebound. employment opportunities that are taking the place of the old mining economy pose cost of living and affordable housing challenges. Colorado Housing Inc. plans to add 6 houses and 24 affordable apartments to the existing 12 self-help housing units on Green Street. An additional 20 acres on Highway 550 has been purchased for workforce housing. (Durango Herald, July 30, 2005)

# Contemporary Southwest Colorado Settlement Pattern Issues Requiring Intergovernmental/Citizen Collaboration

An assessment of settlement patterns in Southwest Colorado makes it clear that one of the "vastly different circumstances" in the planning and management of public lands is that most of the key issues require federal, state and local involvement, supported by active citizen engagement. Another key circumstance is the extent to which land use patterns from all of the settlement eras summarized in Matrix SP-1 come into play. By extension, effective citizen engagement will need to integrate the land attachments, knowledge and values that persist from the composite of settlement eras that are integral components of the New West.

Agricultural land use patterns past, present and future are a keystone to the virtually all of the land use and land health issues that are driving governmental decision making and citizen action.
The list of current settlement and land use issues below, carry forward from every settlement era. The keystone to virtually all of these issues is the changes in the agricultural landscape, past present and future:

- **Agricultural lands are being subdivided at an alarming rate**, fragmenting the natural systems and covering the landscape with houses and roads.
- **Working farms and ranches are being squeezed by the rapid expansion of rural residential development,** marginal economic returns, coupled with debt and property values that are escalating far beyond the agricultural worth of the land.
- **Wildlife habitat is being diminished and wildlife impacts are being concentrated** on the remaining large parcels. The valley part of the system is particularly important as winter range for wildlife that summer on National Forest Land.
- **Noxious weeds are epidemic** of both private and public land.
- **Wildfire hazards** threaten the growing number of subdivisions and homes being developed in wooded areas, often adjacent to public land boundaries. Wildfire also represents a potential threat to the health of watersheds that are integral to community water supplies.
- **Water quality and quantity** call for a watershed approach to address the interrelationships between vegetation, wildlife, livestock and the quality and quantity of water available for farms and ranches, towns and fish. Abandoned mines, as well as coal bed methane drilling, sewer and septic discharge are key water quality issues.
- **Oil and gas drilling** in the past tended to occur on farm and ranch scale properties where it could usually be worked around, and where a single landowner often derived substantial benefits from royalties and/or damages. The current controversy over coal bed methane drilling is intensified in rural residential subdivisions where nuisance and property value impacts are greater and benefits are marginal or non-existent.
- **The scenic qualities of the valleys and highway corridors** are being eroded. In a visual inventory of the San Juan Skyway remaining pasturelands interspersed with National Forest Land are among the most highly rated scenic areas on the Skyway.
- **Heritage resources** from all of the settlement eras summarized in Matrix SP-1 need to be inventoried and protected as cultural and economic assets.
- **Historic access points to public lands** are being shut off as ranches are sold or subdivided and no trespassing signs appear.
- **Large scale resort developments** are being proposed and developed in areas that have been in private agricultural ownership or accessible for public use on public land.
- **County and rural infrastructure, services and budgets** are being strained as distances and volume of demand increase for road maintenance, school bus routes, law enforcement and emergency services.
- **County land use decisions become ever more complex and contentious** with the increasing number of small parcels, surrounded by desirable and developable agricultural parcels. Land use hearings to consider large-scale rural subdivisions and municipal annexations fill the hearing room,

regardless of open space, wildlife or traffic mitigation features.

- **Major land use issues increasingly involve both county and federal jurisdiction.** Every one of the above issues is likely to involve local, federal, and often state authorities, responsibilities, policies, and decisions.
- **Government needs citizen engagement to effectively address land use issues.** It has become increasingly clear that government can no longer presume to address these issues alone, at a time when citizens are demanding meaningful participation in governmental decisions, and forming a wide range of non-governmental citizen based organizations to address issues of community and landscape health.

While this list of issues is daunting, a variety of assets exist, and are being developed, to address many of these issues. The last two issues on the above list local/state/federal collaboration and citizen engagement are key to effectively addressing all of the other issues on the list. The concept of "Community Based Stewardship" brings together intergovernmental collaboration, citizen engagement, ecosystem stewardship and community health.

The social capacity to make Community Based Stewardship a reality will be carried forward into the Publics, Networks and Supporting Organization Descriptors. But first the "Work Routine" and "Recreational Activities" Descriptors need to be developed.

## San Juan Plan Revision Applications: Settlement Patterns

1. Organizing the Study Groups by human geographic units allows for the interaction between settlement patterns, public land uses and associated values. Each of the three District Study Groups is reflective of the three HRUs which represent distinct elements in the historic, cultural, economic and land use mosaic of Southwest Colorado.
2. The diversity of participants in each of the Study Groups provides perspectives grounded in all of the settlement eras, economic dimensions, land attachments and cultural values relevant to the settlement patterns in Southwest Colorado. This diversity includes longevity, livelihood, and land stewardship perspectives.
3. The use of Management Themes by Study Group members and Agency staff as an interactive tool used to shape land management strategies to be considered in San Juan Plan Alternatives, serves as a link between community settlement patterns and the public land uses.
4. Theme 7 which deals with "Residential Forest Intermix" has prompted site specific discussions about the interface between private and public land uses in areas such as fire hazard reduction, recreational access, and wildlife habitat.
5. Theme 8, "Permanently Developed Areas" also prompts consideration of congruent development, both current and expanded on public and private land, such as plans for extensive development of Durango Mountain Resort.
6. There are also larger scale thematic decisions that are directly related to settlement patterns such as watershed health, water quality and the scenic backdrop that the San Juan Public lands provide for communities.

# Cultural Descriptor: Geographic Boundaries and Natural Features

*A geographic boundary is any unique physical feature with which people of an area identify. Physical features separate the activities of a population from those in other geographic areas.*

The primary jurisdictional focus for this analysis are the five Counties in Southwest Colorado (La Plata, San Juan, Archuleta, Montezuma and Dolores Counties), and the Federal Lands that fall within the Boundaries of these Counties, including the San Juan National Forest and BLM Resource Area (including Canyons of the Ancients National Monument), and Mesa Verde National Park. The distinct geographic boundaries and natural features that define the region are fundamental to the settlement patterns, recreational activities and the evolution of the local economy and work routines.

When one looks at the "Human Resource Units" or HRUs (Figure 1 on page 6) defined by the cultural descriptors that drive this analysis, it is striking how closely the county boundaries, the ranger districts on the San Juan National Forest, and culturally defined HRUs are aligned:

- The Dolores Ranger District corresponds with the Montelores HRU, which encompasses Montezuma and Dolores Counties.
- The Columbine Ranger District corresponds with the La Plata HRU, which encompasses La Plata and San Juan Counties.
- The Pagosa Ranger District corresponds with the Pagosa HRU, which encompasses Archuleta County and the southern part of Hinsdale County.

The consistency of these jurisdictional alignments is reflective of the distinctiveness and dramatic variation of geographic features that have shaped settlement patterns, as well as economic and recreational uses of the landscape including:

- The dramatic range of elevations (from 14,000 to 5,000 feet);
- the variation in terrain from Alpine, to red-rock canyon and high desert;
- the related variation in vegetation types including high altitude spruce/fir forests, mixed conifer forests, ponderosa pine/gambel oak forests, pinyon juniper forests, sage brush, and developed farmland, and
- The San Juan and Dolores River systems from headwaters to river bottom valleys.

Under the Settlement Pattern Descriptor, the analysis will focus on how the settlement of high altitude hard rock mining communities were supported by timber, agricultural and trade communities in the lower valleys and connecting transportation networks. Subsequent migrations were driven by oil and gas development, tourism and amenity migration. Geographic and natural features have shaped all of these migrations and the way in which settlement has been placed on the landscape. The interface between settlement patterns, geographic features and land ownership is profoundly relevant to the trends that will be discussed under the Settlement Patterns Descriptor.

In the Recreational Activities Descriptor the role of geographic and natural features are primary shapers of the range of recreational activities that attract tourists and migrants, and support livelihood and lifestyle for local residents. In the Work Routines Descriptor the ties of livelihood and work routines to the land will also be apparent.

The Geographic Boundaries and Natural Features map on page 8, depicts key features, boundaries, and "place names" that will provide the geographic foundation upon which Settlement Patterns, Recreational Activities, and Work Routines will overlay.

# San Juan Plan Revision Applications:
# Geographic Boundaries and Natural Features

1. A major component of the community involvement process in the San Juan Plan Revision has been Community Study Groups organized around the Montelores, La Plata and Pagosa Human Resource Units (HRUs) depicted in Figure 1.
2. The three HRUs are shaped by a combination of natural and human geography and correspond very closely with the three Ranger Districts on the San Juan.
3. The San Juan Forest and BLM Resource Management Plans are being developed congruently using a landscape based approach to gather knowledge and input from the community study groups.
4. Each of the three San Juan Districts were divided into approximately 10 “landscapes” based on a combination of geographic features and “sense of place”, to provide a structure for Study Group discussions and the integration of Study Group input with natural resource information.
5. Geographic Information Systems (G.I.S.) provide a critical tool in integrating social and ecological information input and analysis.