

GREENLEE COUNTY'S MINING ECONOMY SUBJECT TO BOOMS AND BUSTS

GILA BOX RIPARIAN NATIONAL CONSERVATION AREA

Designated: 1990
Location: East-Central Arizona, 140 miles northeast of Tucson, near the town of Safford
Size: 22,047 acres
Counties: Greenlee (Rural without air service, 0.47 percent of county land base)
 Graham (Rural without air service, 0.60 percent of county land base)



Gila Box Riparian National Conservation Area is not far from the only other riparian NCA, the San Pedro; and like the San Pedro, it protects a significant area of perennial water in what is overwhelmingly a dry land. The NCA



Near Bonita Creek in the Gila Box Riparian National Conservation Area. Bureau of Land Management.

actually contains parts of four perennial waterways: a 23-mile stretch of the Gila River, 15 miles of Bonita Creek, parts of Eagle Creek, and the San Francisco River. Despite being a small protected area, only 22,047 acres, it provides habitat for more than 2,000 species of birds including the endangered peregrine falcon, southwestern willow flycatcher, and bald eagle, as well as mammals including mule deer, kit foxes, mountain lions, bobcats, and reptiles such as rattlesnakes and gila monsters. The term Gila Box refers to the steep, rocky canyon walls that border the Gila River in some sections.

When the Gila Box Riparian NCA was designated in 1990, part of the motivation was to protect this rare riparian area, vital to so many species, from damage due to cattle grazing and off-road vehicles. As a result, cattle have been moved out of the riparian zone and confined to upland areas, and vehicle travel is limited to designated roads. Hikers, bird watchers, rafters, and horseback riders continue to enjoy the area.

Before and After Designation

The economies of Graham and Greenlee counties have experienced very different rates and types of change over both the longer term, from 1980 to 2002, and since the Gila Box Riparian NCA was designated in 1990. Table 1 shows that Graham County has experienced solid growth in all four indicators in both time periods.

TABLE 1 Socioeconomic indicators in Graham County, Arizona

	1980	1990 (year designated)	2002	% Change 1980 - 2002	% Change 1990 - 2002
Personal income (millions)	359	393	541	51	38
Population	22,920	26,611	33,213	45	25
Per capita personal income	15,681	14,784	16,300	4	10
Total employment	6,757	7,753	10,388	54	34

As Table 2 and Figure 1 illustrate, Greenlee County’s economic woes began long before the Gila Box Riparian National Conservation Area was designated in 1990, and have actually improved considerably since designation. Over the longer term, from 1980 to 2002, total personal income and population in the county declined by about one-third, while per capita personal income and total employment decreased by two percent.

TABLE 2 Socioeconomic indicators in Greenlee County, Arizona

	1980	1990 (year designated)	2002	% Change 1980 - 2002	% Change 1990 - 2002
Personal income (millions)	243	157	163	-33	4
Population	11,422	8,029	7,861	-31	-2
Per capita personal income	21,268	19,576	20,741	-2	6
Total employment	4,435	3,607	4,339	-2	20

Greenlee County experienced increases in all indicators from 1990 to 2002, after the Gila Box Riparian NCA was designated, as Figure 1 illustrates. Although the population continued to decline, it did so at a more modest rate; and total employment increased by 20 percent.

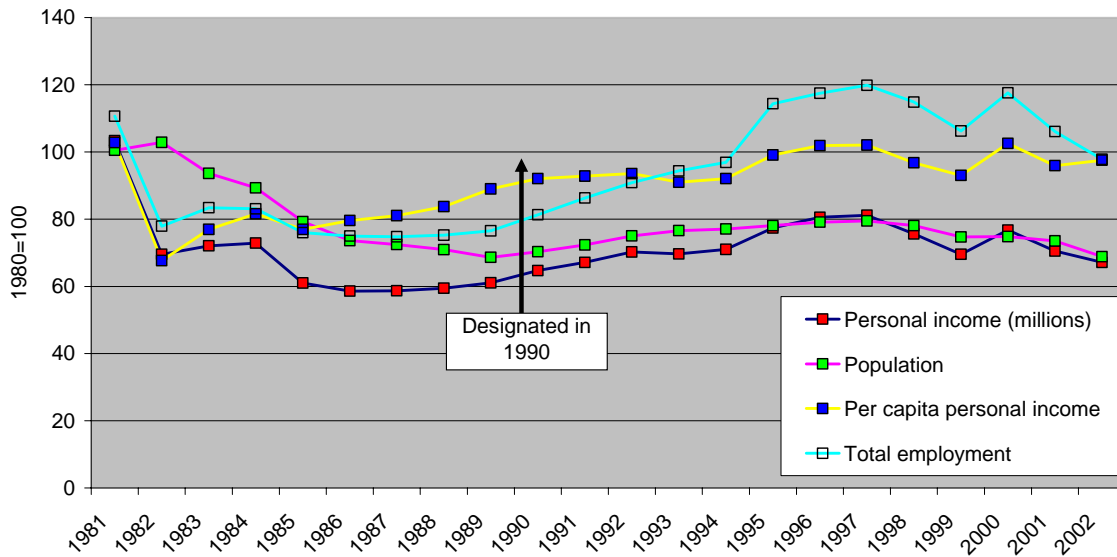


FIGURE 1. Growth of key economic indicators in Greenlee County, Arizona

Since economic trends have been much less positive in Greenlee County than in Graham County, the following section will focus on Greenlee to examine whether or not the designation of Gila Box Riparian NCA might have played any role in the county’s economic downturn.

Economic Change in Greenlee County

Copper mining has long been the economic backbone of Greenlee County. The county is the location of the world’s largest open pit copper mine, the Phelps-Dodge Mine in Morenci. Two-thirds of the population of the county’s largest towns, Clifton and Morenci, are employed in mining and minerals processing¹.

Full information about changes in the levels of employment and personal income over time was not available due to disclosure restrictions²; but as Figure 2 indicates, at its height in the 1980s, mining accounted for 78.6 percent of personal income in the county in 1981, the last date for which information is available.

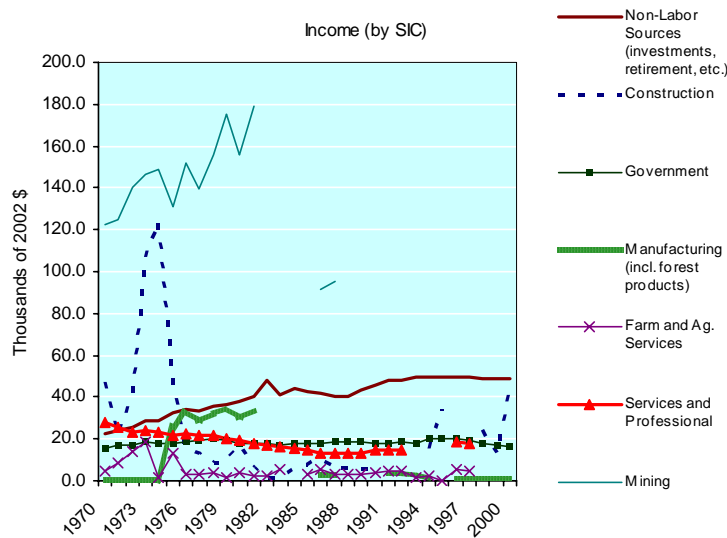


FIGURE 2. Personal income by major sector in Greenlee County, Arizona

Source: U.S. Department of Commerce, Bureau of Economic Analysis, Regional Economic Information System, 2004.

Because of its dependence on mining, Greenlee County has a highly specialized economy, far more than the U.S. median county, as Figure 3 indicates.

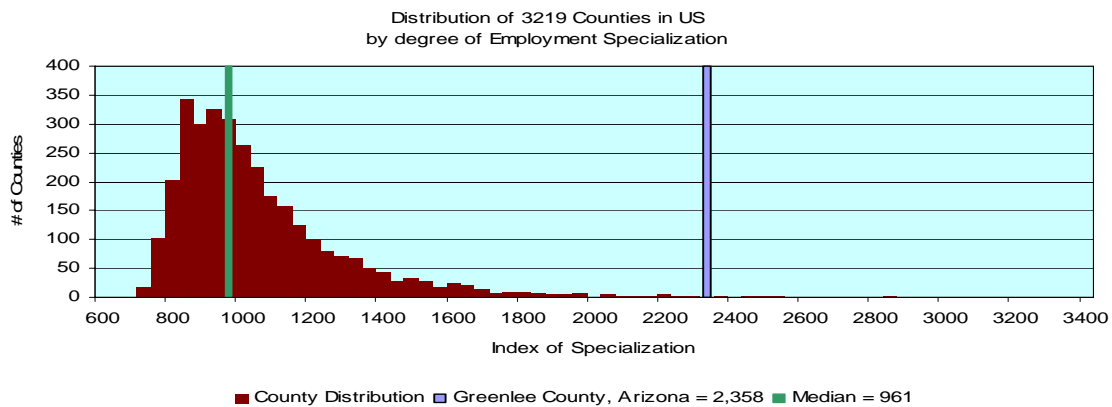


FIGURE 3. Economic diversity in Greenlee County, Arizona compared to U.S. median county.

Source: 2000 Census.

Figure 4 illustrates the county’s share of personal income from mining relative to other sectors, and compared to the median U.S. county. Other sectors, such as retail trade, health care, various types of services, and manufacturing account for fairly minor portions.

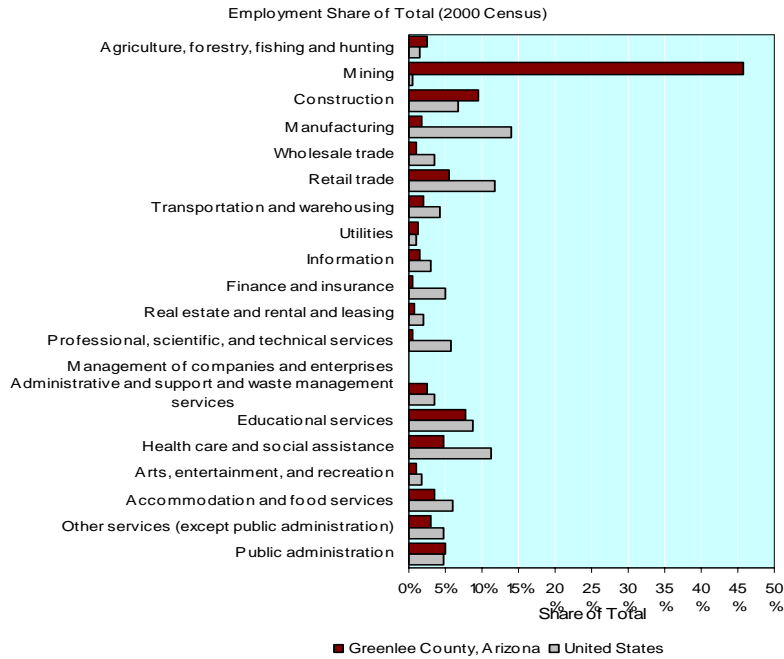


FIGURE 4. Employment by sector share of total in Greenlee County compared to median U.S. county, 2000.

Having an economy that is highly dependent on only one sector, particularly one as vulnerable to fluctuations in the world markets as mining, can create an unstable economy. This has clearly been the case in Greenlee County, as Figure 5 indicates. Patterns of economic instability also seem to be correlated with population losses; the sharp decline in personal income in the early 1980s appears to have started a trend toward population loss, from which the county appears not to have recovered despite economic upturns since then.

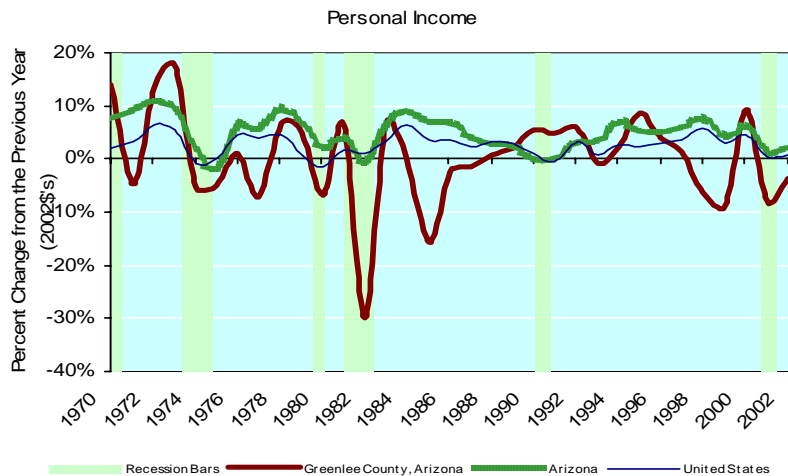


FIGURE 5. Total personal income stability in Greenlee County, Arizona

Source: Bureau of Economic Analysis, Regional Economic Information System 2002 Table CA30.

The designation of Gila Box Riparian NCA did not affect the copper mining industry in Greenlee County. However, the NCA's resource management plan did place new restrictions on cattle grazing in the riparian zone. Agricultural data indicates that the designation in 1990 did not, however, have much of an effect on the county's net farm income, particularly considering the effects that a severe, long-term drought has had on Arizona cattle ranchers. Earnings from livestock remained steady at about \$4.6 million from 1988 through 1992, and then plunged to around \$2.4 million from 1993 to 1995 (well after designation), as the drought worsened².

Conclusion

Significant downturns in the economy of Greenlee County are related to variability in the county's chief source of employment and income, copper mining, and are unrelated to the designation of the Gila Box Riparian National Conservation Area. Nor has the NCA caused declines in the county's net farm income. Instead, the NCA could help make the area more attractive to both tourists and long-term residents who are not involved in the mining industry, thus increasing economic diversity and stability.

¹ <http://www.azcommerce.com/doclib/COMMUNE/clifton-morenci.pdf>

² A disclosure restriction means a gap exists in the data. Information has been suppressed by the U.S. Department of Commerce to avoid disclosure of confidential information.

³ Source: Bureau of Economic Analysis Regional Economic Information Service 2002 CD Table CA45.

