A SPECTRUM OF CHANGE

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A Spectrum of Change

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Throughout the duration of this project, as well as before, it is my parents to whom I owe the greatest debt. They are the ones who keep me going when the task at hand seems too tough.

"I may not know where I'm going,
but I sure know where I come from."

Appalachia: An Overview

This research project is entitled *A Spectrum of Change* in order to represent the changes which have affected a copper mining community in southeastern Tennessee. This community was chosen for two major reasons--first, members of my family worked at the mines in the early part of this century, both as miners and foremen. The second reason I chose to study the Copper Basin is its unique history. Because these are the only copper mines in the area bounded by the Mississippi and Ohio Rivers, I wanted to see if its "life story" was similar to that of coal mining areas in the same region. This project seeks to determine the economic, environmental, and historical impact of mining on the Copper Basin. It also compares the Polk County area to similar areas of Appalachia.

In an attempt to answer these questions, this project begins with an overview of Appalachia's history, including how it has been "rediscovered." The major federal agencies currently affecting Appalachia are then discussed; lastly, I will present a survey of Central Appalachia coal communities. A case study which focuses on the mining district of Polk County, Tennessee is presented in Chapter Two. A summary of the three issues from Chapter One begins Chapter Three and then the issues are applied to the Polk County Case Study, in order to compare it with Appalachian coal mining areas. The final section of this

project will examine current economic development recommendations for Appalachia and the South and determine how they are applicable to Polk County.

The Appalachians are really two different mountain formations which developed at different times. The ancient Appalachians, which once stretched from Newfoundland to Alabama, were formed in the "Appalachian Revolution" some 500 million years ago (People's Appalachian Research Collective). New England's mountains are granite which seeped from a crack in the earth's crust; the top layers of earth have since eroded to expose this granite. The southern Appalachians were formed at the same time when subterranean rock buckled, forming parallel ridges which one can still see. The Alleghenies are "the newer Appalachians." (Research Collective) They were once the floor of a sea west of the Appalachians until the water receded and the earth buckled, forming more ridges.

Since the removal of the Indians in the late 1830's, the Appalachians have been inhabited largely by mountaineers noted for their independence. The region is still defined geographically, yet economics is now intertwined with this definition. The Appalachian Regional Commission has delineated three subregions, "each having distinctive income, population and employment characteristics." (*Appalachia*) Northern Appalachia consists of parts of New York, Pennsylvania, Ohio, and Maryland, as well as most of West Virginia. It is the largest subregion by area and also

the most populous. Due to the change from rail to truck transport and the emergence of cheaper, more modern industrial facilities in the South, this area has inherited "a stagnant economy, an outmoded physical structure, an unattractive urban invironment and an abused natural environment." (*Appalachia*) Central Appalachia is the area recognized for it dependence on coal. It includes all of Appalachian Kentucky, the remaining West Virginia counties, northwest Appalachian Tennessee, and seven counties in Virginia. This subregion has consistently endured low socioeconomic standards, including inadequate housing and health services. The 1960's brought high unemployment and outmigration to this region, but it is now "beginning to place greater emphasis on community development" in order to diversify and stabilize the economy (*Appalachia*). Southern Appalachia, as defined by the ARC, runs from Appalachian Virginia down through Tennessee, North Carolina, and South Carolina to Georgia, Alabama and Mississippi. It has typically "been characterized by a low rate of urbanization, economic dominance by extractive and labor intensive industrial activities...low levels of income and below-average quality of life." (*Appalachia*) Beginning in the 1950's the area experienced rapid industrialization due to its favorable business climate--cheap labor and low taxes. It is now undergoing the exportation of those jobs as companies go abroad to find even lower wages and taxes.

Since the post-Civil War period, people have "rediscovered" Appalachia on four different occasions. Robert Munn distinguishes these four times as 1870, 1895, the early 1930's, and the early 1960's. The first rediscovery was a literary one, which spawned from America's fondness of regional novels. As a participant in the second rediscovery, Dr. William G. Frost described Appalachia as "the backyards of nine states;" he set out to make America aware of the regions problems (Munn). His efforts brought money and volunteers to the region and by 1920 Appalachia had over 100 mission school. The third rediscovery which Munn cites occurred in the early 1930's. This attention focused on the coal fields and involved citizens such as Theodore Dreiser. This discovery· brought few changes to the area however, and "the miners were left in substantially the same position as before." (Munn) These first three rediscoveries were relatively short-lived, while the last, typified by the Appalachian Regional Commission has been in existence for twenty-five years.

The Appalachian Regional Development Act established the Appalachian Regional Commission (ARC) in 1965. Originally the Commission provided social and economic development assistance to 360 counties; this number has since grown to 397. President John F. Kennedy inititiated this attempt to provide aid for Appalachia with the President's Appalachian Regional Commission (PARC), due not only to his visit to West Virginia in 1960, but also to the

urging of eight governors from the region (Watts). In addition to the geographic boundaries of Appalachia, the PARC moved to establish particular socioeconomic Appalachian conditions, including:

> 1) Low income, 2) High unemployment, 3) job deficiencies, 4) Lack of urbanization, 5) Deficits in education, 6) Deficits in living standards, 7) Population changes, and 8) Unique economic resources (Watts)

The ARC is comprised of the governors of member states (or their representatives) and a Co-Chairman who is appointed by the President. Since its establishment the ARC has taken steps to diminish the substandard conditions listed above. It has poured billions of dollars into the region for the development of highways, airports, water pollution control facilities, libraries, hospitals, and schools. Howard Bray, in an article for *The Progressive*, says that the ARC has done much for the region but little for the people. While there are new roads and hospitals, people still live in substandard housing. He says that Appalachia will not recover until it unites and pulls itself up, when it quits relying on the Commission's money to do the work for it.

The Tennessee Valley Authority (TVA) was established by Act of Congress on May 18, 1933. Its goals, as stated in Section 23 of the Act, include:

> bringing about in said Tennessee drainage basin and adjoining territory...(1) the maximum amount of flood control; (2) the maximum development...for navigation

> purposes; (3) the maximum generation of electric power consistent with flood control and navigation; (4) the proper use of marginal lands; (5) the proper method of reforestation...and (6) the economic and social well-being of people living in said river basin. (Clapp 8,9)

In short, it was designed to control flooding, provide jobs, and electrify the valley. TVA's importance and size has varied throughout the years but it has maintained a considerable impact on Southern Appalachia.

TVA is now in its fifty-seventh year. Under current leadership, the agency is slimming down. It still operates the dams and hydroelectric power stations envisioned in 1933, but has since added nuclear plants. An article in Business Week magazine called this an "ill-advised 1970s foray into nuclear power" which lead to "weak management, bloated bureaucracy, and mounting debt." (Foust) Because of its previous economic development activity, TVA has undertaken projects such as "Transformations at Copperhill." "Transformations," as will be discussed later, was a job retraining program at Copperhill, Tennessee which began in 1987, with money from the Job Training Partnership Act.

The Copper Basin, discussed in Chapter Two, is the only copper mining area in Appalachia. In order to fully understand mining's impact on the Basin, it is helpful to look at other Appalachian mining areas. What is known as the coal area of Central Appalachia was developed in the late

nineteenth century. For more than one hundred years the mountaineer, "the rebels of industrialization--those who cherished their own independence," had lived on and worked their own land (Gaventa 48). Most of these settlers survived by subsistence farming; "nowhere did the self-sufficient family farm so dominate the culture and social system as it did in the Appalachian South." (Eller 3) As industrialization set in, the lives of these farmers were changed inexorably. Many farmers sold their land or mineral rights to the companies, figuring that they could move to the next mountain. These settlers did not realize that selling the mineral rights to their land meant that their land would be ravaged by mining whenever the company decided it was time. Farmers who resisted against selling were forced out, either by being "burned out," strong-armed or some other tactic. Huge blocks of land throughout West Virginia, northeast Tennessee, and southwest Kentucky were soon the property of absentee owners.

Wherever coal mines sprang up, company towns sprang up around them. In fact, company towns in the coal fields outnumbered independent incorporated towns more than five to one. Between 1900 and 1930 over six hundred company towns developed in these mountains (Eller xx). The people of these towns were at the mercy of the company; workers were hired and fired as the company saw fit. The "socializing agencies of government, church and school" were also controlled by the coal operators who

gave the money which built and supported them (Gaventa 67). As Ronald Eller points out, "those who controlled the jobs also controlled the political system, and those who controlled the political system used their power to exploit the region's natural wealth for their own personal gain." (xxi)

Workers by the thousands moved into these hamlets with the coal companies. Many of the towns became boom towns, experiencing rapid, unchecked growth. An example of this is Middlesboro, Kentucky which grew from sixty families to around five thousand settlers from 1886 to 1889. Middlesboro, like most boom towns, experienced conflict with this sudden growth. While the local elite supported the growth unconditionally, many of the mountaineers violently played out their feelings. "Though unorganized opposition to the new order was not apparent, unorganized conflict was." (Gaventa 71)

The spirit of a boom town, visualized in many westerns, is one of carelessness and high spirits. Violence was as much a part of these coal communities as it was a part of the Old West. Gaventa also provides that the violence may have been the miners' way of dealing with frustration. Because they were not able to react against authority, the workers fought each other or the weakest outsider. This lack of expression against authority "left an impression of latent consensus to their situation." (Gaventa 72) It was assumed that the miners were not displeased with their situation.

In *Power and Powerlessness* John Gaventa asserts that Middlesboro was somewhat of a special case in its apparent consent to the working environment; other coal towns were able to organize and fight for fair working conditions. In Jellico, just thirty miles from Middlesboro, miners secured the Jellico Agreement in 1893, "one of the most advanced agreements" of the time (Gaventa 73). The agreement provided for the uniform weighing of coal as well as allowing a miner to refuse to enter a mine if it appeared unsafe. This contract was successfully negotiated due to a strong joint union organization of eight area mines; it also proves that not all company towns were as strongly controlled as Middlesboro.

A characteristic of these mining towns which holds true today is absentee ownership. The Appalachian Land Ownership Study, a joint effort of community groups, scholars, and individuals associated with the Appalachian Alliance, was carried out in order "to document the land ownership patterns in the Appalachian Region and to describe their impact on rural communities." (*Mountain Life and Work*, April 1981) The Study found that one percent of the local population, along with absentee holders, corporations, and government agencies, controls at least fifty-three percent of the total land surface in the eighty counties surveyed. It also found that the United States government is the largest landowner in Appalachia with over two million acres. These statistics meant that more settlers had less land to live on.

Besides being deprived of the profits from mining, coal communities were hurt by their tax structures and company pay systems. Because the companies controlled the local governments, the property tax or mineral taxes were low or not strictly enforced. Counties rich in minerals received little money from the mining operations. With a company store system, employees' debts were generally removed from their paychecks. If the employees lived in a company house, their rent was taken from their checks also. As Gaventa noted, if a miner did not utilize the company's services, he would be out of a job. Profits did not stay in the area either, as absentee owners were located in northern cities or a foreign country.

By the early twentieth century, "coal was king of the industrial world." (Eller 128) World War I served to intensify coal's importance as production of war goods increased. This prosperity lasted until 1923 when America supported over 700,000 men in 12,000 mines. Northern coal mines, at this time, were overwhelmingly unionized, so when companies attempted to cut wages in an effort to keep up with the South's lower prices, violence ensued. In 1927, a depression throughout the coal camps began and by 1930 "unemployment, destitution, and despair stalked the coal fields." (Eller 157) This unemployment broke the chain which held miners at the grip of the company--wages, therefore, rebellion followed in the southeastern Kentucky and northeastern Tennessee coalfields (Gaventa 96).

In 1931 and 1933 two very different union upheavals occurred in these coalfields. The first involved both the United Mine Workers Association and the National Miners' Union. When the UMWA refused to back its over 11,000 members in a strike in 1931, most men left that union and joined the NMU, a Communist-backed organization. The NMU was not able to hold onto its members, who were being forced to leave. The Norris LaGuardia Act and the National Industrial Recovery Act of 1933 gave labor unions new life. The Recovery Act "was heralded as the 'charter of liberty', the 'Magna Carta' of organized labor." (Gaventa 117) The UMWA quickly went to work in the coalfields and gained support. John L. Lewis' leadership of this organization carried similarities to the coal companies with "his absolute authority over the union and contempt for dissent within it." (Gaventa 119) Until mid-century the miners support of the unions continued unflinching:

> "As the men gained job security, better wages, a pension plan, safer conditions, a hospitalization scheme...their unquestioning loyalty increased. Today, in many of the older miners' homes are found side by side on the wall pictures of John Kennedy, John L. Lewis and Jesus Christ. (121)

In the early 1950's the number of miners in Central Appalachia and their output was at a high. By the end of this decade, however, a decline hit this region which would last through the 1960's. Record numbers of miners were out of work and living below the poverty level; over one

million mountaineers migrated to northern metropolitan centers. From 1940 to 1960 the number of Appalachian miners dropped from 439,000 to 132,000 (Lewis). In 1960 John F. Kennedy visited West Virginia and witnessed the stark poverty of a coal camp. This sight contributed to the declaration of a "War on Poverty" and the development of the Appalachian Regional Commission.

The energy crisis of the 1970's brought coal production to extremely high levels. While a rejuvenation of the entire industry was expected, in reality the number of workers needed grew increasingly smaller. This was due to the mechanization of the industry and the growing use of strip mining. By 1979, Central Appalachia had the highest unemployment rate of any subregion. The hopes of prosperity remained unattainable for millions of Appalachian miners.

Just as the American economy is now turning to service industries, so is Appalachia. Tourism is strong in the region and employees millions of people, albeit at lower wages and with fewer benefits than manufacturing. The service sector grew from 1970 to 1980 by 400,000 jobs--a 59% increase. The mechanization of the coal industry continues and miners are having to look for work elsewhere. As Richard Couto stated in *Appalachia--An American Tomorrow,* "We have more jobs than before but they are different...These jobs pay less and require fewer skills."

Per-capita income and outmigration are two more Appalachian characteristics which deserve study. Per-capita income figures do have limitations for their use in research because the cost of living can increase more than an area's average income. Also, no distribution of income is discernable within a specific area, and government payments are included in the calculation of the income figures (Couto 81,85). Nonetheless, comparing Appalachian per-capita incomes to the United States average reveals much as to how the region lags behind the rest of the country. The South's per capita income from 1880 to 1900 was 51% of the national average (Cobb 24); this number rose to 84.2% by 1976. The Central Appalachian area is even further below the national average--69.9% in 1976. Outmigration of people was a problem in Appalachia throughout the 1960's. The following decade was "Appalachia's Decade of Change," however, as described by Jerome Pickard. The outmigration of people which occurred at a 6.2% rate from 1960 to 1970 swung to a 5.9% rate of inmigration, or 1,074,000 people, from 1970 to 1980 (Pickard). According to Pickard, these inmigration is a reflection of the nation's move away from large metropolises to smaller, less populated areas.

Appalachia has a long history which has led it to its current situation. While natives may celebrate their heritage, many outsiders see the mountaineers as a backward people, left behind in America's progress.

Agencies such as the Appalachian Regional Commission and the Tennessee Valley Authority were designed, in part, to help the Appalachian people catch up with the rest of America, yet figures such as per-capita income show that the Central Appalachian coal areas are making little economic progress. With an eye on those coal communities, we move to Polk County, Tennessee. This county has fragments of both the Appalachian mining and rural history, yet it stands out because it is rich in copper, not coal.

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The Case Study: Polk County, Tennessee

Nestled in the lower Blue Ridge mountains is a basin known in Indian times as Kawa'na, the home of Chief Duck. In the early part of this century it was known as the Ducktown Basin; now it is the Copper Basin. Specifically, the basin covers part of three states: Polk County, Tennessee; Fannin County, Georgia; and Cherokee County, North Carolina. The major copper mining and processing operations have always been based in Polk County.

Polk County is not distinctive simply because it is the site of the only copper mines in the southeast. The layout of the county is also unique, with part of the Cherokee National Forest covering approximately fifty-two percent of the land in a southeast-northwest diagonal strip. The county seat, Benton, is located on the northwest side of the forest, "below the mountains." Other traditionally rural communities in that area include Reliance and Ocoee. The copper mines are southeast of the forest around towns such as Ducktown, Isabella, and Copperhill. The Ocoee River runs through the lower end of the county and the Hiwassee traverses the north. The landscape of the county is diverse, with verdant flatlands and mountain peaks rising to 4300 feet. The southeastern part of the county also contains the "Tennessee Badlands" (Clay 49). This is an area of land cleared of timber, destroyed by sulfur fumes, and carried away by erosion.

The impact of the mining and processing operations in the Copper Basin are visible in many ways. The area is abundant with signs utilizing the word "copper." One such sign proclaims "Our Copper Made Us Famous, Our People Made Us Great!" The environmental impact of the operations is obvious; it outlives the many reforestation efforts. The purpose of this case study is to show the birth, growth, and decline of a "company town". Its importance comes from the growing number of similar Appalachian mining communities which are in decline. Perhaps by studying how this area is surviving, we can learn how to help others.

History to 1978

The Copper Basin has a unique history which covers almost two centuries and a wide expanse of changes. It has been presented in detail by Robert E. Barclay, an employee of the mining company for many years, in *Ducktown Back in Raht's Time*, *The Railroad Comes to Ducktown*, and *The Copper Basin 1890-1963*. Other sources include company literature, the *Polk County News*, and other newspaper and magazine articles.

In accordance with the 1835 Treaty of Removal, the Cherokee Indians were moved from the Polk County area in 1838. The Tennessee portion of Cherokee Territory was surveyed in 1837, following the practice of dividing the land into townships of six square miles. Division of the

townships into sections followed, with the sixteenth section reserved for schools (*Ducktown*, Barclay 11,12). The land was then sold on a sliding time-price scale, that is, the longer it took a piece of land to sell, the lower its price. Sales "below the mountain" were relatively brisk at $7.50 per acre, but the land in the Ducktown Basin moved little until the price reached one cent per acre (*Ducktown* 12). In 1839 the Tennessee Legislature created Polk County; the new county combined land of Bradley County with a small strip from McMinn. This strip was a fertile piece of land between the Ocoee and Hiwasee Rivers, presumably provided to give more farmland to the rugged county (*Ducktown* 21). The county was named after Tennessee governor and future president James Knox Polk.

Four years after the founding of the county, a prospector was panning for gold in a creek in southwestern Polk County. When he panned a yellowish material, he was certain he had found his fortune in gold. After a night of celebration, the prospector arose to find his gold had turned to reddish oxide crystals: copper. This discovery did not lead to immediate settlement of the Ducktown Basin, however. Mining operations did not begin until the 1850's; the people followed. The first purchase of basin land for mining purposes occurred in 1849 when a British agent bought 400 acres for $30,000. Barclay recounts this as the "first evidence of financial faith in the rusty splotches of terrain at Ducktown" (*Ducktown* 48).

The first company granted a charter to mine in the Basin was the Cocheco Mining Company in 1852. Two other companies were chartered in 1852, the Hiwasee and Culchote Mining Companies (*Ducktown* 50). These companies provided the basis not only for an influx of settlers into the formerly isolated basin, but also for an industry which would control its people for over one hundred years. People from different parts of the the western world began settling the Ducktown area. Some came looking for jobs, but others were brought by the companies for their skills, including a group of Cornish miners and mechanics requisitioned in 1853 (*Ducktown* 35). Barclay describes this first decade of mining as a "state of ferment"; the combination of nationalities resulted in "brawls, profanity, and nuisances...they expected to work for a living and fight and carouse for a pastime." (*Ducktown* 39)

Before 1853, there were only three roads out of Ducktown, one to Ellijay, Georgia; one to Dahlonega, Georgia; and one to Murphy, North Carolina. Also, the closest railroad was seventy miles away in Dalton, Georgia, reachable only by the road through Ellijay (*Ducktown* 56). In 1853 two accomplishments "assured development of the Ducktown mines"; the East Tennessee and Georgia Railroad was built to Cleveland and a road through the Ocoee Gorge to Cleveland was finished (*Ducktown* 56). Although the ore from Ducktown still had to be carried by ox or mule team to a railroad head, Cleveland was some thirty miles closer to

the mines than Dalton. In 1856 the mining companies developed another way to reduce transportation cost; they began smelting the ore on-site. The resultant matte was more concentrated than ore and therefore cheaper to haul.

The effect of the Civil War on the Ducktown Basin was comparable to its effect of the rest of the South. At the outbreak of war, about one thousand men were working for the mining companies. Soon after the war started, the government brought its Confederate ownership policy to Ducktown. Since the South did not want its hard earned profits going up North, they were selling stock in the hands of Yankees to southern sympathizers. Consequently, shares of both the Burra Burra Copper Company and the Union Consolidated Mining Company were sold at public auction (*Ducktown* 87). With the completion of a copper rolling mill in Cleveland, Ducktown was able to provide the South with much needed copper.

The latter part of the war brought a close to the Ducktown operations. A report to the Confederate government in 1862 or 1863 listed about three hundred men as working at the mines (*Ducktown* 92). Polk County had five Confederate infantry divisions which fought in the Civil War; two of these were from Ducktown which partially explains the loss of employees (Williams 19). In late 1863, Cleveland fell to Federal troops and the Confederacy lost its copper supply. The troops destroyed the rolling mill and took control of the railroads. With the loss of its industry,

Ducktown became somewhat of a ghost town, "strangely quiet and uninviting." (*Ducktown* 97) Guerilla activity in the Basin was heavy, adding to the reasons for fleeing the area. Barclay reports that by the summer of 1864, "all who desired to do so had left the district...[Ducktown was] bedraggled, despondent, and almost deserted." (*Ducktown* 99, 101)

When the Civil War ended, the "title character" of Barclay's first book steps again to the forefront of Ducktown Basin copper mining. Julius Eckhardt Raht was born in Dillenburg, Germany in 1826. He travelled, along with his brother Charles, to America in 1850 and arrived in Ducktown in 1854 (*Ducktown* 186). During the early part of the Civil War, Raht supervised the operations of all three mining companies; he also owned the two company stores in the district. Raht took refuge in Cincinnati after the Federal takeover. Upon returning to the basin, he began readying it for start-up. His first action was to recondition the Old Copper Road (through the Ocoee Gorge) and the road to Cherokee County, North Carolina by prorating the expense to the three copper companies--Union Consolidated, Burra Burra, and the Polk County Copper Company (*Ducktown* 130). Raht then determined which mine could be most easily reopened; he gathered ox and mule teams, charcoal, and cordwood (*Ducktown* 132).

At this time, it was generally recognized that the "longer a community remained without a railroad, the longer its

growth remained stagnant." (*Railroad* 6) This condition contributed greatly to the demise of all three mining companies which resumed operations after the Civil War. Raht did lead Ducktown to recovery after the war, in fact one company operated until 1879. Until 1871, the Basin maintained only mining and smelting operations, then refining works were added. Smelting furnaces were located at Isabella and Burra Burra and ore was hauled to them by wagon until 1868. In this year, a narrow gauge track was installed; gravity carried the cars to the smelters and mules pulled them back to the mines (*Ducktown* 147). The refining works were one last attempt at allowing the operations to continue. Now nothing more than refined copper traveled the road to Cleveland.

Regardless of these advances, the copper companies were not to succeed without a railroad. The first company to fall was the Polk County Company, sold in 1875. It had previously operated the Polk County mine, but "was never able to carry on sustained operations" after the war (*Ducktown* 133). The Burra Burra Copper Company, with an average of 160 employees, had high mortgages that ate up any potential profits. Their 1868 Annual Report stated that a railroad would allow them to mine and process copper at lower cost than any other American mine (*Ducktown* 138). Nonetheless, they were forced to close in 1877.

The Union Consolidated Mining Company operated the largest company in the Basin after the Civil War. It owned

five mines, any one of which could produce enough ore to keep the smelters running. Raht had a contract with this company, stating that his salary would be ten percent of the net profit. With his income from the company stores, Raht frequently loaned Union Consolidated money when they reached a "the financial breaking point." (*Ducktown* 159) In 1875, the Secretary of the company visited Ducktown to inspect the operations; in a secret report he charged that Raht had made one million dollars at the company's expense. Union Consolidated sued to recover "its" money (*Ducktown* 167). At that time, the company owed Raht $108,789.34; knowing he would not get repaid, Raht sued U.C. (*Ducktown* 167). When the local courts originally tried the case against Raht in 1877, he won, but had to pay the court costs. Union Consolidated then appealed the case to the Tennessee Supreme Court, which heard it in 1879. The record of the trial, due to a huge number of depositions and testimonies was the largest ever seen in that court (*Ducktown* 170). By the time the Supreme Court heard the case, the mines in the Basin had closed, Union Consolidated had entered bankruptcy, and Julius Raht had passed away (*Ducktown* 176). The court rendered its decision on March 16, 1880; not only did it rule in Raht's favor, but it reversed the court costs back to the company (*Ducktown* 180, 184). This decision brought an end to the first era of mining in the Ducktown Basin.

A resurrection was not going to come to the Ducktown Basin until rail service connected it with the rest of the country. It simply cost too much to transport copper forty miles over the winding, rough Ocoee Gorge Road. Several efforts were put forth before the shutdown to bring a railroad to Ducktown, but all were curtailed by the Civil War. Robert Barclay details these attempts in his book, *The Railroad Comes to Ducktown.* The Western North Carolina Railroad Company was ready to begin a line from Ducktown to Asheville, N.C.; the Civil War wiped out those plans (*Railroad* 27). After the war, as was typical in Reconstruction, the money appropriated for this venture became tied up in embezzlement and fraud (*Railroad* 30). The citizens of Polk and Bradley Counties attempted to help themselves in the 1850's with the creation of the Cleveland and Ducktown Railroad Company; however, after the Civil War the citizens could not afford to "help in efforts to locally finance the railroad." (*Railroad* 49, 54) The company which finally succeeded in connecting Ducktown with a railroad was the Marietta and North Georgia Railroad. Like the others, it was chartered in the 1850's, but work did not begin until five years after the Civil War (*Railroad* 64). The railroad was not completed to Ducktown until late summer, 1889, ten years after the shutdown of the mining industry.

In 1889 a British company took advantage of the impending rail connection; the Ducktown, Sulfur, Copper and Iron Company, Limited (DSC & I) bought the properties

of Union Consolidated Mining Company. Soon thereafter DSC & I began expanding its facilities--the company added four Herreshoff furnaces 1899 (*The Copper Basin,* Barclay 4). In 1891, the Pittsburgh and Tennessee Copper Company leased the Tennessee Mine. This company then leased the Polk County Mine in 1893; they grew even larger by building smeltering furnaces in 1894 (*Basin* 17). In 1899 the Tennessee Copper Company bought not only the leases and plant of the Pittsburgh and Tennessee Company, but also five other idle mines and 5700 acres in the Basin. TCC was soon the largest employer in the Basin, with up to 3000 employees (*Basin* 28). The company also renewed the old policy of hiring large numbers of foreign workers; these workers first lived in camps, but then moved to other areas.

The operations at this time had problems which foreshadowed the future of American industry. In 1899, the county assessments for taxes were found to be inaccurate in the mining districts. The assessors in the two mining districts therefore did not receive any pay that year because they had not properly assessed mining company property (Clemmer 2: 85). There was also a strike at DSC & I in 1899, when the company fired workers who had joined the Copper Mine Workers Union formed three weeks earlier. At that time, the company employed 976 men and the strike was "amicably settled" after deputies with rifles and pistols arrived (Clemmer 1: 73).

The worst of the problems which developed during the nineteenth century was the environmental rape of the Basin land. In the first phase of mining, before 1879, the Basin was stripped of all trees-including stumps--which served as firewood for the smeltering process. The area was allowed a little growth during the ten year shutdown, but in 1890, the process began again until "every tree for more than fifty square miles was mowed down." (Barnhardt 36)

Further contributing to the Basin's denudation were the sulfur fumes released all this time by the smelting operations. The ore mined in Ducktown contained sulfur as well as copper and the open smelting process released the sulfur directly into the air. With mountains on three sides, the sulfur was highly concentrated and created severe acid rain. The area which received this rain was the same one stripped of trees; the rain robbed the soil of its remaining fertility. Erosion of the stripped land, multiplied by the area's heavy average rainfall, left the hills a red desert. Clay reported that in much of the Basin "the ground crunches, clinks, and clanks as you walk on it." (50) The operations left the only "bona fide" desert east of the Mississippi River (Barnhardt 36). A new process of smelting, discovered in 1902, made open burning of ore a relic of the past.

This new process captured the fumes and release them through tall smokestacks, dispersing the sulfur-rich fumes to a much larger area. Because of the mountains on the

north, east, and west sides of the Basin, the fumes travelled south to Georgia. Beginning an inter-state battle, Georgia took its case to the United States Supreme Court in 1907. The Court ruled that it would give injunctions against the mining companies if Georgia so desired. This decision was one of the first in the country which confronted an environmental issue. A local paper described the possible injunction as "a deplorable event...it would mean untold suffering." (Clemmer 20:12) As it turned out, Georgia did not force the injunction, principally because the companies were researching a method to capture the sulfur fumes and produce sulfuric acid. Also, many Georgia citizens worked at the operations in Ducktown. The first successful acid plant was finished in 1908 and "from this time onward, acid was the principal cash crop." (*Basin* 8)

Until World War I, the Basin operated without much disruption. A description of the Tennessee Copper Company operations, published in 1908, stated that the principal use of its acid was as an ingredient in acid phosphate, instrumental in the production of fertilizers (*Description* 13). Although most United States manufacturers currently import their copper requirements, in 1911 the United States produced more copper than any other country in the world ("Producer"). When World War I arrived, the companies in the Copper Basin did not prosper as much as most other war time industries. The International Agriculture Corporation held TCC to a pre-war contract price on

its copper; this pre-war price was much below the war time market price. Consequently, The International Agriculture Corporation profited greatly from the TCC contract when they received a one million ton contract from DuPont at a much higher price than they were paying DSC & I (Clemmer 6:131).

After World War I, the Basin suffered with high inventories and low prices. These problems forced DSC & I into receivership. In 1925 the company was reorganized into the Ducktown Chemical and Iron Company (DC & I). The Tennessee Copper Company seemed better equipped to deal with a post-War recession because they began to diversify. In 1922, TCC added copper sulphate to their product line; in 1925, iron sinter; and in 1927, a zinc concentrate (*Basin* 42,44). As a result of the 1925 reorganization, DC & I began an expansion, but they never operated at the scale of TCC. Barclay reports that DC & I had around 400 employees, but their wage level was generally below that of TCC (*Basin* 15). In addition to their low wages, DC & I traditionally maintained an anti-union stance. There were two strikes which closed all operations at the Isabella plant, but they "always ended unfavorably for all employees." (*Basin* 14)

The Depression did not have devastating effect on the Basin. In fact, a beautiful new school was finished in Ducktown in 1932. It was originally intended to be Kimsey Junior College, but due to zoning problems it has remained

the Ducktown Elementary School to this day. The problems date back to the original zoning of the county in 1837; this section had to be used as the site of a county school. This school was equipped with a gymnasium, auditorium, and lunch area which were really feats of their time. In 1930, TCC opened a new contact acid plant. This type of plant produces a higher grade of acid than the previous. By 1935, TCC had tripled its output of sulfuric acid and "except during the extreme depression period" reported high profits ("The Ducktown Basin").

In 1936, the Copper Basin's evolution to a "company town" was completed when the Tennessee Copper Company took over Ducktown Chemical and Iron. From this time on, one company had a stranglehold on the fate of a community of people. Much of TCC's success during this period was attributable to General Manager J.N. Houser; by the end of his reign, the company was producing copper, acid of different concentrations, iron sinter, copper sulphate, fungicides, insecticides, zinc concentrates, organic chemicals, sodium hydroxide, ferric sulphate, and graduated slag (*Basin* 44). J.N. Houser had union policy which was radically different from his predecessors--he was a union sympathizer.

Ironically, it was this characteristic which would cause a shutdown of his successful company for six weeks. As was much of the nation, TCC was divided in 1937 by a rift between unions. Two of the three local unions left the

American Federation of Labor and joined the Congress of Industrial Organization. The third union remained with the AFL and the company was divided almost equally. Barclay reports that an "unholy struggle...was begun at once." (*Basin* 67) As each of the unions wanted to claim bargaining rights for the whole company, an election was held on March 18, 1938 which the AFL won by 55 votes. The CIO protested the outcome, however, and the National Labor Relations Board supported them, ordering another election. This election was held on November 4, 1938 and the CIO became the sole bargaining agent for the workers of Tennessee Copper Company (*Basin* 68). The next step in the process was collective bargaining and the CIO demanded a closed shop. Neither the AFL or TCC agreed to this clause, so a six-week strike began on July 14, 1939.

World War II brought an inevitable increase in production to the Copper Basin. However, unlike after WWI, the Basin did not suffer a great loss in economic vitality at the end of the war. Pre-war employment at TCC was approximately 1200; wartime was around 1800; and in 1946 it remained around 1700 (Peters). A Chattanooga newspaper reported that production was pushed to capacity, "kept at top figures throughout the war," but after the war continued at peak levels (Crane). This output went to a variety of new industries, including synthetic textiles and plastics (*The Copper Basin*). Also, the general economic upswing in the 1950's pushed production of steel and

automobiles up; both of these industries were end users of TCC products. Barclay, who worked for this company at the time, characterized the 1950's as a decade passing "in easy cadence." (*Basin* 47)

Tennessee Copper Company, with its headquarters now at Copperhill, Tennessee, entered the 1960's still in control of its company town. In 1960 a handbook for employees, *The TCC Story*, listed TCC's industrial property as including:

> five operating mines, a flotation plant, a copper smelter, roasters, sintering plants, acid plants a railroad, laboratories, office buildings, two retail merchandise stores, an employee hotel, and 260 employee residences. (4)

Another sign of TCC's hold on the town was its factors for choosing new employees, these factors included "physical fitness, age...reputation in the community...family background...and general character." (6) Obviously, this was a framework for the subjective hiring of employees.

At this time, the company was owned by the Tennessee Corporation, which was originally a New York holding company formed to build and operate fertilizer plants to utilize TCC's sulfuric acid. TCC was the largest employer in the Tennessee Corporation structure and furnished "material essential to the operation of other divisions." (4) The Tennessee Corporation was not to hold onto this area long after this handbook was published. Barclay reports that rumors were circulating in 1962

about the fact that someone wanted to buy the TC (*Basin* 47). By June of 1963, the rumors were confirmed; on the fourteenth, Cities Service Corporation took control of the Tennessee Corporation.

Cities Service operated at status quo until a strike in 1969, which caused 1600 employees to leave the plant. Unlike the strikes of the early 1900's, this one produced positive results for the employees. When the two-week strike ended, employees received an eight percent pay raise as well as a nine and one-half percent increase in fringe benefits (*Chattanooga NFP* 10-2-69). One reason this strike was effective was that the demand for sulfuric acid was high due to the Vietnam War. Cities Service supplied more than seventy-five percent of the sulfuric acid needed by a Chattanooga dynamite plant (*Chattanooga Times* 9-18-1969). This plant provided more than one-half of the dynamite used by U.S. troops in Vietnam (*Polk County News* 1-08-1970).

The 1970's were a period of great change for the Copper Basin. When the decade started, the future looked bright as Cities Service announced a $70,000,000 expansion for its TCC Division. At that time, around 2000 people were employed by the company; the construction would require an additional 1200 more. New facilities included a plant to produce iron pellets (used in steel making), a new acid plan, and waste heat boilers to provide electricity (*P.C. News* 1-08-1970). "Project Copperhill"

would also increase the amount of ore mined by twenty-five percent and the output of major products by forty percent (*Chattanooga NFP* 1-26-1971).

Further turmoil came to this decade in the form of union strife. Two strikes rocked the firm in the 1970's, both of which halted plant production. The first, in 1974, involved 1700 workers and four unions (*Times* 2-16-1974). The second strike, in 1977, lasted four months and forced federal mediators to enter the conflict (Higgins 6-9-1977). By the end of the strike, the demand for food stamps in the Basin had more than tripled (Higgins 8-14-1977). The 1970's ended with a very large cloud hanging over the Basin; it is a cloud that has yet to be dispersed.

1979-Current

Cities Service also had money problems in the seventies, including consecutive losses in 1975 and 1976 (*P.C. News* 2-3-1977). They further had to address water pollution charges in a suit filed by the U.S. Government (Kopper). The culmination of these problems came in March of 1979, when Cities Service Corporation made an announcement which acted as an indicator of the Copper Basin's future. Four hundred of the company's eighteen hundred employees were laid off; the payroll was expected to fall at least six million dollars (Rucker 3-14-79). The layoff was due to the closure of an iron pellet plant which had opened in 1973 and never recorded a profit. Cities

Service reported that the plant "did not produce the operating reliability or costs necessary to meet overseas competition." (Rucker 3-14-79)

Cities Service donated a 130-acre site to the Copper Basin Economic Development Association in August of 1980; the site was to be used for the establishment of an industrial park. The state, recognizing the strain which closure caused the Copper Basin, promised to make every effort to find industries which could "take advantage of the skilled and unskilled labor" of the unemployed workers (*Times* 3-15-79). In order to utilize the industrial park site, the Copper Basin received four million dollars in grants--including $500,000 from the Farmers Home Administration, $1,880,000 from the Economic Development Administration, and $700,000 from the Appalachian Regional Commission (*Times* 3-4-80). The Copper Basin Economic Development Association used the money to ready the site for industries. The industrial park is now home to four small business, but due to different job skill reguirements, has absorbed few of the former Tennessee Chemical Company employees

By June of 1981, Cities Service Corporation was looking to sell its entire Industrial Chemical Division. This division included the Copperhill operations; an alum plant in Cedar Springs, Georgia; an acid and alum plant in Augusta, Georgia; and the sales offices in Atlanta (*Times* 6-6-81). In November of that year, Cities Service followed up the 1979

closure by laying off 170 additional workers. The company cited a sudden drop in the demand for sulfuric acid as the cause of the layoff; its work force now totaled 1300 (Higgins 11-11-81). A group of investors from Texas, led by Bruce B. Davis, purchased the division in September of 1982 and changed its name to the Tennessee Chemical Company (TCC). Soon after this purchase, TCC began contesting its tax payments to the county. The company paid forty to forty-five percent of Polk County's property taxes. TCC claimed that it should only have to pay the taxes due by its purchase price, not its assessed value (*Times* 3-7-84).

TCC's actions had a devastating effect on the county's operations. Polk County had to lay off twenty percent of the government employees and halt school bus service. The Polk County community rallied to provide for the bus service, raising $7000 privately in order to fund its operation (Higgins 3-22-84). Without the buses, students in isolated parts of the county simply could not get to school; some students closer to schools rode horses to class (Corbett 3-20-84). While TCC did pay the undisputed amount of taxes, an agreement was not reached until 1986, when a newly elected County Executive was able to negotiate the settlement.

On January 22, 1985 Tennessee Chemical Company announced its plans to lay off 900 workers. The company planned to cease all mining operations. TCC had tried to make the mines profitable through wage and benefit

concessions, but international competition had driven copper prices too low for profitable operations to be feasible (Corbett 1-22-85). The 900 workers represented two-thirds of TCC's work force and was a major blow to the Copper Basin economy, which contained very few viable employment options. The layoffs were staggered over a period from July 1987 to January 1988 and only 650 jobs were actually eliminated; around 200 workers took early retirement or quit of their own volition (Thomas 6).

In order to ease the strain on the area's economy, a retraining program was started for displaced TCC workers. The Tennessee Department of Labor provided $800,000, along with $400,000 from the United States Department of Labor, in order to fund "Transformations at Copperhill." (*Deterrents* 5) "Transformations" was made possible by the Job Training Partnership Act of 1982 and was administered by the Tennessee Valley Authority. TVA's selection "was based on TVA's reported past and current involvement with economic development activities." (*Deterrents* 6) The program at Copperhill began in September of 1986; in addition to retraining, it provided job search assistance, job counseling, tuition and travel assistance, as well as on-site courses (*Deterrents* 4).

Ten months prior to the initial layoffs, workers had the opportunity to take advantage of "Transformations at Copperhill." By Spring of 1987, employees' spouses were also eligible for enrollment. Nationally, participation rates in

JTPA programs averages no more than five percent of eligible workers (*Deterrents* 8). At Copperhill, this number reached thirty-three percent. While this is well above the national average, considering the area's lack of other economic opportunities one would expect Copperhill's numbers to be even higher. Rita Noel Thomas' doctoral thesis determined that participants in "Transformations" were younger, more educated, earned more per hour at TCC, and expected to earn more after relocation than non-participants (*Deterrents* 130). Employees were more likely to participate if they were married, willing to relocate, had fewer financial obligations, or belonged to a craft union (*Deterrents* 130). Thomas also noted that on-site classes designed to upgrade existing skills interested more workers than retraining which taught new skills (*Deterrents* 131). The retraining at Copperhill was largely hi-tech, while few area companies utilized those skills.

On August 27, 1987 the last load of copper was brought up from the mines at Copperhill; 325 employees remained at TCC. The closure of the mines did not solve the company's problems, however. Eight months later the International Chemical Workers Union went on strike, asking for a thirty-five cent/hour wage increase. The strike was settled within three weeks, but TCC was not to recover from this decade of decline. On April 10, 1989, Tennessee Chemical Company filed for bankruptcy. When the mines closed two years earlier, President Bruce B. Davis called TCC

"financially strong," saying they were in a "sound business." (Kopper 4-11-89) Apparently, his assessment was not on target.

While Tennessee Chemical Company's future has not yet been determined, Polk County is continuing to search for a means of survival. So far, that means has been tourism. In 1976, TVA closed the sixty-year old flume line which had diverted water from the Ocoee River in order to produce electricity. Area residents quickly discovered the river's suitability for whitewater rafting; 7000 people rode the Ocoee in 1977. By 1982 that number had risen to 92,000 and the number peaked in 1988 at 143,917 (I. Buehler 1-10-90). The river has hosted several competitions, with the Olympic trials scheduled to take place there also. Most brightly in Polk County's future shines the possibility of Atlanta hosting the 1996 Olympics, because the Ocoee River is slated to be the site of all whitewater competitions. With the passage of a rafting tax in 1981, the county has been able to diversify its tax base. Polk County collected $611,220 from 1982 to June of 1989 from this tax (I. Buehler 1-10-90).

The Copper Basin's efforts to overcome the liabilities of a "company-town" are ongoing. Currently, the Copper Basin Industrial Park is home to four small businesses. Two area sites are being considered for hotels; without them, "nearby counties get much of the benefit of Polk County's tourist attractions." (I. Buehler 1-10-90, p.7) Hoyt Firestone, Polk

County Executive, best summarized the area's outlook in an interview on January 3, 1990. He stated that the most important issue facing Polk County is broadening the tax base. "Tourism has not replaced the money which TCC pumped into our economy, but it is the best new source...it is the most immediate solution--a real lifeline."

The history of the Copper Basin would be incomplete without a look at reforestation efforts undertaken in the Twentieth Century. As early as 1932, headlines can be found proclaiming, "Ducktown's Basin Desert Soon To Bloom Again." (Clemmer 16:118) Yet, fifty-one years later the area could still be described as "The Tennessee Badlands." (Clay 49) The processes which caused this desecration were presented earlier; the attempts to solve it will be given here. No one organization has ever overseen or attempted to collect the various efforts at reforestation of the area. 1930 seems to be the first time trees were brought back into the area. This was done by the Ducktown Chemical and Iron Company with the help of a University of Tennessee Extension Agent (Clemmer 16: 118). This same article estimated that no vegetation was visible within fifteen to twenty square miles, and all tree growth was gone within forty square miles. The next effort to reforest the Basin involved the Civilian Conservation Corps and the Tennessee Valley Authority. The camps in the area operated for one year and over 500 acres were planted (Wallace 9). By 1950, over 4,000,000 trees were reported planted

(Wallace 9). In 1960, the Tennessee Copper Company reported planting more than 200,000 Loblolly pines annually (*The TCC Story* 22). In 1973, an estimated 8600 acres remained bare (Clay 53). In 1983, TCC was still planting around 285,000 pines per year. Driving into the Basin now, the landscape is not as desert-like as it once was. Stands of pines are sprinkled across the view. Yet, the fact that man, over the last eighty years, has not been able to fix the damage that was complete in 1910 should make people more concerned about the world's continuing deforestation.

When one visits the Copper Basin, the effect of a over a century of copper mining and processing is obvious. The land is still scarred by pollution from one hundred years ago. The Old Copper Road is the easiest route into the county from the west; Copperhill is now the larger of the two mining communities. For the most part, the people are proud of their mining heritage--its uniqueness suits the typical mountainer individuality.

The economic impact of the mining still affects Polk County. Tennessee Chemical Company is the county's largest taxpayer; when the company is in trouble, the county is in trouble. Historically, the southern part of the county was completely controlled by the mining company. Due to the tax dependency, the entire county, as well as its school system, is controlled now by the company. The environmental devastation of the mining and processing is ongoing. Tennessee Chemical Company continued to plant

trees in an attempt at reforestation, while water quality, affected by the company's runoff, has created a "new" problem for area streams. Boliden AG, recent purchaser of TCC properties, is currently in negotiation with the Environmental Protection Agency. These negotiations center on the amount to which Boliden can be held accountable for its predecessor's environmental damage.

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Polk County: An Appalachian Perspective

As discussed earlier, the industrialization of Central Appalachia began in the late nineteenth century when railroads infiltrated the isolated hamlets. While these mountaineers have always lived at a standard lower than the rest of the nation, since industrialization they are dependent on a company for survival rather than the land. The coal communities are controlled by the companies which take the profits from their land. Substandard housing, education and health care have become recognized features of the Appalachian region.

Federal money now flows into Appalachia in an attempt to reverse the region's 'backwardness.' The Appalachian Regional Commission, established in 1965, has spent billions of dollars to improve the area's infra-structure, as well as its schools and hospitals. The ARC, like the Tennessee Valley Authority, is also concerned with the area's economic development. As John Gaventa points out, "The national response...has been a shift in concern from poverty, remedied through full participation of the poor, to development, achieved through planning by a professional élite." (163) While neither of these two organizations is going to solve Appalachian poverty, they have provided some relief.

Placing Polk County in an Appalachian perspective provides us with an interesting case study of an area in transition. The county is situated in Southern Appalachia, in the East Tennessee Development District. While copper mining began there in 1850, permanent operations were not in place until 1890, after the area received railroad connections. During its settlement, the Ducktown area experienced the same kind of boomtown spirit as its cousins in the coalfields. As Robert Barclay relates, the men "expected to work for a living and fight and carouse for a pastime." (*Ducktown* 39)

Throughout the twentieth century the Copper Basin has mirrored similar mining operations in Central Appalachia. Even though the Basin produced copper, the company town which was so pervasive in the coalfields was present in Polk County also. Here the mining company operated two company stores throughout most of the century as well as providing housing for employees. An outline of Tennessee Copper Company's operations in 1908 also included a hospital which the company staffed (*Description* 13). A 1960 booklet listed the two company stores, an employee hotel, and 260 employee houses in TCC's "industrial property." (*The TCC Story* 4)

The 1930's brought union struggles to the Copper Basin just as it did to the coalfields. Coal miners had initially attempted to voice an opinion against the actions of John L. Lewis, before his power had been sufficiently cemented

(Gaventa 119). Soon after this, "an unholy struggle" began in the Copper Basin between American Federation of Labor supporters and those loyal to the Congress of Industrial Organizations (*The Copper Basin* 67). The CIO won a company wide election in 1938; after a six week strike settled the closed shop issue, unions became import in ensuring the workers' welfare.

While the Copper Basin did not experience the same kind of reductions in manpower throughout the 1950's and 1960's as Central Appalachia, the last decade has brought the dire situation of the coalfields to Polk County. The recession of the late 1970's was the final blow to an unsuccessful pelletizing plant of Cities Service Company--400 workers were laid off. By 1985 the Chemical division had been sold and the new management decided that importing copper would be cheaper than mining it on site--900 workers were laid off or retired. Overall from 1979 to 1989 Tennessee Chemical Company went from 1,850 workers to around 325--an 82% reduction. Mining is now a part of Copper Basin history.

The income and population figures which are characteristic of Central Appalachia are also found in Polk County. In 1970, Polk County's per capita income was $2756, 68% of the national average. In 1987 this number was $10,120 while the national average was $15,484. Like the rest of the nation, Polk County's source of income has also changed dramatically in the last decade. In 1979 the

amount of money earned in amusements and recreation topped the $50,000 mark for the first time; eight years later it topped $445,000. The total amount of money earned in "Services" in Polk County was $2,327,000 in 1977. A shift to services over manufacturing is evidenced by the $6,370,000 amount earned in this area in 1987. By 1987, the total number of employees at Tennessee Chemical Company, the county's largest employer, had fallen from around 2000 in 1977 to 350 in 1987.[1]

Table 1: Population and Income Figures

Year:	1970	1975	1980	1987
Population:	11669		13602	
Per-capita Income:				
Polk County:	$2756	$4485	$6428	$10120
Percent of TN:	87.5%	91.1%	80.1%	78.6%
Percent of US:	68.0%	73.8%	64.9%	65.4%
Source of Earnings: (in thousands of dollars)				
Manufacturing:	15415	23925	37224	37924
Mining:	4521	13776	(L)*	135
Services:	1138	2163	3216	6370
Amusements & Recreation:	(L)	(L)	142	445

*(L)=Less than $50,000

Polk County's population figures also follow the national trends in migration. From 1960 to 1970 the county's population fell from 12,160 to 11,669. This drop was recovered by 1980, however, when the population had

[1]All income figures are from the Bureau of Economic Analysis

risen to 13,602. Following the nationwide pattern of movement to rural areas, the northwest section of the county grew from 1970 to 1980, while the Ducktown divisions experienced a drop in population.[2]

Both the Appalachian Regional Commission and the Tennessee Valley Authority have been involved in Polk County. The TVA has played the larger of the two roles due to its control of the Ocoee and Hiwasee Rivers and Parksville Lake. For over sixty years the flume line, purchased by TVA in 1933, diverted water from the Ocoee River bed in order to produce electricity. The line was closed in 1976 due to its state of disrepair and a rafting industry soon developed. Bob Allen, of the Department of Conservation, says that the Ocoee "is becoming one of the most popular whitewater rivers in the southeastern United States, in the in the eastern United States." (Markham 6) Not only has the river sparked tourism industry in Polk County, but it has provided a tax base diversification which helps cut the county's dependence on Tennessee Chemical Company; in 1987 rafting outfitters paid $155,000 to the county in taxes. One reason the river has been popular is that TVA is required to provide a flow 116 days per year, regardless of rainfall amounts (Markham 9). TVA also organized "Transformations at Copperhill" in accordance with the Job Training Partnership Act when mining operations at TCC

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[2]Population figures are from the "Population of County Subdivisions: 1960 to 1980," U.S. Dept. of Census

ceased. The only ARC funds to enter the Copper Basin came in 1980. This money was used to develop a water system and industrial park in reaction to the loss of 400 jobs at TCC in 1979. The Copper Basin Industrial Park is now the home of several small businesses.

Depressed socioeconomic conditions have a history in Appalachia. As Richard Couto explains, "Appalachia is less of a place and more of a process of economic development and exploitation which happened in a particular region over a period of time." (1) Although not everyone will agree on the particular process and events which shaped the Appalachia which exists today, it is necessary that we agree to go forward from here. While removing the problem solving from the on site to a bureaucratic haven is not the best approach, the ARC, based in Washington D.C., has helped improve conditions in certain areas of the region.

Certainly ideas on how to improve conditions in the region are dynamic. What is a popular idea one year may not be so three of four years later. For a long time, industrial recruiting was the means of bringing industry to the South. Billions of dollars in tax concessions, land grants, and buildings were given to corporation, occasionally for the creation of only a few hundred jobs. This method is no longer so highly touted, however, and the number of branch plants, "generally the 'bread and butter' of southern industrial recruitment" decreased during the 1980's (Rosenfeld 1988, xiii).

In 1989 the Southern Growth Policies Board published a study which "attempted to explain non-metro job growth.'" (xi) The study found that the counties with highest growth rates were those with tourism or retirement communities. Also included were counties who received spillover from metropolitan growth centers (such as the counties around Atlanta). The rural counties which were able to gain manufacturing jobs had a "good business climate: low costs, low incomes, low education levels and few technicians." (ix) This study stressed the importance of education and human resources to economic growth; because the South is changing from a manufacturing to a service economy, "the quality of human resources is more important than the quantity." (1) While tourism tends to provide a climate which attracts other businesses it does not provide the stability desired for long-term growth. Entrepreneurism is the best investment for long-term, yet often public officials are too concerned with immediate results. Therefore they should consider a "balanced set of programs for education and infrastructure if total growth is the objective...The most important growth factors are: education, education, and education." (29, 61)

Reviving the Rural Factory is another Southern Growth Policies Board Publication. Acknowledging that the growth of manufacturing employment in the rural South had practically ended by 1982, the report outlines suggestions for increasing manufacturing jobs. While the

South's advantages for industry have always centered on its low wages and availability of labor, the increased globalization of the United States economy has diminished these factors. It simply costs less to manufacture a product in a Third World Country with a lower standard of living than the United States. Similar to the 1989 study, this one recommends a focus on small to medium size firms with the major support coming from the states. Three of its recommendations center on technology, suggesting that we provide firms with better information, invest more money in research, and utilize local colleges to provide technical resources and training. The last suggestion is to establish adult basic education classes for a more prepared workforce.

This last suggestions for regional development which this project will cover concentrates on Appalachia. Richard A. Couto examines the problems which the region currently faces. Following the national switch from a manufacturing to a service economy, Appalachia "has more jobs than before but they are different...These jobs pay less and require fewer skills" (61) Couto believes that large scale programs are necessary for Appalachian communities to overcome their history of substandard conditions. He feels that a combination of organizations and local leadership is what will inspire the people to work for a change in conditions. He adds that "people at the local level...should examine their work for its regional and national importance." (11) The situation in Appalachia has been

compared many times to that of the Third World; if we can find ways to improve conditions in Appalachia maybe they will be applicable to the larger society.

Polk County certainly fits well into the Appalachian model; so, too, do these solutions apply to the county's situation. While the Copper Basin Industrial Park sits partially filled and ready for further development, the county cannot afford to play the game of serious industrial recruitment. Certainly improvements in the education system would be warranted--low tax receipts always hit the schools first--Polk County's situation is not the worst of Tennessee's rural counties. Cleveland State Community College is within forty-five minutes of most of the county, as is Hiwassee College, a two year school. Tennessee Wesleyan College in Athens, Tennessee is the closest four-year college, but the University of Tennessee-Chattanooga is within one and one-half hours.

The attempt to get manufacturers to Polk County depends currently on one main variable: transportation. From the more prosperous towns of Chattanooga and Cleveland only one direct route exists into and out of the southeastern portion of the county: Highway 64 along the Ocoee Gorge. For transfer trailers this is an extremely treacherous route; trucks in the riverbed are fairly commonplace. The caption to a picture of a truck loaded with french fries in a recent Polk County News read: "Another truck ended up in the Ocoee riverbed." (1-17-90)

Cost studies have been done on improving the highway, which is the "Old Copper Road" of the 1870's, but a cheap enough alternative has yet to be found.

As cited earlier, tourism can breed an environment which encourages businesses to locate in an area. Even considering its limitations, tourism is currently Polk County's best hope for improved socioeconomic conditions. With increased public awareness of everything Polk County has to see, tourism is certain to boom. The issue which enters local discussion the insufficient overnight accommodations for travelers in Polk County. Two hotels are currently in the early stages of construction, however, and the Lake Ocoee Inn has been given permission to expand its facilities. Hopefully these improvements will encourage people to spend the night in Polk County and the increased tax revenues can be spent on the education and roads which are so crucial to manufacturing.

I believe that too few people know what Polk County, Tennessee has to offer. Everything from Indian heritage to the history of copper mining can be studied there and activities from hiking in the Cherokee National Forest to rafting the Ocoee River can be enjoyed. Specifically, I would recommend the placement of a billboard on Interstate 75 to increase the number of non-regional visitors. Also I think a welcome/information center should be built on Highway 64 just beyond the Bradley County line. The center could be placed in an already existing structure and would allow

travelers to choose which sites to visit first. Here, travellers could receive information on Polk County lodging for that evening and they would be more likely to stay. While I realize that both of these suggestions are short-term and cost money, I believe that they would pay for themselves in a short amount of time.

Currently the Copper Basin is an area in transition. The northwest portion of Polk County is still rural, maintaining its mountain isolation. The southeastern section is three years into a recovery from the loss of Tennessee Chemical Company's mining operations. While small businesses have absorbed some of the workers, most have either moved or are commuting to Dalton, Georgia; Cleveland, Tennessee; or even Atlanta. The jobs of the remaining four hundred workers at TCC were recently secured for a six-month period. Boliden AG, a Swedish company, will operate the company for six months during which time negotiations with the Environmental Protection Agency will be conducted in order to determine Boliden's liability for the former companies' environmental damage. If a settlement is reached, Boliden can finalize its purchase of the Copperhill Operations.

To summarize, the Polk County mining region is very similar to the coalfields of Central Appalachia. The Copper Basin has a history as a company town, which continues today with its dependence on Tennessee Chemical Company tax revenues. Polk County needs serious

infrastructure revitalization before it can replace the 1600 jobs lost from 1979 to 1987. While tourism is not the solution to the county's problems, if taxed properly, it could bring needed revenue into the county budget. Both the increase in revenue and the diversification of the tax base could bring the reforms in education and roads which would encourage industry to move to Polk County.

Conclusion

This project set out to determine the historical, environmental, and economic impact of mining on Polk County, Tennessee. This area has endured its history as a company town; the former mining company is still the largest in the county. Copper has, in large part, determined the Basin's history; the Basin's citizens are proud of this heritage. The environmental ravaging of the land, which was complete by 1910, is still evident today. Reforestation efforts have not been able to completely reclaim the land. Economically, the effects of the mining still linger. At one time, Polk County was the fifth richest county in Tennessee. Now that the mining industry is no longer prosperous, it joins its coal mining cousins in north-eastern Tennessee in poverty. Tennessee Chemical Company is still the largest taxpayer in the county; as it suffers, so do the schools and services.

This county is similar to many other Appalachian poor rural and mining counties. Yet it is at an advantage *because*

the mining operations have ceased; Polk County now has no choice but to look to its future. It is rich in history and natural resources which could bring new money to the county. Most of all, the people need to work to bring new industries to the county, so that their children will have a place to live and work. While this process will not be an easy one, a change has taken place; it is up to the people whether they overcome it or are taken over by it.

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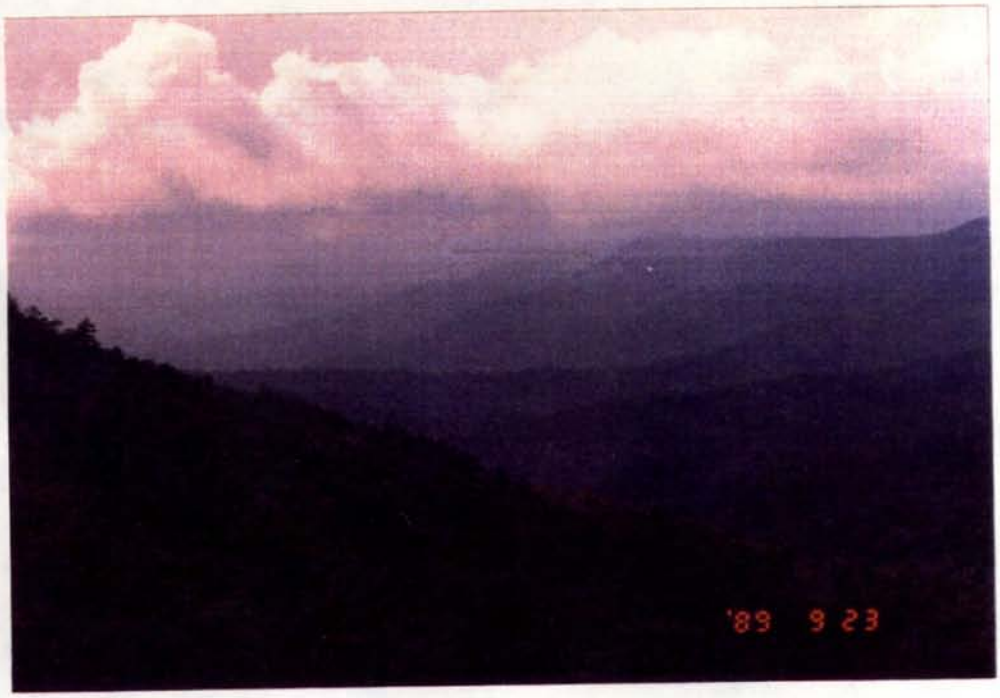
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Burra Burra Mine Site



Landscape around Ducktown



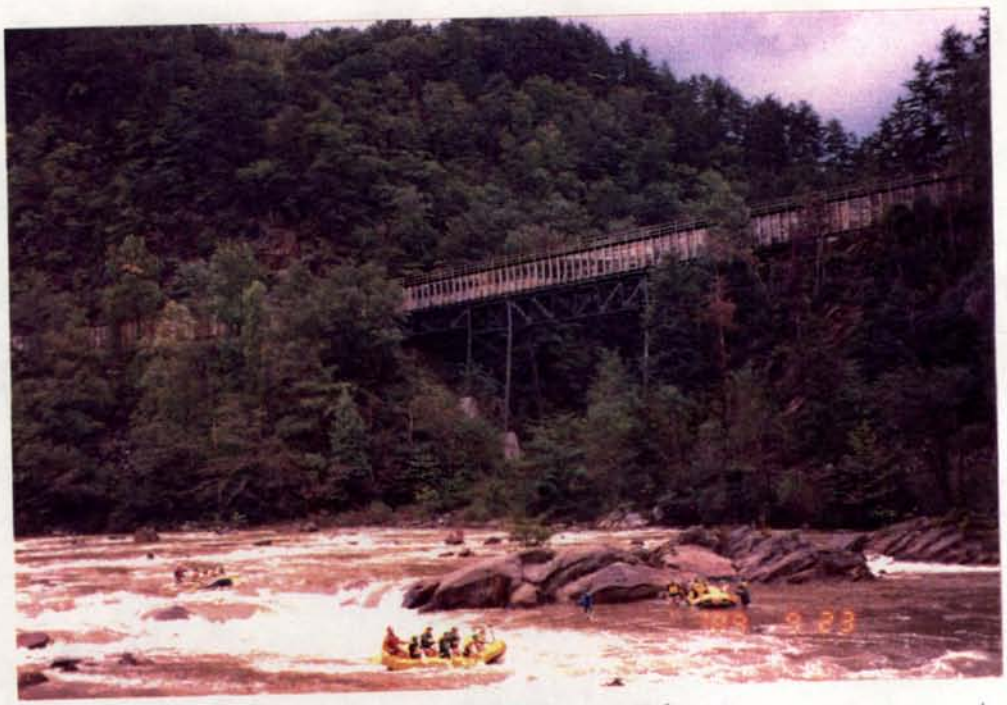
Cherokee National Forest



Tennessee Chemical Company



Hiwasee Union Baptist Church
in the Reliance Historic District



Rafters on the Ocoee River
with the Flume Line in background