

5-2020

From Fields to Factories: The Industrialization of The United States' Cattle Industry

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<https://doi.org/10.33015/dominican.edu/2020.HIST.ST.04>

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Petersen, Joseph, "From Fields to Factories: The Industrialization of The United States' Cattle Industry" (2020). *History | Senior Theses*. 5.
<https://doi.org/10.33015/dominican.edu/2020.HIST.ST.04>

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From Fields to Factories:
The Industrialization of The United States' Cattle Industry

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Hist. 4902 Senior Capstone

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May 12, 2020

Abstract

This paper will look at the changes of the United States of America's cattle and beef industry from the 19th into the 21th century. It will also show how the industry has evolved into its current state and predict the changes to come. This paper will be evaluating how technology and equipment have changed the traditional farming and ranch lifestyles. While also breaking down the economies from pre-industrial times into modern day. This paper will also explore the effect that technology, equipment, ranching styles, labor and financial changes had on the cattle and beef industry. Finally, this paper will prove that there is a need for change in the industry and will do so by providing evidence that can help the industry have better production and sustainability for the future to come.

Dedication

To my mother Leslie for giving me a childhood that allowed me to grow up in an area that few have a chance to. Growing up on the farm outside Sacramento had given me an experience that I now know few have had. Thank you for everything you have done.

I love you.

Table of Content

Terminology	1
Introduction	2
Thesis	3
The 19th Century	4
The 20th Century	10
The 21st Century/The future	17
Conclusion	24
Bibliography	27

Terminology

The cattle industry has specific terms, phrases, and names that may not be seen as common knowledge. These may include but are not limited to: cattle drives, tagging, branding, farms, ranches, cattle chute, stockmanship, herefords, angus, heifers, feedlots, GMO, factory farms, handling, drunk cattle, and quality grade. It will be helpful to the reader to have a background or knowledge of some or all of these terms and of the subject before reading this paper.

Due to select sources and data looking into the agricultural industry as a whole and select sources combining data of all the different industries in agriculture, this paper will be using the terms such as farm, farming, agricultural industry, ranch, and ranching interchangeably. Although all these terms mean different things, this is the best way to express an honest interpretation of record and data recorded through the centuries.

This paper will also be analyzing many data points covered and collected over long periods of time, including size of acreage used in select states or the country, number of cattle raised, sold, and the financial sides of the industry. It is important to take these records and see them in the time period in which they are referring to, in the context of United States history. For example, if there is a decline in the sales price of cattle in the 1930's, it was probably due to the Great Depression. This paper might mention these facts, but their main purpose will be to use the data and information found to prove its argument.

Introduction

The cattle industry in the United States has changed dramatic fashion over the last few centuries. This paper will look into the state of the American Cattles industry in the 19th, 20th, and 21st century. The chronological perspective will allow the visualization of the major impacts and changes of the industry over time.

The articles and books used in this paper discuss and display significant changes in American ranching, farming, and agriculture. By looking at the technological advancements in the industry, the reader is able to see how ranching styles can rapidly evolve and change the country within a relatively short time in history. Also, the literature shows how ranching has adapted their needs based on the livestock industry. Due to the industrialization of the industries, employment rates, styles, and techniques for cattle ranching in the United States of America have drastically changed. The modern way of ranching is unsustainable for the future and many ranchers and farmers will have to turn to the new techniques to improve sustainability for the future of the United States cattle industry and ensure long-term success for the future of America.

Cattle ranching is a major industry that stood the test of time within the United States and the production of livestock. The production of cattle is a staple of the business and also evolved with the needs of the U.S. The “cowboy technique” is the style of livestock ranching that led the early years of the industry. This is commonly thought of as the “Old West” style of ranching. This requires numerous men and additional animals working to contribute to the overall ranch duties. At this time, ranches were normally family owned or operated. However, the modern style of ranching has

evolved over the years and the cattle industry has become more industrialized. Modern equipment means that employment on a cattle ranch can be reduced due to the improvements of new technology. It also means a lack of animals on the ranch to help with daily duties. Cattle ranching industrialization resulted in the turning point of the business from the cowboy style to modern techniques. The modern techniques negatively affect the environment as well as employment. As a result, needing a change for better production and sustainability for the future of the cattle industry.

Thesis

Tracing the evolution of the United States' cattle and beef industry from the 19th into the 21st century; the cowboy technique was the leading style in 19th century cattle farming and ranching, while modern methods are led by the industrialized factory style. The industrialization of cattle ranching in the 20th century was a turning point from the cowboy style to modern techniques, which changed the industry's employment practices. By taking the *longue durée* approach, it is important to evaluate and deconstruct how new technology and modern equipment have changed the traditional farming and ranch lifestyles and economies of pre-industrial times. This paper will explore 1) new technology and equipment; 2) the evolution of ranching styles; 3) financial and labor changes; and 4) the changes in food consumption. In conclusion, by using statistical data gathered by the US government, as well as key secondary sources on ranching techniques, it is clear that this modern way of ranching is unsustainable and should find a new way to work for the future of the nation.

The 19th Century

The 19th century cattle industry held the style of ranching known as the cowboy style. That style included the movement of a cattle herd across parts of the nation now known as a cattle drive.¹ With the cowboy style of ranching, extra animals were needed for farm operations on a ranch. Many workers were used to controlling the herd, animals, and property during this time.² This style and time period of ranching still has an impact on the culture of today. The wild west era of cattle ranching was during this cowboy style age and can be seen in many movies and television shows in modernity.

The technology used during this time period was primitive in comparison to future resources. Some of the main techniques ranchers would use to execute this style involved branding and ear tags.³ These techniques are still in use today but at the time these were a necessity. With the migration of cattle drives across lands, knowing the difference between the different herds allowed people to know which cattle belonged to whom. To be able to do the migration of herds, the ranchers needed to be able to do the tagging, branding, and the riding with the herd. There is specific equipment that allowed ranchers to tag and brand their cattle and livestock so there would not be ownership disputes. Some other tools that allowed ranchers jobs to be easier were a walking plow pulled most often by oxen, pitchforks, and stalls in a barn for milking the cattle.⁴ Without these pieces of equipment the ranchers job to execute the technique of migrating a herd would become impossible and result in conflict.

¹ Terry G. Jordan. 1977. "Early Northeast Texas and the Evolution of Western Ranching." *Annals of the Association of American Geographers* 67 (1): 66.

² "Agricultural 1950 Changes in Agriculture 1900 to 1950." Mannlib.cornell.edu. Accessed March 25, 2019.

³ Terry G. Jordan. 1977. "Early Northeast Texas and the Evolution of Western Ranching."

⁴ "Agricultural 1950 Changes in Agriculture 1900 to 1950."

During the time of the cowboy style, a rancher was impacted greatly by the cattle drive. A rancher would need many workers to handle the whole herds movement from the ranch to the sale. To complete the migration these ranchers would need to ride horses and be able to herd the cattle together to the ideal destination.⁵ Horses were one of the most important parts of the cowboy style for both the workers and for the job. Horses are still used on some more traditional ranches today, but the need for them has slowly died out in modern factory farms.

The impact of a horse for the worker during the 19th century was simple. The ranchers/workers of the time used horses for transportation and as tools for the work. Many workers of the time traveled across the lands looking for work or riding trails to transport herds. They did so on horseback. According to National Geographic:

“Horses are perhaps the most familiar working animal on ranches. If you imagine a cowboy, you probably picture him sitting astride a horse. Horses allow cowboys to travel over rangelands quickly and keep up with moving livestock. Horses are also strong and responsive, making them excellent herding animals.”⁶

This shows the importance and impact of the horse as a tool for the rancher to complete his work as well as a necessary form of transportation.

The statement by National Geographic asks the reader to imagine the look of a cowboy. This idea of what a cowboy looks like can often be seen in movies about the old west. One movie in particular that shows the idea of what a cowboy looks like as

⁵ Terry G. Jordan. 1977. “Early Northeast Texas and the Evolution of Western Ranching.”

⁶ National Geographic Society. “Ranching.” National Geographic. National Geographic Society, October 9, 2012. <https://www.nationalgeographic.org/encyclopedia/ranching/>.

well as the struggle of a cattle drive is the 1972 classic starring John Wayne, “*The Cowboys*”.⁷ The storyline of the movie according to IMDB shares,

“When his cattle drivers abandon him for the gold fields, rancher Wil Andersen (John Wayne) is forced to take on a collection of young boys as his drivers in order to get his herd to market in time to avoid financial disaster. The boys learn to do a man's job under Andersen's tutelage; however, neither Andersen nor the boys know that a gang of cattle thieves is stalking them.”⁸

This movie is based on a novel written by William Dale Jennings.⁹ Jennings was raised by a father who was a farmer in across Texas; this provided Jennings with a unique perspective of the life of a real farmer.¹⁰ This movie portrays the hardships of a rancher and the possible challenges of a cattle drive, all while showing the idea of what it means to be a cowboy. This movie classic has personified the idea of what a cowboy would look like during the time of the 19th century.

Employee labor during the 19th century was an important part of maintaining the cattle industry in America. Having a high amount of workers allowed ranches to function and be maintained at full operational capacity. It seems as if the majority of Americans during this time period were working in the agriculture industry, including cattle and livestock ranching. According to census data covering the mid 19th century, in the middle of the century, over 60 percent of American workers worked in an agricultural

⁷ “The Cowboys”. Warner Bros., 1972.

⁸ “The Cowboys”. IMDb. Amazon, n.d. <https://www.imdb.com/title/tt0068421/>.

⁹ “The Cowboys”. IMDb.

¹⁰ Texas Department of State Health Services; Austin Texas, USA. Texas, Death Certificate of William Arthur Jennings, 1958. Ancestry.com. Ancestry.com. Texas, Death Certificates, 1903-1982 [database on-line]. Provo, UT, USA: Ancestry.com Operations, Inc., 2013., n.d. https://search.ancestry.com/cgi-bin/sse.dll?indiv=1&dbid=2272&h=22837489&tid=&pid=&usePUB=true&_phsrc=XYH63&_phstart=successSource.

field. By near the end of the century, the percentage of workers in the agricultural trades dropped to under 40 percent of the population.¹¹ This rapid and major decline in agricultural workers foreshadows the coming century regarding the decline of workers in the agriculture industry.

Land and farm size of the time shows the significance of the agricultural industry in the 19th century. By mid-century there were a total of 1.5 million farms in America and near the end a total of 4.5 million farms. During this time almost all farms were operated by owners or tenants of the lands.¹² This data helps show how many people the industry impacted as well as America's land. By the end of the century, around 1890, there were about 2 million different farms across America at a scale over 100 to 499 acres. A big boost in comparison to 10 years before when the number for the same scale of acres was under 1.5 million.¹³ This shows how many bigger farms there were in the country. These data points help show how America was impacted by the agricultural industry during the 19th century.

While this was all going on in one section of the United States, soon-to-be states were also working cattle. According to John Ryan Fischer in his book *"Cattle Colonialism: An Environmental History of the Conquest of California and Hawai'i,"* places like California were worked by majorly Natives American, Spanish, and Mexican peoples. The majority of Native American workers came from Northern California and many converted in faith. All cattle workers in these areas were called "vaqueros" meaning cowboys or cattle workers. During the 1830's - 1840's, 31,000 vaqueros' worked

¹¹ "Agricultural 1950 Changes in Agriculture 1900 to 1950."

¹² "Agricultural 1950 Changes in Agriculture 1900 to 1950."

¹³ "Agricultural 1950 Changes in Agriculture 1900 to 1950."

the California lands, herding and working over 400,000 cattle and 60,000 horses.¹⁴ This data displays the importance of the cattle industry to the land of California and how it impacted people from different cultures and backgrounds during this time.

These vaqueros' seemed to set a tradition that would take root for future ranchers and cowboys for years to come. These vaqueros' started preparing cattle and horses for events that could occur by simulating possible future events. These events became known as rodeos. Soon after their creation, rodeos were used in celebration and for contests. Some of the events included lassoing, horse riding techniques, bull fighting, and "Carrera del gallo." Carrera del gallo is a skilled challenge where a person is required to grab a live rooster while its head is in the ground while in a full gallop on horseback.¹⁵ Although many of these challenges are no longer in practice, they have made an impact on the cowboy culture and the history of an area as well as on current recreational activities. For example in 1937, a bullfight was put on to celebrate the anniversary of the founding of Mission San Rafael where both Spanish and Native Americans from the local tribes competed.¹⁶ This rodeo helped celebrate the creation of a building that is still in use today and is now a state landmark, as well as show cultural similarities between local natives and Spanish cultures as vaqueros' workers.

Looking over the changes of ranching style through the years in the United States is key to understanding how the industry has changed over the centuries. In Terry G.

¹⁴ Fischer, John Ryan. 2015. *Cattle Colonialism: An Environmental History of the Conquest of California and Hawai'i. Flows, Migrations, and Exchanges*. Chapel Hill: The University of North Carolina Press. <https://dominican.idm.oclc.org/login?url=https://search.ebscohost.com/login.aspx?direct=true&db=nlebk&AN=978175&site=eds-live>.

¹⁵ John Ryan Fischer. 2015. *Cattle Colonialism: An Environmental History of the Conquest of California and Hawai'i. Flows, Migrations, and Exchanges*.

¹⁶ John Ryan Fischer. 2015. *Cattle Colonialism: An Environmental History of the Conquest of California and Hawai'i. Flows, Migrations, and Exchanges*.

Jordan's 1977 article, called "Early Northeast Texas and the Evolution of Western Ranching" discusses the evolution of Texas ranching in the 1800s, specifically from 1820 to 1850. The article provides numerous tables and research on the number of heard growth in different areas of Texas and origin of stock. Jordan explains ear clips and the branding process, and how they are used as a technique to keep track of the cattle, know which area they were from, and who owned them.¹⁷ Secondly, Jordan offers various kinds of maps that illustrate migration patterns of herd location and cattle movement across the United States. The information records different styles of ranching and data during the thirty year period from 1820 - 1850 and gives an overview of the Texas area. Insights on branding and ear clips are also helpful when looking at different techniques and equipment that have been used over the years of ranching cattle.¹⁸ When looking at the life of a rancher, this article brings very little to the table but the techniques it discusses provide insight on duties and troubles that a rancher could have faced during this time period.

In the early 1800's Texas started to get introduced to the cattle industry. Northern Texas was first introduced to the industry by northern neighbors and spread the industry to the southern parts of the state.¹⁹ By mid-century the cattle industry was thriving; the number of cattle in 1845 in Texas was 70,000 and by 1855 it was up to over 94,000.²⁰ This data shows how impactful the cattle industry was to new western lands and how it became a culture that could define an area for generations.

¹⁷ Terry G. Jordan. 1977. "Early Northeast Texas and the Evolution of Western Ranching."

¹⁸ Terry G. Jordan. 1977. "Early Northeast Texas and the Evolution of Western Ranching."

¹⁹ Terry G. Jordan. 1977. "Early Northeast Texas and the Evolution of Western Ranching."

²⁰ Terry G. Jordan. 1977. "Early Northeast Texas and the Evolution of Western Ranching."

Reflecting on the 19th Century of the industry, the main technique used by ranchers was the cowboy style. This style included movement of a herd across the nation also known as a cattle drive.²¹ With the cowboy style of ranching, extra animals were needed for farm sustainability on a ranch. Animals such as ox's were used to plow fields for crop growth, chickens were used as a form of food, and horses were seen as the main way controlling the herd and transportation. Many workers were used to control the herd, animals, and property during this time.²²

The 20th Century

The 20th Century was a major turning point from the older style of ranching into a more modern industrial age. Industrialized ranching became the main style during this century. Ranches truly became ranches, no longer farms, meaning that there was now a lack of other animals and products that were not being used for sale and production. Which meant that the extra animals on the property started to disappear while new technologies such as indoor plumbing, running water, the cattle chute, cars, trucks, and tractors all meant less labor to keep the ranch maintained.²³ Also, ranches were becoming less and less owned by one small family but by other people who owned parts of the land that was being used for the ranch.²⁴ Ranches were starting to turn to techniques that allowed them to use more machinery and new technology. With all this change, this century was a turning point in the cattle ranching world and it began to blossom.

²¹ Terry G. Jordan. 1977. "*Early Northeast Texas and the Evolution of Western Ranching.*"

²² "Agricultural 1950 Changes in Agriculture 1900 to 1950."

²³ "Agricultural 1950 Changes in Agriculture 1900 to 1950."

²⁴ "Industry Statistics." Beef USA. Accessed March 26, 2019.
<http://www.beefusa.org/beefindustrystatistics.aspx>.

The article, "Agricultural 1950 Changes in Agriculture 1900 to 1950" by Cornell University, looks at the subject of new equipment and the industrialization of agriculture within a fifty-year time period between 1900 - 1950.²⁵ The article discusses important changes made in the agricultural industries during that time including the focus on new machinery and methods as an integral part of this time period. This period also covers the industrialization of farming and agricultural work in America. In the beginning half of this century, farmers and ranchers did most of their jobs by hand, using tools such as a plow, pitchfork, and even milked cows by hand. The modern machinery that comes along in this time revolutionized the world and created necessary stepping stones toward the modern era. Inventions like the tractor and the milker simplified the daily routine of ranchers and farmers. Cornell's article states, "... the emphasis has changed from production of products needed on the farm to the highly commercialized production of farm products for sale."²⁶ Cornell includes many graphs and data to emphasize the different aspects of ranching and farming in America leading up to the 1950's. This time period is an essential part of the history of ranching in the United States and a turning point toward the future of the cattle industry.

One key to the early stages of technology in the 20th century was the incorporation of automobiles / motor trucks and the tractor to the cattle industry. When it came to the tractor, the first few decades, tractor use was slow to catch on but by 1920, it started to catch on when farmers / ranchers realized the benefits of the machine. There was no need for ranchers to pay for as many workers for manual labor, when a tractor could do the job for you. By 1922, the price of a tractor dropped from nearly

²⁵ "Agricultural 1950 Changes in Agriculture 1900 to 1950."

²⁶ "Agricultural 1950 Changes in Agriculture 1900 to 1950."

\$800 to under \$400, making it more accessible than ever. Tractor production peaked in 1951 where over 564,000 tractors were produced. Early tractor use stimulated social change, “Rural farming populations decreased as tractor use increased.”²⁷ In 1920 only about 5 percent of farms / ranches reported the use of tractors but by 1950 almost 50 percent reported the use of tractors. Automobiles and motor trucks also had huge spikes in the percentage used on ranches and farms across the United States. The data shows that the 1940’s was a peak in the use of motorized machinery on ranches/farms.²⁸ This is most likely due the social changes brought on by the United States joining World War II. With many workers joining the war effort motorized machinery would help with keeping up production while losing the normal manual labor that the worker used to provide.

When observing technology advances toward the end of the 20th century, you can see the impact of new technology looking towards a more healthy way of handling the cattle. According to AgDaily.com, a popular site for news going on in the Agricultural world, Clever Stockmen most likely began using makeshift cattle chutes soon after they began building more fences.²⁹ A cattle chute is a piece of machinery that is used to hold cattle in a single space it minimizes stress put on the cattle while being handled as well as prevents injuries to handlers and cattle. Chutes are useful for many reasons, from insemination, veterinary checks, branding and tagging, and they are even used in modern

²⁷ “History Of The Tractor - How It Changed Farming.” Sod God, n.d. <https://www.sodgod.com/tractor-history/>.

²⁸ “*Agricultural 1950 Changes in Agriculture 1900 to 1950.*”

²⁹ Charban, Dana. “The Evolution of Cattle Chutes.” AGDAILY, September 20, 2018. <https://www.agdaily.com/livestock/the-evolution-of-cattle-chutes/>.

rodeos to keep the bull still before getting out of the gate. The cattle chute is debatably the most important piece of equipment on a cattle ranch.

“In the 1970s, a more conscientious effort at animal husbandry began taking shape...Cattle chute design and stockmanship techniques evolved as we learned more about the basic principles of cattle behavior. The principles are based on three main tenets of good stockmanship: animal welfare, quality of life, and performance. Dr. Ron Gill of Texas A&M University outlines five of these on his Effective Stockmanship website:

Cattle want to be able to see handlers.

Cattle want to go around handlers.

Cattle want to be with other cattle; they are herd animals.

Cattle want to remove pressure from a handler or equipment.

Cattle only have one main thought at a time.”³⁰

This new style of ranching that was starting to look at cattle handling was a groundbreaking technique that is still very impactful when used today. The use of the cattle chute was an extraordinary leap forward in healthy and animal friendly production. These methods are continuing to get enhanced more and more with further research.

Before the 1970's, techniques looking into the health of the cattle's behavior had not changed much. Although one enhancement in the early 1900's that was very impactful was brush management. King Ranch is one of the biggest cattle ranches in all of Texas and has been so since the beginning of cattle ranching in their area. According to their property breakdown and personal history archive, King Ranch began actively

³⁰ Dana Charban. “The Evolution of Cattle Chutes.”

fighting the brush invasion on their property in the early 1900's. Their information states, "From a cattle ranching standpoint, replacing grass with brush is detrimental because carrying capacity is reduced leading to lower stocking rates," and "Brush continually encroaches onto grassland areas of King Ranch as a result of frequent and extended droughts, the cessation of fire, and the lack of grazing deferment." They found that:

"Techniques are used to design the brush management patterns employed on each pasture. The targeted goal, following treatment, is for 65 percent of the pasture to be open grassland and 35 percent to remain in brush. This ratio should meet wildlife needs for concealment, browse, and edge, while also improving forage production for cattle." ³¹

Managing a major problem like the effect of brush covering grazing land, in an environment that was as commonly used as Texas was during the 20th century was a breakthrough. Using this technique, King Ranch and many other ranches in the area of Texas were able to thrive in the 20th century.

Another Texas Ranch that began to thrive during the 20th century was JA Ranch. It is the oldest privately owned cattle operation in the Panhandle of Texas. It's beginning can be traced back to 1876:

"By 1945 the JA's operations were confined to 335,000 acres in Armstrong, Briscoe, Donley, and Hall counties. Subsequently, a tract of 130,000 acres was divided into eight leaseholds to decrease labor and costs further... Nearly two-thirds of the extant JA properties were rolling pasture land... As of 1990 the

³¹ King Ranch. "Brush Management." King Ranch. King Ranch Corporate Offices, n.d. <https://king-ranch.com/stewardship-education/brush-management/>.

ranch was substantially fenced and cross-fenced and noted for its purebred Herefords and Angus bulls.”

The ranch first began with 12,000 acres so this was a true expansion and shows how the cattle industry was thriving during this time.³² These Texas ranches used modern methods and technology to help them gain the most out of their ranches, with that the product also thrived.

During the beginning of the century (1900) there were about 68 million cattle and calves in America. By 1945, during the year in which the JA Ranch seemed to be thriving, there were about 85 million cattle and calves.³³ That is an average increase of about 380,000 cattle and calves per year. During this increase, there seemed to be a surge of cattle production in the panhandle and the gulf coast of Texas as well as places like southern Florida.³⁴ These areas seemed to find themselves maximizing their opportunities during this “golden era” of the cattle industry. This was most likely caused by the new technology being helpful to the amount of production possible, the improved quality of life for cattle, as well as still having a labor force big enough to support its needs.

Like any industry, a key component of the industry is the workforce, and there is no difference in the cattle industry during the 20th century. The labor changes both in wages and in employment percentage are important factors to look at when analyzing this time period. Looking into wages in the early 20th century, the *United States*

³² H. Allen Anderson, . “JA RANCH.” The Handbook of Texas Online| Texas State Historical Association (TSHA). The University of Texas at Austin , June 15, 2010. <https://tshaonline.org/handbook/online/articles/apj01>.

³³ "Agricultural 1950 Changes in Agriculture 1900 to 1950."

³⁴ "Agricultural 1950 Changes in Agriculture 1900 to 1950."

Congressional Serial Set, 5922 has a sectioned about the wages of farm/ranch workers; covering from 1900 - 1910. This publication has over seven different personal accounts from people in the cattle industry and multiple other personal accounts from others in the livestock industry. This section covers the monthly salary for all the different workers and their different positions and livestock during this 10 year period. The average seems to come out to \$20 - \$30 per month depending on location, season, and livestock.³⁵ These personal accounts also give a small look into the lives of these cattlemen; a perspective on the time and industry straight from the people who worked it day in and day out though this time period.

Continuing to look at the labor records during the 20th century of this industry, it is important to look at the agriculture worker percentage to the population of the country at the time. In 1900 about 40 percent of Americans still worked in the agricultural industry. Within ten years (1910) that percentage dropped to approximately 30 percent and continued to drop at a 5 percent rate from then on till 1950 when the percentage was close to 10% of Americans were still working in the agricultural industry.³⁶ Now with this data, and the knowledge of style and technique advancements due to the change in technology and machinery in the field. It is easy to assume that this decline was caused first by the social changes brought on by the United States joining World War II and then after the war by mechanical and technological advancements in the industry.

³⁵ "United States Congressional Serial Set. 5922." HathiTrust. Washington: US.G.P.O., 1817-, 1911. <https://hdl.handle.net/2027/uc1.b3991873>.

³⁶ "Agricultural 1950 Changes in Agriculture 1900 to 1950."

The 21st Century/The Future

Modern day ranching has become more and more industrialized than ever before. This has led to factory farming becoming one of the leading techniques in the industry. With industrialization comes less staff/ranchers needed due to machines. A lack of employment in the industry has created major shifts in the overall economic value of agriculture.³⁷ With this modern method, grass fed vs. grain fed cattle has become a major debate in the industry; both with their own positives and negatives. Additionally, another major debate in the modern industry focuses on the effects of GMOs.³⁸ Feedlots have become a main tool of this modern technique and allow much more cattle per herd to be fed and many other positives for financial success. . With those positives also come major issues regarding the health of the cattle, their living situations, and how they are butchered. Inhumane butchering has become a major problem with factory farms and has brought a lot of negative attention to the modern technique and industry.³⁹

One modern technique that is very commonly used by major ranching operations today is feedlots. The purpose of a feedlot is to increase the size of each cattle as quickly as possible. If the cattle are kept in smaller spaces rather than allowed to walk open range or pastures, they will gain weight faster with the added benefit of economies of scale. A major problem with feedlots and the fact that cattle are so close together is disease. According to the Canadian Cattle Association, "Cattle may be exposed to different kinds of diseases throughout their lifetime. Cattle are not naturally immune to

³⁷ "Employed Persons in Agriculture and Nonagricultural Industries by Age, Sex, and Class of Worker." U.S. Bureau of Labor Statistics. January 18, 2019. Accessed March 26, 2019.

³⁸ Grandin, Temple. "HOW TO HANDLE CATTLE: Keep Your Grazing Cows Calm by Understanding Their Instincts." Mother Earth News, no. 285 (December 2017): 40.

³⁹ "Industry Statistics." Beef USA.

some illnesses and must receive vaccinations in order to develop a resistance. Feedlot operators consult with specialized feedlot veterinarians to develop animal health protocols that best serve their feedlot. Antibiotics are used in cattle production to treat disease.”⁴⁰ As seen in the quote these antibiotics are used to treat disease not cure. This means that feedlots are highly susceptible to diseases and health issues with their cattle. When it comes to how big of production these commercial feedlots have, they are responsible for most of the beef in the United States. According to the USDA “While there are still many farmer-feedlots across the country, such operations feed only one-third as many cattle as they did in the 1960s. Meanwhile, commercial feedlot production has concentrated in larger businesses. In 2007, 262 feedlots had a capacity of at least 16,000 head, and they handled 60 percent of U.S. fed-cattle marketing.”⁴¹

The best way to have a deeper understanding of how big commercial feedlots operate, is to look at the statistics of some of the largest ones in the United States. The Largest commercial feedlot operation in the United States by far is JBS Five Rivers, LLC. They can have a cattle capacity totaling just under a million in their feedlots. This is almost twice as big as its closest competitor. Their main operation is located in Colorado, but they also have operations in Arizona, Texas, Oklahoma, Kansas, Idaho, and even Alberta, Canada.⁴² This Operation is one of the biggest in the world and is able to produce a high number of cattle annually. Another major feedlot operation in the

⁴⁰ “Feedlot Health Management.” The Canadian Cattlemen's Association. The Canadian Cattlemen's Association, n.d. <https://www.cattle.ca/cca-resources/animal-care/feedlot-health-management/>.

⁴¹ Economic Research Service/USDA. “How Has the Structure of Animal Agriculture Changed?” U.S. DEPARTMENT OF AGRICULTURE. United States Department of Agriculture, n.d. https://www.ers.usda.gov/webdocs/publications/44292/13804_eib43b_1_.pdf?v=0.

⁴² “Top 20 Feedlots.” Ag Professional. Farm Journal, Inc., n.d. <https://www.agprofessional.com/sites/default/files/inline-files/CattleFax-Top-20-Feedlots.pdf>.

States in Harris Ranch. This ranch is located in California and can be seen just off of Highway 5. Their main offices are located in Coalinga, California but their main feedlot is located just outside of Bakersfield.⁴³ Harris Ranch is the largest feedlot in California and is ranked fourteenth in the United States by size alone. They also have a capacity of 135,000 cattle.⁴⁴ A very small operation in comparison to JBS Five Rivers. Harris Ranch Inc. keeps their operations statistics public. They state that they produce and market over 200 million pounds of beef annually. They do this by what is called a cattle feeding cycle; where each cattle starts off grazing on grass on ranges or pastureland until moved into feedlots until to reach approximately 1,250 pounds. This process can take 19-28 months in total.⁴⁵ This practice of grass feed before feedlot is not a common practice in all feedlot operations. Harris Feeding Company's feedlot covers nearly 800 acres and has a capacity of 250,000 head of cattle. In their beef company alone Harris Ranch makes more than \$400 million in annual sales.⁴⁶ With this modern technique of feedlots the need for ranch hands and other workers has dropped due to the rise of technology and other factors.

By looking at the industry statistics we are able to see turning and reference points to observe the industry's history. The article, "Industry Statistics," by the website Beef USA (produced by the National Cattlemen's Beef Association) shares important statistics for the modern ranching and dairy world. The research tracks numerous data points relating to the cattle world today, including an overview of the beef industry

⁴³ "Family of Companies." Harris Ranch Beef. Harris Ranch Beef Company, n.d. <https://www.harrisranchbeef.com/family-of-companies/>.

⁴⁴ "Top 20 Feedlots." Ag Professional. Farm Journal, Inc..

⁴⁵ "Family of Companies." Harris Ranch Beef. Harris Ranch Beef Company.

⁴⁶ "Family of Companies." Harris Ranch Beef. Harris Ranch Beef Company.

evolution. Beef USA also shows the top five state's statistics on topics like the total number of cattle, the number of heifers that have calved, dairy and beef cows that have calfed, calf crop, and cattle on feed. Additionally, it contains statistics on how the cattle ranching and dairy industries have changed between 2017 and 2018.⁴⁷ It even goes in depth to the weight amount of cattle and the number of such cattle per weight range. Articles from the U.S. The Bureau of Labor Statistics website also provides an important source for the statistics of the cattle industry. The website keeps track of wages and employment in ranching and agricultural work. The U.S. Bureau covers the 2017 median pay of the average agricultural worker, as well as the number of jobs and the employment changes in 2016. It also mentions the statistics of employed persons in agriculture and nonagricultural industries categorized by age, gender, and worker class. This article shows the difference in fields and wages in the agricultural industries as well as the difference in population of employment in agriculture and non-agriculture industries within the United States.⁴⁸ These articles discuss how they received their data along with an overview of the agricultural sector industries.

Looking into employment with on-farm workers in the United States another issue can be seen. There is a lack of employment in the industry. According to the United States Department of Agriculture Economic Research Service there were about 2.6 millions of on-farm jobs in the United States agricultural industry in 2018. This would have been a total of 1.3 percent of U.S. employment.⁴⁹ As seen throughout this essay

⁴⁷ "Industry Statistics." Beef USA.

⁴⁸ "Industry Statistics." Beef USA.

⁴⁹ "Ag and Food Sectors and the Economy." USDA ERS . United States Department of Agriculture, May 4, 2020. <https://www.ers.usda.gov/data-products/ag-and-food-statistics-charting-the-essentials/ag-and-food-sectors-and-the-economy/>.

the percentage of people working in the agricultural industry continues to drop. The younger generations seem to be looking elsewhere for employment and leaves the idea of agricultural employment behind.⁵⁰ This is a mistake. The agricultural industry will not disappear, only evolve and to work in the industry does not require much. The U.S. Bureau of Labor Statistics shows that the average salary for Farmers, Ranchers, and Other Agricultural Managers is on average \$71,160 per year or \$34.21 per hour. This is considerable pay for jobs that typically require only High school diploma or equivalent. The bureau also predicts little change in employment from 2018 to 2028. They predict only a small loss of 9,000 jobs in total.⁵¹ With the consistent need of agriculture in the United States, employment in the agricultural industry should not fall but rise. Citizens need to realize the importance of this field and how it can be a very stable income for their financial security. Agriculture has been a staple of human existence and will be for generations to come.

In order to understand the industry, it is crucial to examine issues in the current state of the industry. The book by Millstone, Erik and Tim Lang, *“The Atlas of Food: Who Eats What, Where, and Why”*, looks at the modern issues relating to food and agriculture in the world as well as looking into the past of agriculture and its importance in human existence. For example, the authors look at issues like food and water contamination, over nutrition, micronutrient deficiency, processing, farming, and trade.⁵² This text helps show modern problems caused by modern cattle ranching, how it

⁵⁰ “Industry Statistics.” Beef USA.

⁵¹ “Farmers, Ranchers, and Other Agricultural Managers : Occupational Outlook Handbook.” U.S. Bureau of Labor Statistics. U.S. Bureau of Labor Statistics, April 10, 2020. <https://www.bls.gov/ooh/management/farmers-ranchers-and-other-agricultural-managers.htm>.

⁵² Erik Millstone and Tim Lang. *“The Atlas of Food: Who Eats What, Where, and Why.”* Berkeley: University of California Press, 2013.

has developed and the issues that come along with it. Including the debates similar to grass fed over grain fed.

One of the biggest debates in the cattle industry during the 21st century is the debate between having cattle raised on grass fed or grain fed. Before the 1960s, most cows raised for human consumption grazed on a variety of grasses from the land. However with the impact of factory farming and other types of feeding operations, these cows were switched mainly to a diet of corn and soy.⁵³ The main debate between grass fed vs grain fed is the health impacts vs the cost. “According to Kelly Newton, co-owner and operator of BC’s grass-fed and grass-finished Sum as Mountain Farms, explains that cows are biologically designed to eat grass—not grain. Because they’re ruminants, cows possess a four chambered stomach that is specifically designed to break down grass cellulose and convert it into healthy protein.”⁵⁴ This means that a cow raised on grass will be healthier than grain and create a more beneficial meat for the consumer. Most of the modern feedlots and operations seem to be using mainly grain to feed its herds. This issue with grain fed is a major issue in modern day cattle ranching.

In this modern time of social media and political activism for animal rights, these current techniques are being heavily criticized for being cruel to animals. The abuse found in feedlots and other forms of feeding operations are becoming more public and are causing backlash on the companies that cause them. Movie documentaries and videos

⁵³ Browne, Jennifer. “Grass-Fed Vs Grain-Fed Meat.” *Alive: Canada’s Natural Health & Wellness Magazine*, no. 384 (October 2014): 177–80.

<https://search.ebscohost.com/login.aspx?direct=true&db=awh&AN=101189330&site=eds-live>.

⁵⁴ Jennifer Browne. “Grass-Fed Vs Grain-Fed Meat.”

such as “Food, Inc.”⁵⁵ and the videos of abuse from Fair Oaks Farms in Indiana⁵⁶ are causing major concerns with consumers. Customers and humanitarians are causing the industry to change their cost effective ways to a more humanitarian way. Although there are major issues with this modern technique, there are professionals in the field that have been finding new techniques. These new techniques may not yet have a new style of ranching but they are heading in the right direction.

An article that examines the subject of ranching style today that is more humanitarian is, “HOW TO HANDLE CATTLE: Keep Your Grazing Cows Calm by Understanding Their Instincts,” by Temple Grandin. The writing describes how to handle cattle in ranching and the modern styles of doing so. The author Temple Grandin is a well-respected professional in the animal-caring field. Her research proves that keeping grazing animals calm during handling is beneficial to the rancher and the value of the cattle.⁵⁷ It describes modern techniques which help ranchers handle their cattle with ease and prevent adding additional stress to said animals. A modern way of handling cattle is letting the cattle lead the handling process by using their instincts. By understanding how cattle react in the presence of others ranchers are able to give them the least amount of stress possible.⁵⁸ Another modern technique requires ranchers to learn how to handle various situations while handling their cattle. Some variables can include different terrain, sound, or predator attacks. The evolution of ranching style has been well documented

⁵⁵ “Food, Inc.”. Public Broadcasting Service. 2008.

⁵⁶ “Disturbing Video Taken of Calf Abuse at Fair Oaks Farms - CNN Video.” CNN. Cable News Network, June 7, 2019. <https://www.cnn.com/videos/business/2019/06/07/fair-oaks-animal-abuse-orig-ja-dbl.cnn-business>.

⁵⁷ Temple Grandin. “*HOW TO HANDLE CATTLE: Keep Your Grazing Cows Calm by Understanding Their Instincts.*”

⁵⁸ Temple Grandin. “*HOW TO HANDLE CATTLE: Keep Your Grazing Cows Calm by Understanding Their Instincts.*”

throughout the United States and articles like this have been key to seeing the progression of the industry.

Conclusion

Looking over the change in the Cattle industry from the 19th to 21st century there are major changes that have allowed the evolution of this industry to be what it is today. This industry has evolved with the times of the nation and will continue to do so for the future, yet in its current states it will need to change faster than in the past.

Looking back on the 19th century, it is easy to see how the cowboy style of ranching was very impactful for its time. It had a very sustainable use of farmland, it kept both products needed to live on the land as well needs of the cattle in mind. This style did have its issues; cattle drives and the lack of technology cause the industry to be inefficient. However with this inefficiency, the need for employment was high and the employment rates matched the need.⁵⁹ Although inefficient, the technology that was used is mostly still used today. Ear tags and branding is still a staple in the cattle industry when dealing with a herd.⁶⁰ Without these advancements it is hard to imagine the effectiveness of managing a herd today.

While the 19th century was inefficient the 20th century focused on changing that. With the rise of industrialization in America the farms that held these cattle could now become true ranches. This meant the workers only needed to focus on the cattle no longer the other need of the sustainability that the previous century had to deal with. With the inventions such as indoor plumbing, running water, the cattle chute, cars, trucks, and tractors all meant less labor to keep the ranch maintained and more labor

⁵⁹ "Agricultural 1950 Changes in Agriculture 1900 to 1950."

⁶⁰ Terry G. Jordan. 1977. *Early Northeast Texas and the Evolution of Western Ranching.*

focused on the cattle. This technology and industry boom allowed ranches to grow in cattle size allowing more products to be available. With the interference of World War II the population of agricultural workers dropped. This caused the ranches to rely on the new technology to maintain production. This fall of workers never seemed to stop and has caused a lack of on-farm workers in the United States today.⁶¹

Today the cattle industry is as efficient as ever but lacks in the other areas. Factory farming and feedlots allow mass production, yet concern for the health of the cattle.⁶² With modern feeding techniques in feeding operations and the heavy use of grain in the cattle's diet, beef companies are able to make massive amounts of profits.⁶³ However with this new more industrialized technique the need for a workforce is lowered.⁶⁴ The current situation of the workforce in this industry is insignificant in comparison to its past. This is a major cause for concern for the health and sustainability for the future of the cattle industry. Also with the increase in consumer knowledge the industry is having major backlash in the way it handles its livestock as well as the concerns about the quality of the product. This current style is concerning for the industry's current state and the outlook on its future.

This modern way of ranching is unsustainable for future success. Ranchers and farmers will have to turn to new techniques and styles to improve sustainability for the future of the United States cattle industry. This industry needs to evolve to match the needs and concerns of the people. This evolution of cattle ranching needs to focus on handling cattle in a safe and humane way. Going back to grass fed beef is also going

⁶¹ "Agricultural 1950 Changes in Agriculture 1900 to 1950."

⁶² "Feedlot Health Management." The Canadian Cattlemen's Association.

⁶³ "Family of Companies." Harris Ranch Beef. Harris Ranch Beef Company.

⁶⁴ "Industry Statistics." Beef USA.

to be a key. This will help the overall quality of the product while also being humane to these animals. Finally, having a rise in employment in the agriculture industry will allow workforce sustainability for an essential industry of this nation. These new techniques and styles are the only way to ensure long-term success for the future of the American cattle industry.

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