

# OUT OF SIGHT, OUT OF MIND:

THE IMPACTS OF CHICKEN MEAT FACTORY FARMING IN THE STATE OF GEORGIA



GEORGIANS FOR  
PASTURED POULTRY



Chef Shaun Doty

**DARBY FARMS**



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PASTURED POULTRY

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# FORWARD *By Janisse Ray*

All my life I dreamed of being a farmer. My mother had been glad to leave the farm, where I spent many Saturdays with my grandparents Arthur and Beulah, whose children one by one had moved away to the big Southern cities of Jacksonville, Orlando, Chattanooga. Deep in my psyche are my grandfather's mules, my grandmother's chickens, fields of vegetables and sprawling watermelon vines, full corn cribs. During my pre-school years, my grandmother milked a cow. Then there was the Farmall-A tractor and bird guano fertilizer, and after my grandfather died, when I was six, subsidized tobacco and Roundup weedkiller, monster combines and terrible erosion and the invasion of privet. The cane grinder was sold, the smokehouses fell, the last hen wasn't even eaten. Grandmama sent the milk cow to the livestock auction. I remember her final pea-patch.

During what is misnamed—unless you think of the algae from field runoff—the Green Revolution, agribusiness began to woo farmers toward a new dawn. It started to blind those who husbanded food. The Green Revolution, which in this country was an entire narrative in itself—a beginning, middle, and end—cemented a slide from agrarian to industrial life. Industrial agriculture promised an end to world hunger and although it did for a time coincide with the production of more food per acre and worker than ever before,



Photo of Janisse Ray provided by Janisse Ray.

one billion people in the world are still hungry. Of the well-fed, more are obese from a glut of calories and a paucity of nutrition. Antibiotic resistance is on the rise. Animals in factory farms are obscenely treated. Environmentally, industrial farms have become point sources for pollution.

On that same farm, the one I roamed as a child eating crabapples and muscadines, pomegranates and sand pears, now the story is Roundup-resistant pigweed growing among rows of genetically modified soybeans in fields leased to chemical



farmers. The fencerows are bulldozed, demolishing the plantings of wax myrtle and wild cherry, accompanied by the mockingbirds and cardinals. The sassafras tree my grandfather so carefully skirted with his harrows is dead and gone. In the neighbor's field are two industrial broiler houses, lit night and day, where the chickens are fed all sorts of atrocities, including their own feces, I hear, and where the farmer is a slave to a contract written not in his or her best interest, but in the interest of profit-making by a corporation. Sometimes the smell of burning chicken corpses fills the air. Sometimes the air is putrid with the smell of chicken litter being spread on nearby fields, because something has to be done with it.

Any one of us middle-aged Americans could be the poster child for the story of agriculture in the United States, one that began with working farms, farm animals, seed saving, a land-based, subsistence economy, farming children. And, poof, all that was gone, brushed aside so casually. Many people still alive today have seen the entire process of American ag: the function, the falling apart, the rise of big chemical and factory farming, and now the coming back. We are witnessing in agriculture a revolution, a full circle.

Except it's not a circle. We are not returning to where we were. With some of the old knowledge intact and armed with fresh

knowledge, we are looping forward to a new place. And we're coming there different. We are coming better prepared. We're coming educated. We understand this, our food is killing us. Food raised on small, organic, sustainable farms by conscientious farmers is healthier, tastier, and better for the environment.

We choose good food.



# INTRODUCTION

The state of Georgia is the largest producer of meat chickens (broilers) in the country<sup>1</sup> and nearly all of the broilers are raised in close confinement systems, also known as factory farms. The state raises and slaughters 1.4 billion meat chickens every year,<sup>2</sup> in a country that confines and slaughters 9.2 billion farm animals annually in factory farms.<sup>3</sup>

At any one time there are approximately 24 chickens per person in Georgia. In fact, if Georgia were a country, it would be the sixth largest poultry producer in the world,<sup>4</sup> on a par with China and Brazil.

It is important to examine the true costs of producing factory farmed chickens and the price Georgia pays for this domination. The factory farming system puts pressure on growers to produce as many chickens as fast as they can, with resulting detrimental impacts on animal, farmer and worker welfare, and on human and environmental health.

The following chapters outline the impacts this industry is having in Georgia on the key issues of animal welfare, human and environmental health, and worker and farmer well-being. The final chapter outlines existing alternatives and a way forward to a fair, humane and sustainable method of raising chickens. The report concludes with a new vision for Georgia from a newly formed working group: Georgians for Pastured Poultry.



Georgia raises and slaughters 1.4 billion meat chickens every year.

# HISTORY

Modern-day chicken farming originated in north Georgia in the early 20th century. Many credit Jesse Jewell, a feed salesman from Gainesville, Georgia, with making Gainesville the “poultry capital of the world.”<sup>5,6</sup>



Gainesville, Georgia: Poultry capital of the world.

During the Depression, many farmers were desperate and had little money to purchase feed or chickens. Out of necessity for his family’s struggling feed business, Jewell conceived the idea to increase feed sales to farmers: he started selling baby chicks to Georgia farmers on credit. The farmers raised the chicks and then sold the fully-grown chickens back to Jewell for a profit. Eventually, Jewell had enough farmers producing broilers for him that he was able to invest in his own processing plant and hatchery.<sup>7,8</sup> Jewell was one of the first to create the practice known as “contract farming.”

In 1939, there were fewer than 60 chicken farms in Hall County. With the onset of World War II, the poultry industry in Georgia began to grow. The War Food Administration reserved for its needs all of the chicken processed in North Georgia. Having a guaranteed buyer of chicken created a boon for chicken farmers. After the war, others in north Georgia started getting into the chicken business and used Jewell’s business as a model. By 1950, Hall County alone had over 1,000 farms.<sup>9,10</sup>

Jewell’s business continued to grow. In 1954, he added a feed mill and rendering plant.<sup>11,12</sup> Since all phases of his business (raw materials, processing, and distribution) were combined, his company was fully vertically integrated.<sup>13,14,15</sup> Jewell was also innovative when it came to marketing chicken. He was one of the first to market frozen chicken.<sup>16</sup>

Broiler production in the region increased dramatically between 1947 and 1960. Competition in the industry resulted in low prices. Automation became an industry norm in the 1960s to keep up with rising consumer demand.<sup>17</sup> Poultry production continued to increase in the 1970s and 1980s as Americans consumed less red meat and more chicken.<sup>18,19</sup> Low prices and increased concerns about health steered people increasingly away from pork and red meat and toward consuming more chicken.<sup>20</sup>



## GEORGIA TODAY

During the 1990s, consolidation became the norm and the number of companies decreased. The ability to serve larger markets was necessary to survive. Vertical integration and the widespread use of contract farmers enabled a few companies to process a great deal more chickens than had previously been possible.<sup>21,22</sup>

In less than a decade, the number of Georgia chicken farms was reduced by approximately one-half.<sup>23</sup> Only a few companies dominate the industry today.<sup>24,25</sup> In 2006, Gold Kist, an Atlanta based company founded during the Great Depression, merged with Pilgrim's Pride Corporation to form the world's largest poultry company.<sup>26</sup> Other companies in the industry include Cagle's, Fieldale Farms, Claxton, and Mar-Jac. All are based in Georgia. Tyson, Con-Agra, Continental Grain and Perdue are based in other states.<sup>27,28</sup> These companies are all vertically integrated and continue Jewell's practice of contracting with poultry farms to raise broilers from chicks.<sup>29,30,31</sup> Contract farming has now been an integral component of the poultry industry for 50 years.<sup>32</sup>

Georgia companies began exporting chickens to deal with overproduction and to sell a surplus of dark meat. By 2001,

Georgia exported poultry worth more than \$308 million annually.<sup>33</sup> Other countries including Brazil, China and Thailand also export poultry but government subsidies have given American poultry processors an export advantage.<sup>34</sup>

Georgia has risen to become the top broiler-producing state in the country, supported by technological advances, consolidation of farms, aggressive marketing, low prices and increased consumer demand.<sup>35,36,37,38,39</sup> The poultry industry makes up the largest segment of the state's agriculture, with an overall annual economic impact for the state of \$13 billion or more.<sup>40,41,42,43</sup> The broiler business alone in Georgia is valued at over \$3 billion annually.<sup>44</sup> Poultry is indeed "big business" in Georgia.<sup>45</sup>



# ANIMAL WELFARE

## THE STATE OF CHICKENS

Broiler chickens, often called broilers, are a specialized chicken reared and eaten for their meat. No other farm animal has been so selectively bred to grow to such an unnatural size so early in its development.<sup>46</sup> Chickens used today in factory farming are almost unrecognizable from their ancestors.

As a result of decades of selective breeding for fast growth, broiler chickens in the United States can reach a weight of over 5.5 pounds in 7 weeks or less.<sup>47</sup> The chicken is not yet mature at that age, but is already much larger and heavier than most adult laying hens.<sup>48,49</sup> The chicken meat that is eaten in the United States is of a very young bird, one generally slaughtered in between 39-57 days of age depending on management practices.<sup>50</sup> Pilgrim's Pride, the largest poultry company in the world, reports their chickens reaching market weight (slaughter weight) in just 6-7 weeks.<sup>51</sup> While this rapid growth has allowed for mass production of cheap meat, the price the chickens pay is a steep one in terms of their welfare.

### THE FAST GROWING BREED OF CHICKEN

The modern broiler chicken is unnaturally large, especially in the breast region, due to years of selective breeding. In 1980, chickens were reported to reach a “finishing

weight,” or slaughter weight, of 3.80 lbs. By 2010, the genetics of the broiler chicken had been pushed to the extent that chickens were reaching a slaughter weight of 5.65 lbs, a 33% increase in size in 30 years.<sup>52</sup> The chest with its white breast meat, the part most like to eat, has grown huge in relation to the rest of the body.<sup>53</sup>

Not only are broiler chickens now bred to grow larger, they are bred to grow faster.<sup>54</sup> Over the last 50 years, growth rates have quadrupled in the pursuit of cheaper and cheaper chicken.<sup>55</sup> Selective breeding for the rapid growth of a large bird comes with serious animal welfare consequences.

Most welfare problems relating to broilers are caused by genetic factors, according to the European Food Safety Authority (EFSA) Panel on Animal Health and Welfare. In a 2010 report, EFSA concluded that *“the major welfare concerns for broilers are leg problems, contact dermatitis, especially footpad dermatitis, ascites and sudden death syndrome. These concerns have been exacerbated by genetic selection for fast growth and increased feed conversion.”*<sup>56</sup>

This concurs with an earlier conclusion by the European Union Scientific Committee on Animal Health and Welfare, which went on to recommend that *“breeding which causes very poor welfare should not be permitted.”*<sup>57</sup>



This chapter details the welfare problems for chickens resulting from selective breeding for rapid growth, feed conversion, and other trends in corporate broiler treatment. These include leg disorders, ascites (in chickens, a disease primarily caused by heart problems)<sup>58</sup>, and sudden death syndrome (an acute heart failure condition) in growing birds. The major factor influencing the welfare of broilers is the accelerated rate of growth.<sup>59</sup> According to industry sources, two companies provide at least 80% of the world's breeding broilers.<sup>60</sup> In intensive systems, similar breeds are used throughout the world.

## LEG DISORDERS

Leg disorders common in broiler chickens include skeletal, development and degenerative diseases.<sup>61</sup> Birds suffering from these disorders can feel pain and discomfort. One of the most telling studies of pain in lame broilers was conducted by Danbury et



Painful leg disorders common to chickens include skeletal, development and degenerative diseases.

al.<sup>62</sup> The study revealed that lame broiler chickens self-selected significantly more feed containing a pain-killer drug than did healthy birds.

An extensive 2008 study of leg conditions in chicken factory farms in the United Kingdom found that at 40 days old (near the end of the growth cycle in the UK), over 27.6% of birds showed poor locomotion and 3.3% were almost unable to walk.<sup>63</sup> Extrapolating these figures to the US (where 8.84 billion chickens are raised annually)<sup>64</sup> would mean that an estimated 2.44 billion would show poor locomotion and 292 million chickens would have great difficulty walking. As chickens in the US are reared to around 5.5 pounds, whereas in the UK most are reared to between 4 and 5 pounds, the extent of the leg problems is likely to be even worse in the US. As a chicken gains weight, locomotion difficulty is likely to increase.

In fast growing breeds, the development of joints does not always keep pace with rapid growth. Skeletal disorders can include bone and joints not developing properly, a disorder called tibial dyschondroplasia.<sup>65</sup> In this condition, merely walking can be painful for the chickens, so that they move around only when absolutely necessary to reach food or water. Toward the end of what the industry deems their “growth cycle,” or just before slaughter, they spend



the majority of their time just sitting. At just 6 weeks old, one study reported broilers spend 76% of their time lying down. Birds with significant lameness lie down for 86% of the time.<sup>66</sup> Indeed, lying down is the main behavior of fast-growing breeds. According to one study, the high body weight of broilers becomes a physical constraint to being active. EFSA states that *“it is not clear whether the birds show reduced mobility because of a lack of motivation or because of an inability to do so, e.g., lameness, generalized weakness and hyperthermia. However, some studies suggest that these two aspects coexist. Increased mobility will lead to fewer skeletal abnormalities.”*<sup>67</sup>

## HEART AND LUNG DISORDERS

As a result of selective breeding, many chickens' hearts and lungs cannot keep up with their unnaturally large and rapidly growing bodies. The hearts and lungs are not as proportionally large as the bodies they have to service. The result can be heart and lung disease. Rapid growth produces a high demand for oxygen.<sup>68</sup> Because they have trouble breathing, the birds often just sit and pant.

Ascites is a disease resulting from heart problems in chickens that often results in cardiac failure and death. One worldwide

study<sup>69</sup> conducted in 1996 found that ascites resulted in 4.7% mortality in broiler chickens, making it one of the leading causes of death. However, ESFA reports that according to industry data *“the prevalence of ascites has decreased over the past 10 years.”*<sup>70</sup> Ascites mainly affects fast growing breeds such as those are used in the factory farming of chickens.<sup>71</sup>

Sudden Death Syndrome, also known as “flip over syndrome,” is another problem found in modern broilers. It is metabolic in origin, and like ascites, it mainly affects fast growing male birds.<sup>72</sup> The condition is characterized by *“sudden vigorous wing flapping, muscle contractions and obvious loss of balance. Vocalization can be heard in some cases. In the final phase the birds fall on their back or to the side and die.”*<sup>73</sup> The death occurs rapidly, in 37-69 seconds,<sup>74</sup> due to cardiac failure, which in turn results from rapid growth and increased demand for oxygen. Nutrition and environmental conditions also play a role in the occurrence of this syndrome.

ESFA concludes that “there is a link between growth rate and ascites and probably also Sudden Death Syndrome.” They also conclude that “slow growing genotypes are more resistant to ascites.”<sup>75</sup>



## MORTALITY RATES



Ninety percent of growers in Georgia use what are known as “burial pits,” in which animals are buried in sealed pits in the ground and left to decompose.

The same ESFA report cites evidence that “higher growth rates of certain genotypes are associated with increased mortality. Mortality rates in slow growing strains may be lower than in standard lines but also depends of other factors, e.g., type of production, feeding regime, rearing duration and management.” Similarly, a study conducted by the Royal Society for the Prevention of Cruelty to Animals (RSPCA) indicated that higher welfare indoor systems paired with slower growing breeds show a much lower mortality rate than standard factory farming systems (1.8% vs. 5.1%). The higher welfare systems also show much lower incidence of leg problems, foot pad burn (3.5% vs

6.5%), hockburns (3.5% vs 19%) and dead-on-arrival at slaughterhouse (0.05% vs 0.17%).<sup>76</sup>

A typical flock in Georgia has a 3% mortality rate, according to the University of Georgia’s College of Agriculture and Environmental Science (CAES).<sup>77</sup> Applying 3% to Georgia’s 1.4 billion annual chicken production means that 42 million chickens are dying every year before reaching slaughter age. According to CAES more than 90% of growers in Georgia use what are known as “burial pits,” in which animals are buried in sealed pits in the ground and left to decompose.<sup>78</sup> (photo)

## STOCKING DENSITY



One house can contain more than 30,000 chickens.

An additional welfare concern is the high concentration or stocking density in which chickens are kept. In Georgia in 2010, the typical grow house for one flock was reported to be 50 feet wide and 500 feet



long.<sup>79</sup> One such house can contain more than 30,000 chickens. At such densities, each chicken has just one piece of 8.5x11 paper (about 93 square inches) of floor space by the time it reaches slaughter weight. The chicken's ability to express natural behavior is severely restricted at such high stocking densities.<sup>80</sup>

All of these 30,000 chickens crowded together produce enormous amounts of urine and feces in an enclosed area. This waste produces concentrated amounts of ammonia and dust particles, which in turn cause ammonia burns such as breast blisters, hock burns and footpad dermatitis (foot blisters). As expected, studies indicate welfare is poorer at the higher stocking densities.<sup>81,82</sup> High stocking densities reduce the ability of chickens to perform natural behavior, such as locomotor behavior and preening. The presence of leg disorders is also higher.<sup>83</sup>

## UNNATURAL CONTINUOUS LIGHTING

Typically broilers are subjected to continuous or near continuous artificial light to enhance growth and food intake. However, studies have found that periods of darkness can be beneficial to the welfare and reduce leg problems in broilers.<sup>84</sup> Chickens, like all animals, rely on periods of continuous darkness to regulate certain bodily functions.

These include the diurnal rhythms of melatonin, which affect thermoregulation, feeding and digestion, and immune functions.<sup>85</sup> Sleep is also required for growth and healing.<sup>86</sup>

The National Chicken Council (NCC) guidelines recommend (excluding the first and last week of life), a minimum of 4 hours of darkness in a 24-hour period. However, during this so-called "darkness," the guidelines allow "*illumination at bird level [that] does not exceed 50 percent of the light level in the remaining hours,*" meaning dimmed lights, rather than darkness. Furthermore, the darkness does not have to be continuous and can be given in 1, 2 or 4-hour increments.<sup>87</sup>

## CATCHING

Typically, at the end of the "growth cycle," chickens are manually caught and placed into crates on trucks for transport to slaughter. A catcher will catch up to 7 chickens (3 in one hand, 4 in the other) and place them into crates. The crates are then loaded, stacked onto trucks and sent to the slaughterhouse. Catching is usually done in darkness, typically at night, to reduce stress and simplify the process of catching.

According to Southern Poverty Law Center, supervisors require catchers to catch and crate at a pace of around 1000 birds per hour. With each bird weighing approximately 5.5 pounds,



this equates to each catcher lifting 5000 pounds each hour.<sup>88</sup> Considering the leg disorders described previously, it is likely chickens suffer tremendous pain when held upside down and carried by their legs, bringing the full pressure of their body mass to bear on their legs. In addition, it is likely stressful when they are chased, caught and placed into crates. Carried out improperly, the catching process can result in bruising, fractures and other injuries to the bird.<sup>89</sup> According to the College of Agriculture and Environmental Science at the University of Georgia, 90% of bruising occurs within 12 to 24 hours before processing, which is when catching and crating occur. They report that areas most frequently bruised are the breast (42%), wings (33%) and legs (25%).<sup>90</sup>

## TRANSPORT AND SLAUGHTER



The transport of chickens to slaughter.

More chickens are transported to slaughter than any other farm animal. While trip length is not significant (according to our

investigations it is approximately 30 minutes in Georgia),<sup>91</sup> it is by no means welfare friendly. Chickens are caught and put into crates, which are then stacked onto trucks 10 high and twice as long (photo). Some chickens die during transport. Dead on arrival (DOA) is a term used to refer to chickens that have died between catching and the moment of slaughter, usually during transport. The reported national average for DOA is between 0.35 to 0.37%.<sup>92</sup> This equates to 31-33 million chickens arriving dead, based on today's figure of 8.84 billion broilers produced annually. The NCC recommends corrective action only when there is a DOA rate of more than 0.5%.<sup>93</sup> Therefore, anything under 45 million chickens arriving dead nationally per year, or under 7 million chickens in Georgia, would not require corrective action.

A recent Georgia study showed that while handling during catching and disease play a role, *“physical injury was the primary cause of DOA during live haul under normal conditions.”*<sup>94</sup> A UK study found that 51% of “dead on arrivals” had died from heart failure, potentially from the stress that catching and transport imposed on cardiovascular systems already burdened by accelerated growth. Other injuries included fractured femurs, ruptured livers, crushed heads, and dislocation of the necks during catching or unloading.<sup>95</sup>



The slaughter of chickens happens at an extremely fast rate. On average, in a single processing plant, 1 million chickens are slaughtered in a 5-day working week – that’s 200,000 birds per day.<sup>96</sup> Approximately 200 birds per minute are slaughtered in a given facility.<sup>97</sup> Typically, chickens are removed from crates, placed on conveyor belts and shackled upside down. Currently, no laws protect chickens at slaughter.

One study concluded that “*shackling is likely to be a very painful procedure*” for chickens.<sup>98</sup> A recent patent application supporting the case for a gas stunning process (which avoids the requirement to shackle) argued that the shackled position raises levels of corticosteroids and other hormones that are related to the birds well-being, indicating heightened levels of stress. Furthermore, chickens can struggle excessively prior to being shocked (which occurs after shackling) leading to wing injury.<sup>99,100</sup>

Chickens are then usually stunned electrically, after which they are cut at throat and bled. While the NCC guidelines recommend stunning, or rendering them senseless before slaughter, it is not a legal requirement in the US. Rendering any farm animal, including chickens, instantaneously insensible to pain (i.e., stunning), is a legal requirement throughout the European Union.<sup>101</sup> There is a clear body of evidence

that stunning is necessary in order to avoid the pain and suffering of chickens and other farm animals during slaughter.<sup>102,103,104</sup>

In the US, farm animals are exempt from the federal Animal Welfare Act, which regulates the treatment of animals in research, exhibition, transport, and by dealers. The only piece of federal legislation protecting farmed animals is the Humane Slaughter Act. However, chickens are exempt from this as well. Despite well documented welfare issues, and even though chickens make up 95% of the farm animals raised in the US, there are no federal laws to protect the welfare of these birds.

The best option for humane slaughter is Controlled Atmosphere Stunning (CAS), where animals are rendered senseless through gassing while still in their crates, which avoids the need for shackling. According to The New York Times, only a handful of slaughterhouses in the US currently use CAS, despite it being a more humane method of slaughter.<sup>105</sup> According to the Agriculture of the Middle Initiative, the predominant method of stunning used in the US is low voltage electrical stunning.<sup>106</sup>

## BROILER BREEDERS

Broiler breeders are the parents of meat chickens. They are often kept in specialist breeder farms. The key concerns for broiler breeders include feed restriction (carried out



in order to curtail rapid growth), mutilations, and lack of environmental enrichment.

## FEED RESTRICTION

Broiler breeders have the same rapid growth potential as their progeny, but they are not “required” to reach 4.4 pounds (2kg) until 18 weeks of age. Indeed, they would suffer severe health and welfare problems if they reached this weight in the less than 6 weeks it takes their offspring. In addition, their rate of production (numbers of fertile eggs) would also be adversely affected. According to the 2010 ESFA report on the welfare of broiler breeders, *“if broiler breeders were fed standard broiler diets ad libitum during their entire life, like commercial broilers, they would grow too rapidly and become far too heavy to maintain good health before reaching the age of sexual maturity. This would have detrimental effects on their health, their fertility and their welfare.”*<sup>107</sup>

This obviously presents challenges for the broiler industry, where production of a viable next generation is critical to the continuation of the business.

The industry’s solution has been to try and slow down the fast growth rates of the breeders. Predominantly, this “solution” has consisted of severe feed restrictions. In the US, the extreme “skip-a-day” method is traditionally used, whereby broilers are given

food for a period, such as 4 or 5 days, and then are starved for a day.<sup>108</sup>

EFSA has documented the consequences of the severe feed restriction, including chronic hunger, the performance of abnormal behaviors such as over-drinking, increased pecking at non-feed objects, and increased pacing. Feed restriction also leads to increased competition and aggression at feeding time, which may in turn lead to injured birds.<sup>109</sup>

Water availability is also restricted to prevent the birds from drinking. Light levels are kept low to reduce aggression. In short, the industry maintains the physical fitness and production potential of broiler breeders by depriving the animals of feed, water and light, leading to chronic hunger and thirst while interfering with the performance of natural behaviors.

## MUTILATIONS

At the hatchery, the gender of the birds is determined, and the birds are then commonly vaccinated and undergo one or more mutilations. These may include de-toeing, toe clipping, and beak trimming. The industry claims that birds are mutilated in order to reduce injury to other birds in the flock, such as feather and skin damage. These surgical procedures are carried out

without any anesthetic and without any postoperative pain relief. As ESFA states, *“birds are sentient and can experience pain and distress and the tissues affected are well innervated. ... [I]t is very likely that the birds will feel pain.”*<sup>110</sup>

The NCC guidelines allow for mutilations including beak trimming, comb dubbing, and toe clipping. They refer to beak trimming as *“precision beak conditioning.”* They state that this procedure can *“be carried out using a hot blade method removing the tip of the beak (may be used up to 10 days of age) or an infrared beam that does not cut the beak. The tip of the beak is worn off by normal pecking behavior and does not re-grow.”* They refer to toe clipping as *“male back toe conditioning”* and say that it is a *“fast and safe procedure.”* However, they are not required to use any pain relief during or after these surgical procedures.<sup>111</sup>

De-toeing is carried out by using a hot blade or hot wire. Besides the distress caused by handling and the acute pain of the procedure itself, de-toeing may also have chronic effects as neuromas (a growth or tumor of nerve tissue) can form, which may affect birds’ perching behavior. Similarly, comb dubbing (removal of the comb) may cause distress from handling and acute pain from the cutting.<sup>112</sup>

EFSA concludes that *“sometimes mutilations have become routine for traditional reasons and may no longer be required.”* They recommend that no mutilation with an effect on welfare as severe as those resulting from cutting off toes or dubbing (removing) the comb should be carried out, unless justified by evidence of a substantial and unavoidable level of poor welfare in the birds themselves and other birds.<sup>113</sup> This level is not defined by ESFA.

## ENVIRONMENTAL ENRICHMENT

Environmental enrichment, a term that includes perches, raised platforms, pecking objects, bales of straw and wood shavings, are beneficial to chickens and can lead to reduced aggression and improved leg health.<sup>114</sup> Industrial facilities lack such environmental enrichment: typically, broilers are kept in windowless long houses containing litter, feed and water. The environment is otherwise barren.

## THE NEED FOR AN ALTERNATIVE

On animal welfare grounds alone, there is a pressing need to address the way in which chickens are reared for their meat. The majority of broiler chickens are raised in factory farms, which leads to a multitude of serious welfare problems, as detailed in



this chapter. The use of fast growing breeds, where chickens grow unnaturally large chests, is arguably the most urgent animal welfare concern. Alternative systems should be supported where chickens are of a slower growing breed and are given access to pasture and environmental enrichment so that they are able to perform natural behaviors, such as wing flapping, dust bathing, preening and pecking, with ease,.

Certifications such as Animal Welfare Approved and the 5-Step Animal Welfare Rating are leading the way to a more humane system. They use slow growing breeds (except for the lower steps of the 5-Step Animal Welfare Rating) and chickens' welfare is taken more fully into account. In addition, higher welfare indoor systems, equivalent to the Freedom Food certification in the UK, with slower growing intermediate breeds, lower stocking densities and environmental enrichment,<sup>115</sup> could be developed as a transitional model. These certifications also require stunning as a humane slaughter method.



Chicken meat sales now rival those of beef.<sup>116</sup> As the public appetite for poultry has risen, the method of producing birds has undergone substantial change. The numbers tell the story: according to a PEW Report, the number of chickens produced annually in the United States has increased by more than 1,400 percent since 1950 while the number of farms producing those birds has dropped by 98 percent.<sup>117</sup> In short, more birds are raised on fewer farms. Those individual farms, in turn, have grown so large that they can be described as factories. A typical facility producing broilers yields more than 600,000 birds per year.<sup>118</sup>

Georgia lies at the forefront of this trend. Now the top producer of broilers in the United States, Georgia produced almost 1.4 billion broilers in 2007, with sales totaling \$3.14 billion, according to USDA.<sup>119</sup> As production has soared, Georgia's poultry farms have diminished in number and increased in size. Between 2002 and 2007, the number of broiler farms in Georgia decreased by 10 percent while the number of broilers sold increased by a similar margin.<sup>120</sup> In 2007, Georgia's output of nearly 1.4 billion came from 2,170 farms.<sup>121</sup> This works out at an average of more than 640,000 birds per farm per year.

The industrialization of Georgia's poultry farms has come at a cost not reflected in

the price consumers pay. These chicken factories generate enormous volumes of waste, principally in the form of poultry litter – a mixture of manure and bedding that accumulates in the broiler houses during each production cycle. Those wastes must be disposed of, and the favored method is to apply it as a fertilizer to open fields and croplands, a process known as “land application.” But the typical facility, dominated by multiple large “grow houses,” lacks sufficient open land to accommodate the waste, leading to its over-application. Pollution problems occur when these excess nutrients wash into nearby streams, rivers and lakes or leach into groundwater.<sup>122</sup> Harmful pollutants can also be discharged into the air and water through the large ventilation fans affixed to broiler houses.<sup>123</sup>

Although industrial poultry operations can pollute like factories, regulatory oversight and enforcement in Georgia has been minimal and is likely to become more so due to a recent unfavorable court decision. Despite increasing recognition that massive poultry operations pose significant threats to water quality, it is looking doubtful that there will be adequate regulation and enforcement in the near future.

In the meantime, a promising alternative to the factory farm model is taking root,

but faces practical, legal and regulatory hurdles. Pasture-raised poultry has become increasingly available in response to rising consumer demand. At farmers' markets, restaurants and now even large grocery outlets, consumers can more than ever before "vote with their fork" for sustainably raised poultry, i.e., chickens raised in smaller numbers and allowed to roam freely on pasture. Georgia farmers are stepping up to meet the demand, but they lack convenient processing options. The nearest independent processing facilities are mostly located out-of-state, requiring lengthy trips that increase costs and place needless stress on their birds. If pastured growers want to process on-farm, they are often too small to warrant a grant of inspection from the United States Department of Agriculture (USDA), making access to an independent USDA-inspected facility critical.

For pastured poultry to continue to thrive in Georgia, the regulatory landscape must change. It must become tougher on the competition, forcing factory farms to internalize the pollution costs they impose on society at large, while becoming more responsive to the many aspiring farmers trying to provide an alternative that consumers want.

## LEGAL LAWLESSNESS: THE PROBLEMS OF INDUSTRIAL POULTRY



Collectively, Georgia's industrial chicken farms generate approximately 2 million tons of poultry litter annually, approximately 20 percent of the US total.

Georgia's industrial poultry operations produce enormous volumes of waste. Collectively, they generate approximately 2 million tons of poultry litter annually, approximately 20 percent of the US total.<sup>124</sup>

Researchers in the 1990s confirmed excessive pollutant levels in Georgia watersheds dominated by intensive poultry production, waters like the West Fork Little River in the Upper Chattahoochee River watershed.<sup>125</sup> The West Fork Little River flows through Hall County, the self-designated "Poultry Capital of the World." Likewise, high storm-generated phosphorus levels have been found in the upper Etowah River basin, another watershed surrounded by large-scale poultry production.<sup>126</sup> In these

northern areas of the state, where most poultry production is occurring, the sheer volume of waste exceeds the amounts needed for crop growth.<sup>127</sup> What plants fail to take up, the rains wash into nearby streams, rivers and lakes.

Large livestock operations posing water quality problems is not a new concept. The US Environmental Protection Agency (EPA) has long recognized that agricultural activities, including animal feeding operations, are among the top sources of water quality impairment in rivers and streams nationwide.<sup>128</sup> The federal Clean Water Act expressly recognizes that factory farms can be pollution sources negatively affecting the physical, chemical and biological integrity of the nation's waters. Animal operations over a certain size, which the Act defines as "concentrated animal feeding operations," or "CAFOs," are required to obtain a discharge permit and to operate within the terms and limitations of that permit.<sup>129</sup> The permits impose a requirement to develop and implement a "nutrient management plan," a plan for storing, handling and disposing of poultry manure that ensures it does not become a water quality problem.

Georgia is one of 46 states that have been authorized by EPA to administer their own water quality permitting programs, subject

to EPA oversight.<sup>130</sup> The Environmental Protection Division (EPD) of the Georgia Department of Natural Resources is responsible for issuing permits to factory farms within the State. EPD may also adopt regulations that equal or exceed federal requirements. EPD considers nutrient management plans as "*critical to reducing threats to water quality and public health*" posed by factory farms.<sup>131</sup> The agency expects such plans "*to address activities related to compliance with effluent limitations and other permit requirements, including manure handling and storage, land application of manure and wastewater, site management, recordkeeping and management of other utilization options.*"<sup>132</sup> Oversight and enforcement of appropriately stringent nutrient management plans is perhaps the *only* means of ensuring that industrial poultry operations do not cause water quality problems on an individual or cumulative basis.

In practice, EPD has not been providing adequate oversight and enforcement. On October 1, 2010, the EPA's Office of Inspector General (OIG) an entity charged with investigating claims of fraud, waste or abuse in programs overseen by EPA, received an anonymous complaint.<sup>133</sup> The charge: Georgia's CAFO program was deficient in numerous areas and EPA was failing to call EPD to account for these



lapses.<sup>134</sup> A subsequent investigation revealed that Georgia CAFOs were operating without water discharge permits or nutrient management plans, that inspection reports were missing, and that state regulators were not “*assessing compliance with permit conditions*” according to the OIG report.<sup>135</sup> Where inspection records were available, and included both land application records and nutrient management plans, the OIG documented several instances where poultry operations applied manure in excess of their nutrient plan allowances.<sup>136</sup> “*As a result of inadequate oversight and reporting,*” the report concluded, “*Georgia’s waters are vulnerable to discharges of animal waste from CAFOs, which are associated with a range of human health and ecological impacts, and contribute to the degradation of the nation’s surface waters.*”<sup>137</sup>

According to the Atlanta Journal Constitution, in response to the report both EPD and EPA Region 4 (the region with jurisdiction over Georgia) have promised efforts can be made to do better.<sup>138</sup> However, there are both practical and legal obstacles to improvement. On the practical side, EPD has recently suffered severe budget cuts<sup>139</sup> and may be unable to increase oversight. The agency already contracts with Georgia Department of Agriculture (GDA) officials to carry out most of its CAFO oversight responsibilities.<sup>140</sup> This arrangement, which EPD has cited as

a cost-saving measure,<sup>141</sup> was a major factor in the deficiencies found by the report. GDA officials have admitted they were not properly vetting nutrient management plans due to “*poor communication*” with EPD.<sup>142</sup> Perhaps more importantly, GDA lacks enforcement authority, which remains solely with EPD.<sup>143</sup> EPD has estimated that it would need to hire five additional employees to conduct its own inspections.<sup>144</sup> It is not clear whether the funding for those positions will be forthcoming.

The legal obstacle is potentially much more significant. As a result of a ruling last year by a federal appeals court, many CAFOs (and in particular, large poultry operations) may no longer be required to get a water discharge permit at all. With no obligation to get a permit, there will be no requirement to develop and implement a waste management plan.

This ruling undercut revisions to the federal regulations governing CAFOs made in 2008. The revisions required CAFOs to obtain a water discharge permit not only if they actually discharged pollutants to navigable waters, but also if they *proposed* to discharge pollutants.<sup>145</sup> In explaining the latter term, EPA indicated that a CAFO proposes to discharge if it is designed, constructed, operated and maintained in a manner such that the facility *will* discharge.<sup>146</sup>

The revisions took aim at the reality of CAFOs. Many CAFO operators will claim they have no intention to *actually* discharge their wastes into nearby waters. Yet when legal requirements are not followed, they do. The plan may be to store liquid waste in an on-site lagoon, but if the lagoon overflows due to mismanagement, the result can be a water quality problem of massive proportions. According to the New York Times, this is precisely what happened in June 1995, when a waste storage lagoon at an industrial hog operation in North Carolina ruptured, spilling more than 25 million gallons of liquid hog manure into the New River and killing thousands of fish.<sup>147</sup> In the poultry context, where manure is typically stored in dry form and applied later, the facility operator could similarly disavow any intention to *actually* discharge. The reality is that the mismanagement of large volumes of poultry waste can and frequently does negatively impact water quality.

The United States Court of Appeals for the 5th Circuit invalidated the “propose to discharge” portions of the new rules. In the court’s view, EPA (and by extension, state agencies like EPD) can only regulate CAFOs that are actually discharging.<sup>148</sup> Thus, even if a CAFO is designed, constructed, operated and maintained in a manner such that the facility *will* discharge pollutants into nearby waters, this is insufficient to require the

facility to obtain a permit and meet legal requirements designed to prevent such discharges from occurring. The 5<sup>th</sup> Circuit decision has been criticized on numerous grounds, including that it ignores the Clean Water Act’s “*fundamentally precautionary approach, which has long been recognized by the courts ... in favor of an approach that waits for the harm to occur before action is taken.*”<sup>149</sup> According to the Atlanta Journal Constitution, the EPD has said that the ruling renders much of the OIG report “obsolete,” because many of the inadequately overseen facilities will no longer require permits.<sup>150</sup>

EPD was already in the process of rewriting state CAFO regulations when the 5<sup>th</sup> Circuit’s ruling was handed down. Among EPD’s proposed revisions was one that would wholly exempt all poultry operations using a dry manure handling system from permitting and recordkeeping requirements. The 5<sup>th</sup> Circuit ruling may give EPD the legal cover it needs to finalize such an exemption. But EPD is free to adopt regulations that exceed federal regulations adopted under the Clean Water Act. There are many state waters that lie outside the Clean Water Act’s jurisdiction, and for those waters, EPD’s promulgation and enforcement of state regulations is the only safeguard.

A state law approach may well be warranted. It is not clear, for example, whether the



Clean Water Act covers a poultry facility's transfer of waste to a third party. It has been suggested that poultry manure generated in large volumes in the northern parts of the state could be sold as valuable fertilizer to large crop producers in south Georgia. Such large-scale waste transfers could have enormous water quality implications if improperly handled yet lie wholly outside of the Clean Water Act's permitting program.

EPD needs to ensure that wherever the massive waste volumes generated by Georgia's poultry industry go, and wherever they are applied, they do not cause water quality problems. In its *Big Chicken* report, the PEW Environment Group has called for EPA and states to develop a permit program for the management of manure transported off of CAFO sites.<sup>151</sup>



EPD needs to ensure that wherever the massive waste volumes generated by Georgia's poultry industry go, and wherever they are applied, they do not cause water quality problems.

## TRADING WATER FOR AIR POLLUTION

BY COLLEEN KIERNAN,  
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In recent years proposals to convert poultry litter to “biomass” energy have popped up in Georgia and around the US. For example, Earth Resources, Inc., was detailed in the business press for their proposal to build a 21 MW poultry litter energy facility near Carnesville, Georgia in Franklin County in 2006. Although the company reportedly received a \$28.9 million grant from the US Department of Agriculture to develop the plant, it was never economically viable and Earth Resources sold the project to Green Power Partners LLC, who re-applied for air pollution permits in 2008.<sup>ii</sup> If built, this facility would emit many of the same pollutants as coal-fired power plants, including nitrogen oxide, sulfur dioxide, volatile organic compounds (VOCs) and hazardous air pollutants (HAPs).<sup>iii</sup> While converting poultry litter to biomass would reduce the volume of litter needing to be disposed of through land application, it trades water pollution problems for air pollution problems.

## A DIFFERENT APPROACH: REMOVING BARRIERS TO PASTURED POULTRY

Consumers' growing awareness of the variety of problems associated with factory farms has helped spur demand for poultry produced in the traditional manner, on pasture. Small farmers are stepping up to meet this demand.

Unfortunately, the burgeoning market is being hampered by a critical lack of infrastructure. The demise of the independent slaughterhouse is yet another negative consequence of vertical integration in the poultry.<sup>152</sup> According to the New York Times, the number of independent slaughterhouses nationwide has declined over the last 20 years while over the last 5 years the number of small farmers has increased.<sup>153</sup>

In Georgia this means that independent growers must often transport their birds for hundreds of miles to independent facilities in North Carolina, South Carolina and Kentucky. As a result, many farmers have expressed interest in on-farm processing. Unfortunately, on-farm processing is currently a complicated matter due to legal issues surrounding inspection. A confusing intersection of federal and state laws pertaining to poultry processing and inspection has made it difficult, though not impossible, for Georgia's independent farmers to legally process their chickens on-farm. Off farm processing

options are limited as well: Georgia currently has only one independent slaughtering facility for pasture-raised poultry.

Yet there are encouraging signs on the horizon. In cooperation with officials at the Georgia Department of Agriculture ("GDA"), Georgia Organics is advocating for a framework allowing on-farm processing, and direct-to-consumer sales, in a manner that is economical for farmers while ensuring food safety. At the same time, Georgia Organics is spearheading an effort to study the feasibility of mobile processing units and a potential fixed-site facility that would provide independent growers with a legal and viable processing option. Developing processing solutions would readily deliver more pasture-raised poultry to market.

Georgia's multi-billion dollar poultry industry relies on massive "farms" and processing facilities. It succeeds in producing billions of pounds of cheap protein but only by having negative impacts on the environment, among other factors. Unfortunately, current laws protect and perpetuate that system while making it hard for a sustainable alternative, such as pastured poultry, to gain a market foothold despite changing consumer preferences. But with the help of conscientious consumers, the legal landscape will evolve, giving pastured poultry the market share it deserves.



# ENVIRONMENTAL EFFECTS OF POULTRY FACTORY FARMING IN GEORGIA

## POULTRY CAFOS AND THE ENVIRONMENT

There is substantial evidence that the high density of poultry CAFOs in Northern Georgia may be having major impacts on the environment. Large poultry operations have raised concerns over the quality of surrounding water and air, as well as the excessive usage of limited natural resources.

## WATER QUALITY IN “THE BROILER BELT”

Food-animal operations in the United States produce 133 million tons of manure per year.<sup>154</sup> In poultry farming, litter is applied to the land as a source of nutrients. The application of litter to fields was once a sustainable and acceptable practice. However, the drastic increase in the number of poultry raised for human consumption has produced far more litter than the land can support, potentially resulting in discharges of excessive nutrients, veterinary pharmaceuticals, pathogens, heavy metals and metalloids into the ground and surface waters.<sup>155</sup> Treatment of this animal waste prior to agricultural application is currently not required.

## EXCESSIVE NUTRIENT APPLICATION



The lakes and rivers of Northern Georgia provide millions with drinking water, recreation, and aesthetic benefits, all of which can be negatively affected by application of chicken manure.

Chicken manure contains phosphorus and nitrogen, making it an ideal source of nutrients for agriculture when applied judiciously. However, the over application of nitrogen and phosphorus can overload the soil and cause the excess nutrients to run off into receiving surface waters, supporting algal blooms and cyanobacterial growth.<sup>156</sup> Rainwater also infiltrates the soil zone and carries some of the excess nutrients down into shallow aquifers. This not only contaminates the drinking water supply for local residents, but the groundwater and nutrients eventually discharge into nearby lakes and streams, thereby contributing to algal blooms and cyanobacterial growth.

The flux of phosphorus and nitrogen imported into rivers and streams support eutrophication (or the increased plant biomass in rivers, lakes, and streams) and the accompanying increase in algal productivity, a phenomenon known as algal blooms.<sup>157</sup>(photo) Algal blooms can produce an environment that is devoid of dissolved oxygen. This lack of oxygen can change the dynamics of animal species, often resulting in major kills of freshwater fish, and thereby reducing biodiversity.<sup>158</sup>

Cyanobacteria, also known as blue-green algae, flourish in these oxygen-starved conditions. These organisms can produce toxins (cyanotoxins) that are known neurotoxins and hepatotoxins (liver toxins).<sup>159</sup> Currently, there are no drinking water standards for cyanobacteria in the United States.

The lakes and rivers of Northern Georgia provide millions with drinking water, recreation, and aesthetic benefits, all of which can be negatively affected by the process of eutrophication. The consequences of phosphorus and nitrogen runoff from over-applied chicken manure reaching our rivers and lakes are costly. Recreational use, lake-front property value, overall water quality and clarity, and fish biodiversity all decline with eutrophication and algal blooms.<sup>160</sup>

## PHARMACEUTICALS/ANTIBIOTICS

Pharmaceutical drugs are often added to chicken feed to promote animal growth and prevent or treat infection. Some of these drugs have harmful parent compounds or degraded components that pose additional risks to humans and the environment. These components are often found in chicken manure, and may leach into rivers, streams, and groundwater.

Arsenic, a recognized human carcinogen by the Environmental Protection Agency and the International Agency for Research on Cancer, can be found in chicken manure. The United States Geological Survey has calculated that between 250,000 and 350,000 kg of arsenic is applied annually to the land.<sup>161</sup> Elevated soil arsenic levels have been reported in a number of fields where poultry waste was applied; arsenic in soil is readily leachable and may migrate into the water supply. Exposure to arsenic has been associated with an increased risk of a number of human health effects, including heart disease, diabetes, neurologic effects, and birth defects.<sup>162</sup>

Due to the lack of reliable statistics, past estimates of the amount of all antibiotics used on farm animals have varied between 13% and 70%.<sup>163</sup> Calculations from John Hopkins University using recent figures



released by the FDA suggest that the figure is almost 80%.<sup>164</sup>

While these additives may allow a larger yield of chicken meat and a decrease in the spread of infection, microbes often become resistant to these antibiotics. In a recent study of ten rivers near CAFOs, antibiotic-resistant fecal bacteria were found in every water sample, with 41.6% of the bacteria displaying multi-drug resistance.<sup>165</sup> While much is still unknown about long-term human effects of exposure to low levels of antibiotics, they are continuously used in poultry farming.

### MANURE RUNOFF AND PATHOGENS

The close proximity of broiler chickens in CAFOs increases the possibility of pathogen transmission from chicken to chicken. These pathogens can then be transmitted through the air or directly from the chickens to humans, and there are concerns that they may be transmitted through surface and ground waters after contamination from chicken manure.<sup>166</sup>

Poultry are capable of harboring a number of different pathogens; viruses, bacteria, and fungi have all been found in chicken manure. Studies stating exact water levels of the most common poultry bacteria - certain strains of *Listeria*, *Salmonella*,

and *Campylobacter*, (all of which could be antibiotic resistant) - are limited.<sup>167</sup> The fungi *Coccidioides immitus* and *Histoplasma capsulatum* are also found in rivers and streams near CAFOs and have been associated with human outbreaks traced to poultry. Pathogens can also be transmitted through water via contamination from improperly disposed animal carcasses.<sup>168</sup> Dead and decomposing chickens host many pathogens that are harmful to human health.

### POULTRY FARMING AND THE EFFECTS ON AIR QUALITY

Many toxic gases and particles are emitted from poultry factory farms into the environment. In a number of studies, levels of ammonia, hydrogen sulfide, carbon dioxide, particulate matter, volatile organic compounds, and endotoxins have all been elevated near CAFOs; many of these pollutants are associated with pulmonary morbidity. Nearby residents often complain of a characteristic, unpleasant odor emitted from factory farms, which is a result of the complex mixture of air pollutants. Very little information exists regarding lung function among the population living near poultry CAFOs. One study found that people living within a 500 meter radius of a CAFO experienced significantly more self-reported wheezing and had decreased forced expiratory volume in one second (FEV1), an indicator of lung inflammation.<sup>169</sup>

## ODOR

Malodor is a major concern of residents living in the vicinity of poultry CAFOs. Quality of life issues arise with these odors, including changes in mood associated with the inability to cope with perceived odors.<sup>170</sup> These mental health effects are most likely stress-driven, but the exact mechanism needs further investigation.

## ENDOTOXINS

Endotoxins are causal toxic agents comprised of components of the cell walls of gram-negative bacteria.<sup>171</sup> Endotoxins are ubiquitous, but levels are often elevated near CAFOs. Inhalation exposure to endotoxins has been associated with a wide range of adverse respiratory health effects, largely due to their strong inflammatory properties.

Several studies have shown endotoxin levels averaging between a few hundred up to 15,000 endotoxin units per cubic meter of air in poorly ventilated CAFOs.<sup>172</sup> Exposures in this range have been associated with reduced lung function due to inflammation and increased systemic symptoms. There is also consistent evidence that endotoxins are a cause of asthma.<sup>173</sup>

## CHEMICAL POLLUTANTS

Levels of chemical air pollutants including ammonia, hydrogen sulfide, carbon dioxide, particulate matter, and volatile organic compounds, have been elevated above recommended levels near some CAFOs. The EPA has identified ammonia and particulate matter as the most hazardous air pollutants emitted from poultry CAFOs.<sup>174</sup>

Ammonia can be derived from poultry waste and fertilizers used on animal feed crops. Ammonia, a nitrogen-based chemical, in surface water can result in fish kills and reduced biodiversity.<sup>175</sup>

Particulate matter (PM) is a group of pollutants characterized by small solid and/or liquid aerosols suspended in the air. PM emissions from poultry CAFOs are generally composed of feed materials, dead skin and feathers, dried feces, and various microorganisms.<sup>176</sup> PM with an aerodynamic diameter less than 100 nanometers (commonly referred to as ultrafines) possess the unique ability to diffuse into the blood stream from the alveoli upon inhalation. According to the EPA, PM can adversely affect a multitude of body systems, including the respiratory and cardiovascular.<sup>177</sup>

## CONTRIBUTION TO GLOBAL CLIMATE CHANGE

Since the 1970s, the global rate of temperature increase has nearly tripled. This shift in climate may eventually lead to what the Intergovernmental Panel on Climate Change (IPCC) calls abrupt and irreversible effects.<sup>178</sup> Three main greenhouse gases (GHGs) that contribute to climate change are carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), and nitrous oxide (N<sub>2</sub>O).<sup>179</sup> All three GHGs are emitted by poultry CAFOs. The Food and Agriculture Organization of the United Nations estimates that animal agriculture is responsible for nearly 18% of anthropogenic (human-induced) GHG emissions, ranking the animal agriculture sector above the transportation sector in excess GHG emissions.<sup>180</sup>

The main source of nitrous oxide emissions from the poultry farming industry is nitrogen-based fertilizers used to grow chicken feed.<sup>181</sup> N<sub>2</sub>O may also be emitted from animal manure applied to crops. Animal manure heaps also favor the production of methane. In fact, approximately 0.26 Kg of methane per year per chicken is produced from manure.<sup>182</sup>

Carbon dioxide is produced via a number of pathways in poultry farming and accounts for nearly 9% of the total global

CO<sub>2</sub> emissions.<sup>183</sup> In the transportation of chicken meat and feed alone, approximately 0.8 million metric tons of CO<sub>2</sub> are emitted.<sup>184</sup> The production of poultry meat also requires fossil fuel burning, which emits large amounts of carbon dioxide.

Large-scale poultry farms have implemented a number of practices that adversely affect the environment. While money is saved and product output is increased, the quality of our air, water, and land is being compromised.



# THE IMPACT ON HUMAN HEALTH

Poultry factory farms rely on pharmaceutical drugs to keep chickens growing rapidly and prevent disease. The impact on human health is detailed in this chapter. Arsenic-containing drugs are used to control disease and promote growth, but the degraded components can pose risks to humans. Antibiotics are used to control disease and promote growth, but the misuse and overuse of antibiotics can pose a risk to humans by rendering antibiotics less effective through antibiotic resistance. Other health impacts detailed below include airborne illnesses arising from odor and gases emitted from farms, and foodborne illnesses arising from eating infected meat.

## ROXARSONE AND OTHER ARSENICAL DRUGS

According to the US Food and Drug Administration (FDA), arsenic based drugs are approved in poultry for growth promotion, feed efficiency and improved pigmentation. They are also approved in combination with other drugs to prevent coccidiosis (a parasitic disease of the intestinal tract of animals).<sup>185</sup> Currently, the FDA allows several organoarsenical feed additives for poultry. Two main organoarsenical additives have been used to promote growth, Roxarsone (3-nitro-4-hydroxyphenylarsonic acid) and arsanilic acid (2-aminobenzenearsonic acid). Only

Roxarsone, however, is permitted for disease prevention as well for growth promotion.<sup>186</sup> Importantly, while the industry recently voluntarily halted use of Roxarsone, arsenic-based drug use for chickens is not banned in the United States and may continue. Arsenic-based drug use for chickens is banned for human health concerns in the 27 countries of the European Union.<sup>187</sup>

According to one study, in 2000 about 74 percent of broiler chickens produced in the United States were fed this drug. That amounts to about 5.8 billion chickens being fed Roxarsone in the year 2000.<sup>188</sup>

According to an industry estimate from 2010, quoted by Dr. Keeve Nachman of John Hopkins University, prior to Roxarsone's removal from the market, 88 percent of domestically produced broiler chickens were being fed Roxarsone.<sup>189</sup> According to Dr Nachman, the manufacturer of Roxarsone estimates that each broiler chicken "*excretes 150mg of the drug over its 42-day lifetime.*" The amount of Roxarsone released into the environment can be estimated if we take the 88 percent and multiply it by the amount of Roxarsone given to each chicken:  $1,232,000,000 \times 150 \text{ mg Roxarsone/broiler} = 185 \text{ metric tons of Roxarsone released into the environment in 2007.}$



Arsenic can be found in an organic and inorganic chemical form. The chemical form of arsenic determines its ability to cause health problems. Roxarsone contains the organic form of arsenic, which does not cause health problems, but it is quickly converted into the harmful inorganic form both in the intestinal tract of chickens and in poultry waste.<sup>190</sup>

An additional issue is the reuse and recycling of chicken litter. In most cases, waste is managed by applying it to agricultural land as fertilizers.<sup>191</sup> This is problematic because arsenic in poultry litter has been found to be highly mobile when it comes in contact with water and the leach rate from the amended soil is slow enough that it accumulates in the soil for at least a 2-year application cycle. Roxarsone is also degraded physically and chemically into arsenite (AsIII) and arsenate (AsV) in both litter and soil. The finding that Roxarsone degrades into arsenate is especially worrying, because arsenate in drinking water has been found to increase the risk of cancer.<sup>192</sup>

The high concentration of factory farms in Georgia has potentially serious implications for the human health risks from arsenic. In addition to an increased risk of cancer, inorganic arsenic has been linked to cardiovascular disease, diabetes,

neurological deficits, spontaneous abortion, skin effects, and depression. Evidence is also surfacing that inorganic arsenic may act as an endocrine disruptor.<sup>193</sup>

Despite these concerns, there is little regulation of the application of arsenic. The USDA and FDA have conducted limited monitoring and recording. Tolerance levels for arsenic were set by the FDA more than 50 years ago. Although our understanding of the toxicity of arsenical compounds has substantially increased since then, there has been no change to the FDA established tolerance levels.<sup>194</sup>

Until very recently, the poultry industry argued that it must use Roxarsone as a growth promoter and antimicrobial, despite the lack of definitive evidence of its benefits. Then, however, an industry study found that poultry feed additives resulted in a net loss of profit.<sup>195</sup> As a result, two of America's biggest poultry producers, Perdue Farms, Inc. and Foster Farms, halted all use of Roxarsone as a feed additive.<sup>196</sup> Then, in July 2011, Pfizer voluntarily removed arsenic from the market. FDA announced that AlphaPharma, a subsidiary of Pfizer Inc., would voluntarily suspend sale of the animal drug 3-Nitro® (Roxarsone) in response to an FDA study of 100 broiler chickens that detected inorganic arsenic, a known carcinogen, at higher levels in the livers of chickens treated



with the drug 3-Nitro® (Roxarsone) than in untreated chickens.<sup>197</sup> The study specifically looked at chicken livers, as opposed to more commonly eaten parts, such as the breast.

The Center for a Livable Future commented on this removal as follows: “For now, consumers should consider this removal of roxarsone from animal feed as a major victory for public health—what remains to be seen is whether or not the FDA moves to eventually ban roxarsone and other arsenical-based veterinary drugs from the market and how long Pfizer’s voluntary suspension of roxarsone is maintained.”<sup>198</sup>

## AIRBORNE ILLNESSES

In addition to the human health risks associated with ingesting arsenic from feed additives, there are many different bacteria, molds, gases, and vapors that are commonly found in CAFOs. Many human health implications are linked to these common byproducts of poultry factory farming.<sup>199, 200</sup> Gases and vapors emitted into the environment by CAFOs can be found in the work and general environment of such farming operations. According to Heederik, many studies have identified elevated levels of ammonia (NH<sub>3</sub>), hydrogen sulfide (H<sub>2</sub>S), and carbon dioxide (CO<sub>2</sub>) within factory farms. Studies have found that the odor emissions have

a correlated effect on the quality of life of the exposed populations, be it workers or the surrounding community. A study in Germany found that residents living in close proximity to many CAFOs (within a 500 meter radius) were more prone to wheezing and decreased lung function. The findings suggested inflammation in the lungs of the study participants.<sup>201</sup>

## FOODBORNE ILLNESSES



The cramped and unhygienic conditions in CAFOs make conditions ripe for the spread of pathogens.

A recent study by the University of Florida’s Emerging Pathogens Institute revealed that food illnesses related to poultry consumption are costing the United States over \$2.4 billion annually in estimated health costs, ranking highest among all food items. When asked “*which pathogens in which foods cause the greatest impact on public health?*” poultry is the only named

meat that appears twice in the list of the top 10 food-pathogen items. This is due to contamination with campylobacter and salmonella. The study recommends that agencies convene a national cross-agency initiative in collaboration with the Center for Disease Control and Prevention to look across the entire food system and target opportunities for risk reduction.<sup>202</sup>

The slaughter of chickens happens at an extremely fast rate. On average, in one processing plant alone, 1 million chickens are slaughtered per 5-day work week – that’s 200,000 birds each day in just one facility.<sup>203</sup> As a result of this rapid pace, spillage of fecal matter onto meat is not uncommon. At slaughter, already resistant bacterial strains from the gut soil poultry carcasses. This is why many poultry meats are contaminated with multiple antibacterial resistant strains of E.Coli, resulting in exposure among humans who consume contaminated poultry meat. In addition to antibiotic use, over-crowding and poor sanitation of CAFOs exacerbate this problem.<sup>204</sup> E.Coli has been found to cost the health system 300 million dollars and to cause approximately 20 deaths annually.<sup>205</sup>

Campylobacter can be spread from bird to bird through consumption of a common water source or by coming into contact with contaminated feces. At slaughter, as with

E.Coli, the pathogen from the gut comes in contact with the broiler’s carcass. In tests carried out in 2005 through the FDA-NARMS retail food program, 47 percent of raw chicken breasts were found to be contaminated with campylobacter. A very small amount of this pathogen can cause illness in humans. Campylobacter causes diarrhea, arthritis, and nervous system issues.<sup>206</sup> The contamination of broiler chickens by campylobacter has cost the US health system \$1 billion annually and resulted in 55 deaths.<sup>207</sup>

According to a 2011 study published in the Journal of Infectious Diseases, “Salmonella and Listeria remain the leading causes of death in the United States due to bacterial pathogens transmitted commonly through food. Most such deaths occurred in persons [age] 65 years [and above]”.<sup>208</sup> This study, which analyzed FoodNet data from collaborative surveillance carried out by the CDC, USDA-Food Safety and Inspection Service (FSIS), FDA, and state health departments from 1996 to 2005, reported that although Salmonella and Campylobacter contributed to the most infections, and deaths due to Salmonella were 4 times the proportion of deaths due to Campylobacter. Based on FoodNet data, about 1.4 million foodborne salmonella infections, termed salmonellosis, occur annually, resulting in approximately



15,000 hospitalizations and around 500 deaths.<sup>209, 210</sup> Salmonellosis generally results in inflammation of the small intestine and the colon, headache, abdominal pain, diarrhea, nausea, fever, and some vomiting.<sup>211</sup> For some, the infection can escalate into more serious illnesses such as septic arthritis, cholecystitis, endocarditis, meningitis, and pneumonia.<sup>212</sup> These infections have been estimated to cost anywhere from \$0.5 to 2.3 billion annually.<sup>213</sup> The greatest proportion, about a fifth, of all Salmonella infections reported to the CDC are caused by Salmonella Enteritidis (SE), one of several stereotypes (or varieties) of bacterial pathogen Salmonella enterica.<sup>214</sup>

Consumption of undercooked egg is the main risk factor of salmonella outbreaks. However, sporadic SE infection, not outbreaks, make up most (60-80%) SE cases.<sup>215, 216</sup> Although state and city-based studies have concluded that egg consumption is still a key risk factor of sporadic infections, two recent multi-state epidemiologic studies published in 2004 and 2007 have identified a new significant risk factor – chicken meat consumption outside the home.<sup>217, 218</sup> After sampling processing plants from 2007 to 2008, the USDA-FSIS estimated that one in every 250 broiler chickens is contaminated by SE.<sup>219</sup> Food animals are a common

reservoir for Salmonella, which infects them once they ingest feed contaminated by the feces of another infected animal.<sup>220</sup> The cramped and unhygienic conditions in CAFOs make conditions ripe for the spread of this pathogen.

There is evidence that organically reared chicken not only has less prevalence of illness-causing bacteria, but also less antibiotic-resistant bacteria, than factory farmed chicken. A 2010 study by the University of Georgia compared three organic and four conventional broiler farms from the same company in North Carolina. The study found that *“the prevalence of fecal Salmonella was lower in certified-organic birds than in conventionally raised birds, and the prevalence of antimicrobial-resistant Salmonella was also higher in conventionally raised birds than in certified-organic birds.”*<sup>221</sup>

## ANTIBIOTIC RESISTANCE

According to the Center for a Livable Future at Johns Hopkins University: “Antibiotics, one of the world’s greatest medical discoveries, are slowly losing their effectiveness in fighting bacterial infections and the massive use of the drugs in food animals may be the biggest culprit. The growing threat of antibiotic resistance is largely due to the misuse and overuse of





A recent study found that when compared to conventional poultry farms, large-scale organic poultry farms had significantly lower levels of multidrug resistant *Enterococcus*.

antibiotics in both people and animals, which leads to an increase in ‘super-bacteria.’”<sup>222</sup>

There is growing concern that antibiotics are becoming less and less effective against antibiotic-resistant microbes as a result of the misuse and overuse of antibiotics in food animals and people. According to calculations done by John’s Hopkins Center for a Livable Future using data from a recent FDA study, 80% of all antibiotics are used on food animals.<sup>223</sup> According to a study by Tufts University, the misuse and overuse of antibiotics increases infections resistant to antibiotics and costs the US health care system over \$20 billion each year, according to extrapolations by Dr. Roberts<sup>224</sup> from Roberts et al.<sup>225</sup> In the year 2000, the US had nearly 900,000 cases of antibiotic-resistant infections. US households lost

approximately \$35 billion in 2000 to antibiotic-resistant infections.<sup>226</sup>

In reaction to this rising concern, Congresswoman Louise Slaughter, a Democrat from New York, introduced a bill called the Preservation of Antibiotics for Medical Treatment Act to ban the non-therapeutic use of antibiotics in farm animals. The bill has over a 100 co-sponsors and bipartisan support.<sup>227</sup>

A recent study found that when compared to conventional poultry farms, large-scale organic poultry farms (which are not allowed to use antibiotics to prevent disease in the animals) had significantly lower levels of multidrug resistant *Enterococcus*. Multidrug-resistant means resistant to three or more antimicrobial classes. The study found that “*forty-two percent of Enterococcus faecalis isolates from conventional poultry houses were multidrug resistant (compared with 10% of isolates from newly organic poultry houses); 84% of Enterococcus faecium isolates from conventional poultry houses were MDR, compared with 17% of isolates from newly organic poultry houses (p < 0.001).*”<sup>228</sup> “*This study provides the first on-farm US data describing the impacts of eliminating antibiotics from large-scale US poultry production on rates of antibiotic-resistant enterococci. The findings support*

*the hypothesis that removing antibiotic use from large-scale US poultry farms and transitioning to organic practices can result in immediate and statistically significant reductions in on-farm antibiotic resistance.”<sup>229</sup>*

In conclusion, while the use of drugs may serve to promote growth and prevent disease, there are significant human health concerns for this method of production. This method of production is further called into question by health impacts arising from airborne and foodborne illnesses.

## OVERCONSUMPTION

By Leah Garces,  
Compassion in World Farming

Another issue of major concern is that of overconsumption of meat and its resulting impacts on human health. According to epidemiologists, nutritional scientists typically recommend between 1.8 – 3.5 ounces of meat per day ( around 3 ounces is the size of a small hamburger patty). However, in high-income countries, the average meat intake is much greater at 7.0 -10.6 ounces per day. The US has the highest per-person daily intake.<sup>230</sup>

According to a study published in the scientific journal Public Health Nutrition, “the high level of meat and saturated fat consumption in the USA and other high income countries exceeds nutritional needs and contributes to high rates of chronic diseases such as cardiovascular disease, diabetes mellitus and some cancers.”<sup>231</sup>

In 2003, the leading cause of death in Georgia was heart disease; cancer was second, and diabetes was sixth. One of the main arguments for continued production of poultry via factory farming is that it is necessary to supply the high and growing demand for meat. However, this high demand for meat is having dire impacts on our population’s health.



# THE IMPACT ON WORKERS

## PROBLEMS OF SCALE



Growers are independently contracted by production companies to build poultry houses, raise the company-owned chickens, and maintain the houses based on contract specifications.

Today's vertically integrated broiler production chain relies on the labor of thousands of workers, whose jobs may be divided into three broad categories reflecting the stage in production and location of their work: growers, chicken catchers, and processing plant workers.

Growers are farmers who are independently contracted by integrators, or production companies, to build poultry houses, raise the integrator-owned hens, and maintain the hen houses based on contract specifications. They often hire crews to assist with these functions.<sup>232</sup>

Catchers are workers who capture and cage mature birds prior to their transportation to the processing plant, typically employed by crew chiefs closely following integrators' instructions <sup>233</sup>.

Processing plant workers hold highly specialized positions in the assembly line-style slaughtering, deboning, and packaging process. Processing plant workers include, among other categories, live-hangers, who remove the birds from cages after their arrival to the processing plant and hang the birds by their feet onto moving shackle lines,<sup>234</sup> "wing folders, [who] twist and tie chicken wings into position for cutting; wing cutters, who use saws or scissors to remove chicken wings from carcasses passing on cones"; deboners, who use knives and scissors to cut meat from carcasses; "and sanitation workers, who clean machines each night."<sup>235</sup>

About 47,000 Georgians are directly employed in the poultry industry.<sup>236</sup> According to United Food and Commercial Workers data, over half of poultry processing workers nationally are women, and at least half are Latino.<sup>237</sup> This pattern holds true in Georgia.<sup>238</sup>

According to human rights organizations, many of these workers, especially those employed at the lowest-paying positions, face serious hazards to their short- and long-term health and safety, including many that cause debilitating permanent injuries and musculoskeletal disorders. When a worker is injured, her employer often forces her out of the job either through

direct or constructive termination.<sup>239</sup> In Georgia, because of the state's lack of anti-retaliation protections, a worker who reports her work-related injury in order to seek workers' compensation benefits like medical treatment and partial pay for time when she is unable to work may lawfully be fired for filing or pursuing a workers' compensation claim.<sup>240,241</sup> Human Rights Watch found that "companies in the US meat and poultry industry avoid payouts through their workers' compensation programs by systematically failing to recognize and report claims, delaying claims, denying claims, and threatening and taking reprisals against workers who file claims for compensation for workplace injuries."<sup>242</sup> Corporations take advantage of these and other obstacles to workers' compensation benefits and medical insurance by exploiting labor and leaving injured and disabled workers responsible for health related costs, often for the rest of their lives. Obstacles to reporting and a climate of fear cause many injuries to go unreported, and therefore uncompensated and untreated.<sup>243,244</sup>

## CONTRACT GROWERS

According to the University of Georgia's Cooperative extension service, contract producers, or growers, raise 99% of all broilers in the United States.<sup>245</sup> The contract is a legally binding agreement

between the grower and the integrator that outlines expectations and requirements of the relationship on a per-flock basis.<sup>246</sup> Corporate integrators typically mandate most terms of the contract with little opportunity for input by the grower. Once the first flock is sold, growers are not guaranteed that future flocks will be provided or sold back to their original integrator.<sup>247</sup> Based on the contract, integrators provide growers with the main inputs, including the flock, feed, and medication, along with supervision.<sup>248</sup> In addition to poultry housing, growers are responsible for equipment, labor, utilities, litter disposal (125-150 tons per year), and dead animal disposal.<sup>249</sup> Integrators expect growers to finance technological upgrades to houses at any time the integrator sees them fit for optimizing production in order to remain competitive in the market.<sup>250</sup> Broiler houses are generally operated by family members, but large operations require hired labor.<sup>251,252</sup>

Participating in this business is expensive and presents many financial risks for growers, who may be in debt for 10 to 15 or more years for each house, which generally last 30 years and yield low positive cash flow during the time farmers are in debt.<sup>253</sup> Although growers invest anywhere from \$120,000 to \$130,000 per fully-equipped house, net returns per house range from \$3,000 to \$10,000 until their debt is paid





Most growers build 4 or more houses since returns are greater on multiple houses.

off.<sup>254</sup> Most growers build 4 or more houses since returns are greater on multiple houses. The average producer invests \$600,000 or more on poultry housing and equipment only.<sup>255</sup> Additionally, growers must consider how each flock they produce compares to other growers since growers are paid not only based on the weight of the birds they produce, but on how they rank among their peers on the integrator's ranking system, which groups them based on production cost per pound.<sup>256,257</sup>

Growers, especially those in debt, must deal with the impact of increasing costs of production on profitability over time stemming from increasing grower input costs (electricity, fuel, litter, etc.)<sup>258,259</sup> At the US Department of Justice (USDOJ)/USDA-hosted Poultry Workshop held in May of 2010 in Alabama, Shane Wooten, a grower, mentioned a 120% increase

in annual propane costs over 10 years, between the time he signed his contract in 1999 (\$42,000) and 2009 (\$92,000).<sup>260</sup> Growers who testified brought up a number of other grievances to federal officials, including Attorney General Eric Holder of USDOJ and Assistant Attorney General for Antitrust Christine Varney of USDOJ. Farmers are unable to make ends meet due to the growing gap between income and operational costs. USDA's Tom Vilsack, Secretary of Agriculture, one of the workshop panelists, observed that *"total farm income, [of] family farm income across the country, only 9% of it last year came from farming operations, which means that 91% had to come from some other place,"* which means that these people, in many cases, growers and/or their spouses are working off-farm to make ends meet. Mr. Wooten confirmed this statement saying that due to *"[the] discrepancy between income and increased expenses ... myself and a lot of the other growers... have had to go outside the farm to provide for our families."*<sup>261</sup>

Overall, growers have little negotiation power in the terms and conditions of the contract negotiations.<sup>262</sup> Secretary of Agriculture Vilsack recognized the trend of *"increasing controversies between poultry growers and processors, specifically relating to the length of contracts and contract terms."*<sup>263</sup>

# THE PACKERS AND STOCKYARD ACT OF 1921

By Priyanka Pathak

The Packers and Stockyards Act of 1921 (7 USC §§ 181-229b; P&S Act) was enacted following the release of the Report of the Federal Trade Commission on the meatpacking industry in 1919. Congress passed the Packers and Stockyards Act to ensure a fair market for poultry/livestock that is protected from monopolies and discriminatory practices. The P&S Act is administered by the Grain Inspection, Packers and Stockyards Administration (GIPSA) of the US Department of Agriculture (USDA).<sup>271</sup>

Many have raised concerns that the USDA and the Department of Justice (DOJ) have failed to enforce this legislation thereby preventing it from fulfilling its intended purpose. Currently the beef, pork, and poultry industries are dominated by 12 companies.

Because the DOJ has allowed such a high level of market consolidation, it has been criticized for failing “to limit the increase in concentration on the buying side of these markets which has contributed to the problem of anticompetitive conduct and exploitation.” Independent agricultural producers have argued that “reduced demand for cash-market animals results in thin markets that are more easily manipulated by small numbers of

PERCENT OF ANIMAL PRODUCTION AND PROCESSING INDUSTRIES OWNED BY THE TOP 4 FIRMS<sup>272</sup>

Industry	Top 4 Firms in Descending Order	Concentration Ratio Percent	Year
Beef Packers	Tyson, Cargill, Swift & Co., Friona Industries	83.5%	2005
Pork Packers	Smithfield Foods, Tyson Foods, Swift & Co., Cargill	66%	2007
Broiler Chickens	Pilgrim's Pride, Tyson, Perdue, Sanderson Farms	58.5%	2006

buyers.”<sup>273</sup> Others have raised the issue that integrators now have “increased incentive to opportunistically manipulate cash market prices to affect their overall cost of supply.”<sup>274</sup>

Discriminatory practices by integrators have been an issue in the poultry market

as integrators determine how much to pay growers, based on how they perform on a ranking system in which they are compared to other contracted growers.<sup>275</sup> Growers have criticized the ranking system as unfair as the integrators control most of the inputs, allowing them to exercise preferential or discriminatory treatment toward certain growers by giving them healthier chicks or better feed.<sup>276</sup>

Another troubling aspect is that integrators have been allowed to control the market by placing processing plants in specific areas and partaking in anti-competitive behavior. *“[Firms] tend to locate in a spatial way that leaves each with a region in which it is the only or one of very few processors. This means that the farmers who invest in poultry growing facilities often have only one buyer. Even where there are two or more processors, it appears that they often refuse to compete for each other’s producers. This kind of tacit producer allocation further reduces the ability of farmers to get the economic benefits that should come from their investments, skill, and industry.”*<sup>277</sup>

Often the contract agreement includes other terms that connect the base pay to acts that affect the grower’s cost. The duration of contracts also varies greatly, from one month to 15 years. All these issues make it difficult

for growers to assess the agreements they have made with integrators.

According to Food and Water Watch (FFW), the 2008 Farm Bill required the US Department of Agriculture to enforce the Packers and Stockyards Act by enacting new Fair Farm Rules, also known as the GIPSA rules (named for the branch of the USDA that would oversee the rules, the Grain Inspection, Packers and Stockyard Administration).

The new rules are meant to prevent meatpackers from giving “*undue preference*” to large producers, like factory farms, that put small independent producers at an economic disadvantage. With regard to poultry, these rules would prohibit retaliation against poultry growers who speak out about their concerns. The rules would also protect poultry growers who make expensive upgrades and investments and prevent companies from requiring growers to make expensive upgrades to their facilities if they are in working order. These improvements proposed in the 2008 Farm Bill have yet to be implemented.<sup>278, 279</sup>

Secretary Vilsack recognized that many present-day growers were frustrated by the fact that they could only access one integrator in their region since companies tend to dominate regions individually.<sup>264,265</sup> Additionally, growers complained unanimously that contract terms across integrators were virtually identical. Thus, even growers who had access to more than one integrator could expect little or no change by working with a different company.<sup>266</sup> In addition to anti-competitive behavior, growers reported that integrators often “dropped” (i.e., blacklisted) growers who did not upgrade their houses for growers who recently built new ones.<sup>267</sup>

The short-lived nature of the contracts and massive grower debt, combined with lack of grower input in contract negotiation, have led to an imbalanced, and at times abusive, grower-integrator relationship, according to the growers who testified at the Poultry Workshop. Several farmers testified that despite having no input on their contract terms, they felt pressured into signing the contracts out of fear that without signing, they would not be able to pay off their debt. Carole Morison, an award-winning grower whose contract was terminated after 23 years, stated that integrator personnel constantly threatened her with contract termination any time the company made demands or didn’t approve of her ideas

for operating her broiler houses.<sup>268</sup> She recalled, *“I can’t count the many, many times that I have heard in one shape or form of another that our contract was going to be terminated if we did such and such. That’s no way to communicate with people who are your business partner.”*<sup>269</sup> The University of Georgia’s Cooperative Extension Service contends that broiler growing is a relatively reliable source of income; however, they also admit that growers who manage to maintain their contractual relationship over time must be ready to accept lower wages and/or have their contracts cancelled during bad economic times.<sup>270</sup>

## PROCESSING PLANT WORKERS

Working conditions and central tasks at most meat processing plants involve many hazardous exposures and activities for workers. According to Fortune Magazine, *“[OSHA] statistics for 2000 reveal that one out of every seven poultry workers was injured on the job, more than double the average for all private industries. Poultry workers are also 14 times more likely to suffer debilitating injuries stemming from repetitive trauma.”*<sup>280</sup> The Bureau of Labor Statistics’ most recent report from 2010 listed poultry processing among the industries with the highest incidence rates of total nonfatal occupational illness cases. Animal slaughtering, excluding poultry,

ranked #2, and poultry processing ranked #5 in 2009 and 2010. Incidence rates of total nonfatal occupational illnesses among poultry processing workers showed a statistically significant increase between 2009 and 2010.<sup>281</sup> As a result, thousands of people working in some of the most dangerous jobs in the industry are at risk for injuries that are likely to be debilitating.

Given the scale, speed, and nature of the production process, working in a poultry processing plant is highly risky. Corporate poultry processing plants rapidly slaughter and process over 200,000 birds each day.<sup>282</sup> Such facilities operate using factory assembly lines, in which each station is staffed by a team of one to four persons, or occasionally a machine, tasked with completing the same operation on every bird that passes the station.

Line workers must keep up with the fast-moving animals on the conveyor belt while having to repeat the same finger, hand, wrist, arm, and shoulder motions required to saw, trim, or cut these pieces of meat as many as 20,000 to 30,000 times each day.<sup>283</sup> Various positions require similarly repetitive motions. For example, deboners generally work four at a station. Using knives, scissors or saws, they are “responsible for making sure that every chicken carcass that passes on the moving cones or shackles along the line receives

the same cut, whether it is to remove breast meat, legs, thighs, or other cuts of meat.” Another example is tender cutters, who must make slices out of meat chunks extracted from whole carcasses, tray load after tray load. There are many other workers required to cut specific pieces of meat from every bird that passes their station.<sup>284</sup>

Workers’ pace is determined by the conveyor belt speed, also referred to as the line speed. Line speed is directly correlated with company profit since the faster the speed, the more animals the plants process. However, the chances of worker injury increase with line speed, partly due to the knives and scissors dulling<sup>285</sup> without time for workers to pause and sharpen them again.<sup>286</sup> The likelihood of developing repetitive motion disorders also increase with faster line speeds.<sup>287,288</sup> If the line speed is too fast, workers at some plants may have access to an emergency stop button, but workers have also reported being fired for pressing it. Some also reported that companies do not heed to their requests of slowing down the line speed.<sup>289</sup>

Line speed varies broadly among processing plants, ranging from 28 to 120 birds per minute, depending on the section of the plant and additional factors. It is regulated by the USDA based on factors including the type of animal being processed, equipment



capacities and automation, plant layout and space, and the number of staff and inspectors working, and food safety.<sup>290,291</sup> According to Human Rights Watch, because OSHA has not promulgated line speed standards, the speed of the line can be increased without concern for worker safety,<sup>292</sup> suggesting that corporations may lawfully continue to increase line speeds without regard to injury rates and worker health. In practice, the only factor that is limiting line speed today is the USDA inspectors who observe the chickens at the time of slaughter only; later on in the process the plants use the maximum speed tolerated by the workers.<sup>293</sup>

Workers are constantly under pressure to work faster.<sup>294</sup> Indeed, the fear and prospect of retaliation pervades poultry processing plants.<sup>295</sup> Bathroom breaks are routinely denied,<sup>296</sup> and temporary or permanent transfers to lighter duty positions are nearly out of the question. Workers have given testimonials of having to urinate on plant floors after being denied such basic accommodations out of the fear of losing their job.<sup>297</sup> Such a relationship between workers and their superiors can create a disempowering culture in which asking for more dramatic improvements such as action against sexual harassment, decreasing the line speed to prevent injury, or taking time off to recover from injuries is out of the question.<sup>298</sup>

When surveyed about conditions, workers vividly describe the hand, wrist, arm, shoulder and back pain resulting from repeating the same motions so many times per day.<sup>299, 300</sup> While some plants attempt to rotate workers among different types of cutting stations during their shift to diversify the types of motions performed at work each day, this is an inadequate solution that still requires workers to make thousands of cuts every shift.<sup>301</sup>

The United States Occupational Safety & Health Administration (OSHA) has determined that the combination of the environment and worker tasks in poultry-processing plants involving repetition, use of force, stressful postures, cold temperatures, and vibrations can put workers at risk of an array of musculoskeletal disorders.<sup>302, 303</sup> The following chart categorizes many of the possible disorders and injuries that workers may develop.

Violations of even the few health and safety protections that exist for workers in processing plants are common. Over a 5 year period, OSHA offices in Georgia conducted 37 inspections of poultry slaughtering and processing plants, finding 185 violations of federal health and safety regulations,<sup>305</sup> including 136 violations designated as serious, 6 designated as willful, and 26 that were repeat violations.<sup>306</sup>



## POTENTIAL DISORDERS OF POULTRY PROCESSING WORKERS<sup>293</sup>

HEAD & ARM		
Carpal Tunnel Syndrome <sup>D,S</sup> Cubital Tunnel Syndrome <sup>D,S</sup> DeQuervain's Syndrome <sup>D,S</sup> Digital Neuritis <sup>D</sup> Finger Click <sup>D</sup> Ganglion Cyst <sup>D,S</sup> Guyon's Tunnel Syndrome <sup>D,S</sup> Lateral Epicondylitis <sup>D</sup>	Medial Epicondylitis <sup>D</sup> Pain <sup>D</sup> Pronator Syndrome <sup>D</sup> Radial Tunnel Syndrome <sup>D</sup> Sore Elbow <sup>D</sup> Sore Hand <sup>D</sup> Stenosing Tenosynovitis (Finger or Thumb) <sup>D,S</sup>	Sprain <sup>D</sup> Stuck Finger <sup>D,S</sup> Swollen Hand or Elbow <sup>D</sup> Tendonitis <sup>D</sup> Tenosynovitis <sup>D</sup> Tingling Fingers <sup>D</sup> Ulnar Nerve Entrapment <sup>D,S</sup>
SHOULDER, UPPER ARM, UPPER BACK, NECK, HEAD	LOWER BACK	FEET & LEGS
Bicipital Tendonitis <sup>D</sup> Bursitis <sup>D</sup> Cervical Strain <sup>D</sup> Neck Tension Syndrome <sup>D</sup> Pain <sup>D</sup> Rotator Cuff Injuries <sup>D*,S</sup> Sore Shoulder, Back, Neck <sup>D</sup> Strain <sup>D</sup> Sprain <sup>D</sup> Tendonitis <sup>D</sup> Thoracic Outlet Syndrome <sup>D,S</sup>	Back Strain <sup>D</sup> Herniated Disk <sup>D,S</sup> Ligament Strain <sup>D</sup> Lumbar Pain <sup>D</sup> Lumbar Strain <sup>D</sup> Muscle Strain <sup>D</sup> Tight Back <sup>D</sup>	Phlebitis <sup>D</sup> Plantar Fascists <sup>D*</sup> Sore Legs <sup>D</sup> Swollen Feet <sup>D</sup> Trochanteric Bursitis <sup>D</sup> Varicose Veins <sup>D,S</sup>

“D” indicates the potential to disable a worker; “D\*” indicates severe disability; “S” indicates need for surgery that may or may not result in improved condition.

One inspection of a Georgia poultry product wholesaler found 24 health and safety violations, 23 of which were classified as serious.<sup>307</sup> Seven inspections of Georgia poultry hatcheries found 9 violations, 6 of them serious.<sup>308</sup> Three inspections of other Georgia poultry and egg worksites yielded citations for 5 serious violations.<sup>309</sup> Many plants go uninspected and OSHA does not track total numbers of injuries to employees,

nor does it keep data regarding repetitive motion injuries. Nonetheless, the sheer number of health and safety violations for problems such as the failure to provide personal protective equipment reveals the scale and prevalence of the dangers to which workers are exposed.

These health risks are not without solution. In addition to slowing the line to a less

hazardous pace, specific ergonomic improvements have the potential to mitigate risks facing workers.<sup>310</sup> For example, OSHA's research has led to a series of ergonomic practices specifically recommended for poultry processing plants, including knives and other manual cutting tools curved to permit use with the wrist at a neutral, rather than strained, posture; sharper knives to reduce the force that workers must exert with each motion; adjustable platform and table heights to reduce the distances workers must stretch and strain to reach birds they are cutting; and back supports and seats for stationary workers.<sup>311</sup> While some plants have implemented some of these types of ergonomic improvements, many remain unheeded. For example, a large percentage of processing workers still report being required to cut using dull knives, which increases the pain and strain suffered with each cut.<sup>312</sup> OSHA has also recommended allowing more pauses for relief of exhausted muscles and staffing sufficient employees to permit periodic breaks in addition to scheduled breaks.<sup>313</sup> Many workers report that breaks are typically limited to rushed meal breaks only, and that there are few if any other opportunities to rest or stretch aching muscles.<sup>314</sup>

Disabilities can have a negative economic impact on food processing workers, whose

livelihood depends on their ability to perform physically challenging, low-wage manual labor. This largely uninsured workforce is also unlikely to be able to afford or have access to adequate medical care for work-related injuries and illnesses. Because of the failure of employers and government agencies to provide interpretation services, pressure to keep working in order to avoid losing badly needed wages, and exposure to employer retaliation in the form of firing or, worse, deportation, immigrant workers are less likely than non-immigrant workers to report injuries and illnesses.<sup>315</sup>

In May 2008, the median annual income of slaughterers and meat packers was \$23,000; the incomes ranged from \$17,130 to 30,740, with the middle 50% earning \$19,700-\$26,450.<sup>316</sup> Perhaps in part because only 16% of food processing plant workers have been able to join unions, food processing plant workers “rarely earned substantial benefits,” according to the Bureau of Labor Statistics.<sup>317</sup>

While health and safety problems are this chapter's principal focus, they are not the only area of employment rights frequently violated in poultry processing plants. Many poultry processing workers have also been subjected to unchecked sexual harassment by supervisors or coworkers,<sup>318</sup> including “unwanted touching, pressure to have sex,

or harassing comments,<sup>319</sup> as well as racial discrimination.<sup>320</sup> This harassment is difficult for workers to report, in part because of language barriers and the threat of retaliation.<sup>321</sup>

A common pay practice in the industry's processing plants involves denying workers pay for time spent putting on required protective gear in order to work on the line and for time spent removing this gear at the end of a shift. In January of 2001, the US Department of Labor released the results from the Wage and Hour Division (WHD)'s survey of 51 randomly selected US processing plants. The WHD found widespread violations of the Fair Labor Standards Act (FLSA). All of the plants had not paid workers for hours of work: workers were not being paid for the time they spent wearing and cleaning their protective equipment at the beginning and end of their shifts as well as during meal time.<sup>322</sup> The United States Supreme Court has held that workers must be compensated for this time, which is not the workers' own free time.<sup>323</sup> Many major poultry processing corporations have been sued by their employees for this type of wage violation. Recently, after losing its motion for partial summary judgment in federal court,<sup>324</sup> Tyson Foods settled a class action initiated in Georgia seeking workers' unpaid wages for time spent putting on and removing necessary equipment for a total of \$32 million dollars, to be distributed

to workers at eight Tyson poultry plants.<sup>325</sup> Additionally, the WHD found that 65% of the plants had misclassified exemptions – meaning that workers were not paid overtime wages that should have been due to them.<sup>326</sup> Thirty-five percent had made impermissible deductions from workers' payments.<sup>327</sup>

## LIVE-ANIMAL EXPOSED WORKERS

All categories of poultry workers who handle live birds, growers and catchers at poultry houses, as well as live hangers at processing plants, are at risk of developing health problems, especially lung-related illnesses. These workers are exposed to respiratory toxicants and toxins including poultry skin debris, aerosolized feed, organic dust particles, broken feather barbules, excreta, insect parts, ammonia, and aerosolized feed.<sup>328,329</sup> Such exposures have led to pulmonary disorders such as farmer's lung, hypersensitivity pneumonitis, air-conditioner lung, maple bark disease, and bird breeder's lung.<sup>330</sup> Researchers agree that more studies are needed and that regulations should be put in place to ensure the safety of poultry workers and communities near CAFOs and processing plants.

A recent study from Johns Hopkins University reported that due to live-animal contact, occupational exposure experienced by growers, catchers, and live-hangers to

antimicrobial resistant bacteria could expose the rest of the community to drug-resistant bacteria<sup>331</sup>. These bacteria may even reach workers who handle dead poultry. Studies from the Netherlands have shown that broiler chicken and turkey growers and slaughters have high-levels of antibiotic-resistant bacteria in their digestive tract and these levels correspond to anti-biotic resistance in birds.<sup>332,333</sup>

## CHICKEN CATCHERS

Chicken catchers are contracted by poultry companies at the time the birds are ready to be slaughtered. Their responsibility is to swiftly capture birds and load them into cages on trailers for transportation to slaughtering and processing plants. They are typically paid for a small portion of each truckload filled. These pay rates often add up to less than minimum wage, and often fail to include a time-and-a-half premium for overtime hours as is required for most other workers.

Tom Fritzsche, from the Southern Poverty Law Center (SPLC), described the catchers he recently interviewed. “One thing that is really noticeable about many chicken catchers is how their hands look. They are swollen to double the size of a normal hand and some workers even shrink back from shaking hands because it’s so painful.

There’s even a condition that people refer to as “claw hand” that some chicken catchers develop from gripping so many chickens so tightly over the years.”<sup>334</sup>

Because catchers are often divided into crews of only seven or eight workers, who have limited contact with the corporate integrators that control the growers’ henhouses where catchers work, they have limited access to or leverage over the people setting their working conditions. Crew leaders typically depend on the same corporate integrator and travel from house to house with their crews. Catchers often arrive at night to minimize disturbances to the chickens and to avoid catching in the intense heat of summer days.<sup>335</sup> This experience often isolates them even further. In the previously mentioned WHD-administered survey of employers, there were significant violations of the Migrant and Seasonal Agricultural Worker Protection Act (MSPA) with respect to catcher crews. Only slightly over 5% of employers had properly communicated conditions of employment, nearly 40% of the catcher crews were not paid the entire amount of wages owed to them, nearly 35% of drivers were not properly licensed, nearly 30% of the crews utilized unsafe vehicles for transporting crew members, and fewer than 15% of the crews had accurate records that made them eligible to receive full payment for the time they worked.<sup>336</sup>

Catchers are exposed to airborne particulate matter in the broiler houses as they capture birds and also as they load chickens onto trailers, which are fanned heavily during the summer to prevent overheating of the birds. Respiratory illnesses derive from airborne particles such as fecal matter, feathers, and dust.<sup>337</sup> Compared to other unexposed blue collar workers, chicken catchers have been found to have higher rates of acute symptoms related to poultry house exposures, higher rates of chronic phlegm and chronic wheezing, and decreased pulmonary function.<sup>338</sup>

Due to the nature of their work, catchers are at risk of developing repetitive motion disorders and other musculoskeletal injuries, as well as cuts, fractures, and infections.<sup>339</sup> In broiler houses holding 25,000 to 30,000 chickens,<sup>340</sup> integrators require crews of approximately eight workers to catch all birds in a broiler house within the span of about three hours before moving on to other hen houses during a shift. It is therefore common for each chicken catcher on a crew to catch and lift 1,000 chickens or more per hour, each bird weighing 5.5 pounds, on average, for the duration of shifts lasting as long as twelve hours.<sup>341</sup> According to SPLC, “Catchers have a high risk of developing back, arm, and hand injuries from repetitive motions and lifting so much weight over the course of a shift.”<sup>342</sup>

Chicken catchers have reported to the SPLC that when they are exposed to health and safety risks and are injured, there is no nurse or medical personnel present to attend to them, unlike in most processing plants. None of the chicken catchers whom SPLC interviewed reported having health insurance.<sup>343</sup>

## LIVE HANGERS

Live hangers confront the same health risks related to live animal exposure discussed above as well as those related to the high noise-level, repetitive motions, and weight lifting associated with processing plant work.

In order to keep the birds calm, they stand on hard floors in almost complete darkness, lifting each bird by its legs to hang it on hooks, at shoulder or head level, attached to moving conveyor belts.<sup>344</sup> They endure repetitive trauma as the hooks or shackles constantly hit the back of their hands and risk catching their gloved fingers on hooks.<sup>345</sup> They may hang 23 to 26 five-pound birds per minute, causing stress to their upper shoulder and neck areas.<sup>346</sup>

Working as a live hanger left a young man interviewed by Human Rights Watch with his fingers stuck in a claw-like condition: “I hung the live birds on the line. Grab, reach, lift, jerk. Without stopping for hours every day.

Only young, strong guys can do it. But after a time, you see what happens. Your arms stick out and your hands are frozen. Look at me now. I'm twenty-two years old, and I feel like an old man."<sup>347</sup>

Similar to other live-animal exposed workers, live hangers risk respiratory illnesses as they are exposed to dust, mites, and other airborne particles released by the moving and flapping birds. There is also the risk that animals suddenly urinate and defecate on the workers' faces, exposure to birds' pecking, biting, and scratching, and the possibility of a gloved finger being caught in a shackle.<sup>348,349</sup>

Raising and slaughtering chickens for meat at the fast pace which is demanded by factory farming produces a detrimental impact on workers. Consumers should support poultry sources that operate at slower, safer speeds, that respect workers' voices and input regarding safety and other working conditions without subjecting them to retaliation for speaking out, and that provide workers with appropriate medical treatment and affordable health insurance.



# ALTERNATIVES TO FACTORY-FARMED CHICKEN

## GROWING THE SUPPLY OF PASTURE POULTRY IN GEORGIA

The trend of consumer demand for local, sustainably produced food continues to grow in spite of a down-turned economy.<sup>350</sup> As evidence<sup>351</sup> continues to surface from the medical community and public health advocates linking pesticides, chemicals and antibiotics used to grow food with cancer, consumers are looking to minimize their exposure to harmful environmental toxins.<sup>352</sup> In addition, consumers are increasingly looking to connect with the farmers growing their food and to identify authentic food sources that have a face and name beyond a glossy label on the grocery store shelf.



Since 2005, Georgia has seen a 600% increase in farmers markets.

As a result, the United States has seen direct market-to-consumer sales of food, and attention to sustainable and organic food sources, increase significantly in recent years. Since 2005, Georgia has seen a 600% increase in farmers markets. Organic food sales have grown at a similar clip, with an average annual growth rate of 19% from 1997-2008.<sup>353</sup>

While this trend was triggered by demand for chemical-free fruits and vegetables, increasingly meat and poultry products are being scrutinized as information surfaces regarding the health, environmental, animal welfare and human labor practices of large-scale meat and poultry production facilities. Conscientious consumers and restaurateurs are looking for poultry raised with the same value-based practices as vegetables and other meat.

Consumption of chicken meat by Americans has risen by 118% between 1970 and 2005, faster than pork or beef. Furthermore, the amount of chicken eaten by Americans now rivals that of beef.<sup>354</sup> In particular, chicken has become much more economical over time. Poultry meat has a low retail cost at the grocery store in part because of the production efficiencies of factory farms.

Sustainable poultry production means reducing costs and maximizing productivity

but also attention to myriad other issues. Large-scale production has led to geographical concentration of birds and their waste products, creating environmental concerns in water and air quality. Consumers have increasing concerns about food safety including food borne pathogens, pesticide residues, additives, and antibiotic residues. In addition, nutritional value and production process concerns such as animal welfare, genetically modified organisms, environmental impact, worker safety, social justice are raising eyebrows.



Pasture-based poultry production provides a stark alternative to the dark and dank poultry houses of industrial farming.

Pasture-based poultry production provides a stark alternative to the dark and dank poultry houses, which, according to a University of Georgia study, can contain over 30,000 birds at capacity (in a 50' X 500' house)<sup>355</sup>, with little or no access to the outdoors. In contrast,

pasture-based production works with nature. Birds are raised with an all-natural diet, are not administered antibiotics or altered physically to survive the unnatural housing conditions of a traditional poultry house, and are often processed on or near the farm where they are raised. Medium to slow growing breeds are used. Birds are raised up to 12 weeks of age and their slaughter (dressed) weight is 3-4 pounds. In addition, farmers are free to raise and sell their birds independently, without the need for contracts with large poultry operations. This adds to the farm's bottom line and provides a sense of freedom to manage the farm product in a way that makes the most sense for that farm.

Raising poultry in this manner does come with increased costs, particularly as infrastructure to support the processing of the birds is low in the state of Georgia. This makes it even more imperative for consumers and others with purchasing power in the marketplace to support these operations. Doing so will help seed the infrastructure and bolster availability of inputs necessary to expand this market.

In spite of the confusing, and in some cases prohibitive, regulatory and contractual environment governing poultry production in the state of Georgia, consumers increasingly have more options to feed their families pasture-raised poultry. The notion of a "chicken in

every pot” is no longer an indicator of wealth or status. Consumers are interested in the quality of the chicken in that pot. Restaurateurs, who continue to play a critical role in supporting the locally-grown and organic food movement, are also seeking sources for a higher quality chicken product. Most importantly, farmers are entering this market, integrating poultry production into diverse farm operations, which can enhance the environmental and economic sustainability of their overall operations.

There are numerous farmers in every part of Georgia raising pastured poultry. According to Georgia Organics’ database, there are over 50 pasture poultry farmers of varying size and capacity. Many drive to out-of-state processing facilities that are USDA-inspected to process their birds and return to Georgia to sell. Some process on-farm, even though a confusing regulatory framework arguably prohibits this activity. Recently, one South Georgia farmer and leader in the sustainable farming movement, opened the first USDA-inspected on-farm poultry processing facility in the state of Georgia.

### WHITE OAK PASTURES: A LEGACY FARM ALTERNATIVE TO FACTORIES

White Oak Pastures, on the outskirts of Bluffton, GA, is a national model of sustainable agriculture, focusing on humane, grass-fed beef and lamb raised on the



Will Harris’ free range pastured poultry production has quickly become a national model of sustainable production.

Serengeti model of pasture rotation. The ranch has been in the Harris family since 1866. Will Harris III, the current owner, is the fourth generation family member to make his livelihood from the farm, currently raising an average of 600 Angus beef cows per year. To increase the health of the pastureland, White Oak Pastures also produces over 600 sheep per year. Harris has recently taken the farm to the next level and added pastured poultry to the farms product line. The ranch’s free range pastured poultry production has quickly become a national model of sustainable production.

Harris, a cantankerous cowboy lauded internationally for his devotion to animal welfare, ranched for decades as a conventional producer, raising calves that were shipped off to industrial feedlots halfway across the country. In the 1990s, Harris came to resent this insensitivity,



and commonly cites the toll of the shipping process, which exposed his calves to long hours of standing with no rest, water, or food, for his “conversion.”

Harris came to believe that the calves’ lives on the feedlot was an unnatural existence. Over several years, he transitioned his pastureland to Certified Organic, raising his own cattle in the grass-fed, free range style, for slaughter at an on-farm, USDA inspected facility he had built. Sixteen other farms, using similar production practices, send their animals for slaughter at White Oak Pastures. Harris says:

“Cows were born to roam and graze. Hogs were born to root and wallow. Chickens were born to scratch and peck. These are natural instinctive animal behaviors. Unfortunately, industrial commodity livestock production removes costs from meat production systems by raising animals in mono-cultural confinement systems that do not allow these instinctive behaviors.”

One of the reasons White Oak Pastures added pastured chicken to its production is to further embrace the Serengeti Plains rotational grazing model. Under this model, large ruminants (cows) are followed by small ruminants (sheep), who are then followed by birds (chickens and turkeys). In the process, pastures are grazed and fertilized in three different ways.

From an agricultural perspective, multi-species rotational grazing systems can achieve high levels of productivity through good management.

The poultry raised at White Oak Pastures live on USDA Certified Organic pastureland and have constant and total access to the outdoors. They are chemical-free, meaning they are not given growth hormones or synthetic antibiotics.

In addition, grass-based production systems are less reliant on external sources of feed, which can destabilize conventional production systems because of drastic feed price fluctuations.

Because of his effort to create a model of sustainable agriculture, Harris and White Oak Pastures have garnered many certifications and accolades, including:

- Certified Humane
- Certified Grass-fed
- Animal Welfare Approved
- Step 5 for chickens and Step 4 for cattle in the Global Animal Partnership 5-Step Animal Welfare Rating Program®
- 2011 Georgia Restaurant Association Innovator Award
- 2011 Winner of Georgia Small Business Person of the Year
- 2011 Recipient of Governor’s



#### Environmental Stewardship Award

- 2008 Winner of 'Flavor of Georgia' food contest
- 2008 Recipient of University of Georgia Award of Excellence

go hand in hand. White Oak Pastures positively impacts the local environment and the local economy.

The Global Animal Partnership 5-Step Animal Welfare Rating Program<sup>®</sup> is particularly exceptional. Step 1 prohibits cages and crates; Step 2 requires environmental enrichment for indoor production systems; Step 3 requires outdoor access; Step 4, pasture-based production; step 5, an animal-centered approach with all physical alterations prohibited; and, finally, under step Five+, the entire life of the animal must be spent on an integrated farm.

For poultry, White Oak Pastures is one of only two farms in the country to receive the Step Five certification.

As the largest private employer in Early County, Georgia, the White Oak Pastures business model shows that pastured production methods can be commercially successful alternatives to industrial feedlots.

Harris also owns the largest solar barn in the Southeast, which allows him to save 30 percent of the energy costs for running his farm, while minimizing its carbon footprint.

As many businesses have realized, efficiencies and environmental stewardship



# CONCLUSION

This report, produced for Georgians for Pastured Poultry by Compassion in World Farming, is now available to download at [www.georgiansforpasturedpoultry.org](http://www.georgiansforpasturedpoultry.org)

The industrialization of Georgia's poultry farms has come at a cost not reflected in the price consumers pay. It is important to examine the true costs of producing factory farmed chickens: from animal welfare to the environment, human health to workers' rights.

To this end, a new working group has been formed: Georgians for Pastured Poultry.

## WE CONSIST OF:

- Compassion in World Farming
- Chef Shaun Doty
- Darby Farms
- Fellowship of Southern Farmers, Artisans and Chefs
- Georgia Organics
- GreenLaw
- Sierra Club
- White Oak Pastures

*GPP would like to thank Whole Foods Market® South Region for its contributions as a Special Advisor.*

## OUR MISSION IS TO:

- Increase the number of food citizens eating pasture raised chicken



Our vision is for Georgia to become the leading state in the production and consumption of pasture raised poultry

- Ensure 'food choice' in the market by increasing the presence of pasture raised chicken
- Increase the numbers of farmers raising pasture raised chicken while developing and supporting the economic viability of that product in the marketplace

**OUR VISION** is for Georgia to become the leading state in the production and consumption of pasture raised poultry, where animal welfare, human and environmental health, and farmer and worker well being are as important as economics in the farming of chickens.



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# OUT OF SIGHT, OUT OF MIND:

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A REPORT BY GEORGIANS FOR PASTURED POULTRY



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