

## The Animal Kingdom and Farming

Several decades ago we had a family of magnificent Great Horned Owls living in our barn (now the Big Blue Barn) on Tenderfoot Valley Road. At dusk they would fly out and perch on the light pole in the barnyard and wait for the dinner to come out. As described in "*An Immense World*", a science book by Ed Young, owls have ears that are asymmetrical, the left ear is higher than the right ear and this imbalance allows the owl to record differences in the timing and loudness of sound frequencies arriving at the owl's face and thereby triangulate the location within 2 degrees of exactly where the sound came from. The owl also has a more limited frequency range than humans, however this turn out to be exactly the frequencies a mouse makes when rustling in some leaves. Tests in a dark room reveal that the first time the mouse moves on some leaves the owl turns its head staring at the exact location of the mouse, in the dark. At the next move by the mouse the owl launches and dinner is had. The owl uses the physics of sound and neural auditory brain cells to home in on prey. Owls rely much more on sound than sight to secure food.

I'm recounting this to you because I never understood the biology of the Great Horned Owls living with us. They are amazing creatures and scientists are only recently finding out about the world of senses that they live in. This same ignorance is true of almost all the animals that humans live with, domestic and wild. It turns out that we humans have known very little about how animals make their way in the world. Animals move through a completely different world than we do. They see with different colors, they see with ultraviolet light, they hear at frequencies we don't hear, they feel waves passing through otherwise quiet air and water, they use sonar, they use the Earth's magnetic fields, they sing inaudible songs, and on, and on. These animals, whether reptile, fish, insect, mammal, or bird are exquisitely evolved to find food and evade the predators in their environment. And we humans never understood them.

Wild animals generally found our farm a hospitable place to hang out (except for teenagers with guns). Our fields and streams were bordered by tall trees (perches for hawks) and grassed in irrigation ditches at the periphery (ground cover for pheasants and other mammals). Wildlife was everywhere, hawks dive bombing us on our tractors, pheasants in the fall, and a broad diversity of bird species roosting in the trees. Now the trees are gone and the land is 100% tilled, no edge-of-field cover is present (sprinkler irrigation removed the ditches). This loss of edge-of-field-habitat has become a serious concern of wildlife ecologists. But what about our treatment of domestic farm animals?

On our farm we had 120 cows with calves, 120 yearlings, 5 bulls, 10-15 milk cows, 10 pigs, 5 horses, and 100 chickens. All of these animals were free to roam in a field or large fenced yard. We had 400 acres of farm land and 2,500 acres of range land for the animals to inhabit. This was a fairy tale land for our animals compared to 21<sup>st</sup> Century treatment of animals. Recently I spent time looking at photos of different breeds of concentrated animals being raised on factory farms, often termed industrial farming. I had been generally aware of the issues with the concentrated raising of animals but it was very disturbing and disgusting to spend time looking at actual animals in these facilities: thousands of fecal and filth coated animals packed into tiny steel barred pens, their entire existence spent unable to turn around; force fed and then slaughtered early to achieve maximum return on investment. These photos were concrete evidence of human indifference to animals.

There are two indirect causes of industrial farming: too many humans to feed and the desire of large corporations for ever greater profit margins. However, the primary reason is simply the loss of respect for the life of animals by humans and some of this derives from our ignorance of the science of animals and the rest is arrogance. For many people a chicken is something in a plastic package at the grocery store.

There are major problems with concentrated factory farms other than the disturbing visuals. Some of these problems include: overuse of antibiotics and loss of drug effectiveness; transmission of animal diseases to humans (Covid); chronic lung diseases in workers; foul odors spreading to nearby communities; enormous concentrations of manure that enter local water systems; and most importantly they have become nurseries for very dangerous infectious diseases. This last one is really worrisome. From 1997 through 2015 over 175 million farm animals have been deliberately killed in large, world-wide infectious die-offs (includes only die-offs of 400,00 or more per occurrence), and the rate of occurrence has been increasing. About 75% of emerging infectious diseases are transmissible between humans and animals. And we now know that a warming planet is changing the way bacteria and viruses survive, grow, mutate, and spread. These are the hard negatives of factory farms beyond cruel treatment.

Many experts on food say we must transition to a plant-based diet. As I get older I have grown to enjoy the flavor of fresh vegetables and fruits more than a big hunk of meat. When I am eating meat now, I remember the photos of those factory farm animals.

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