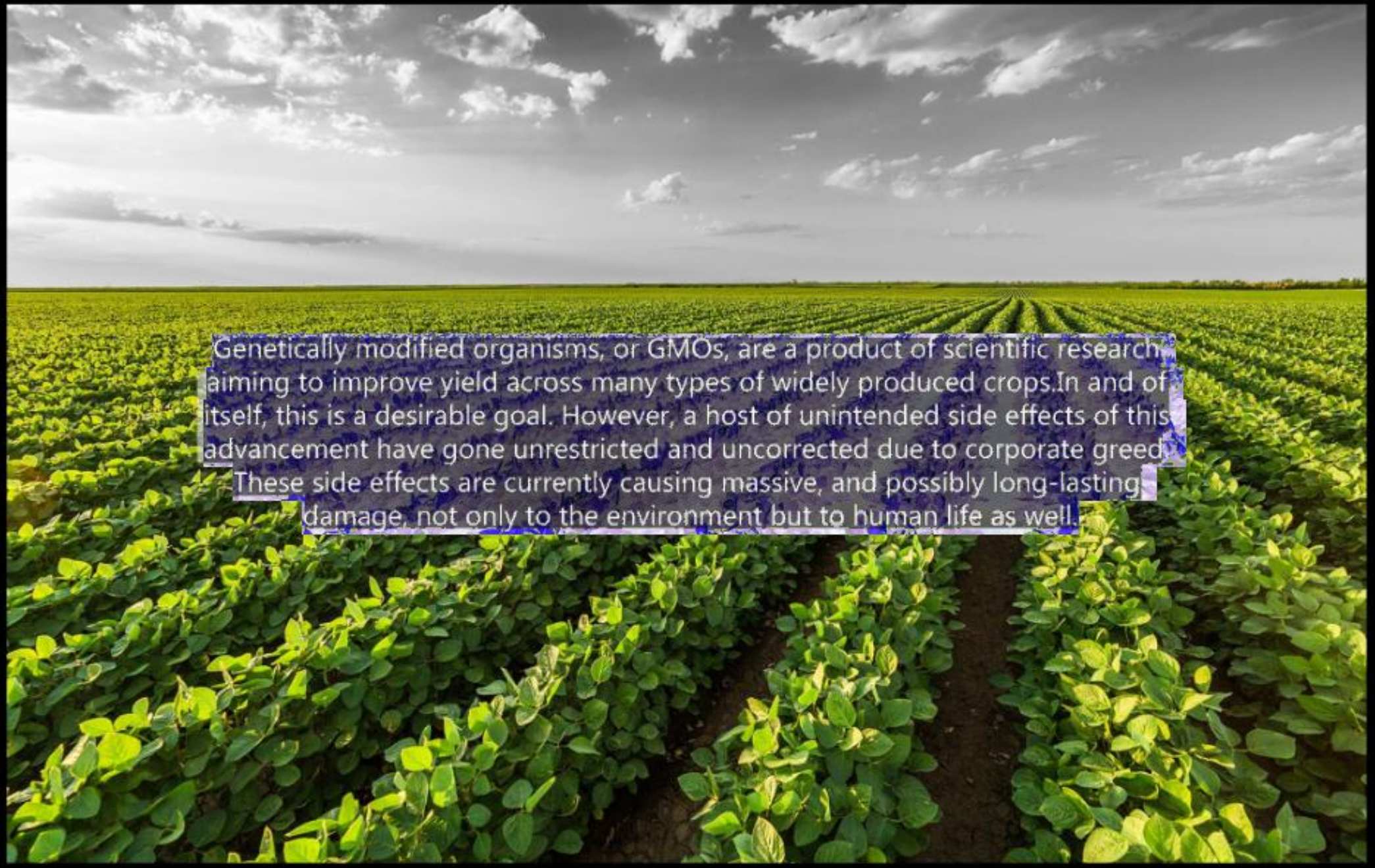
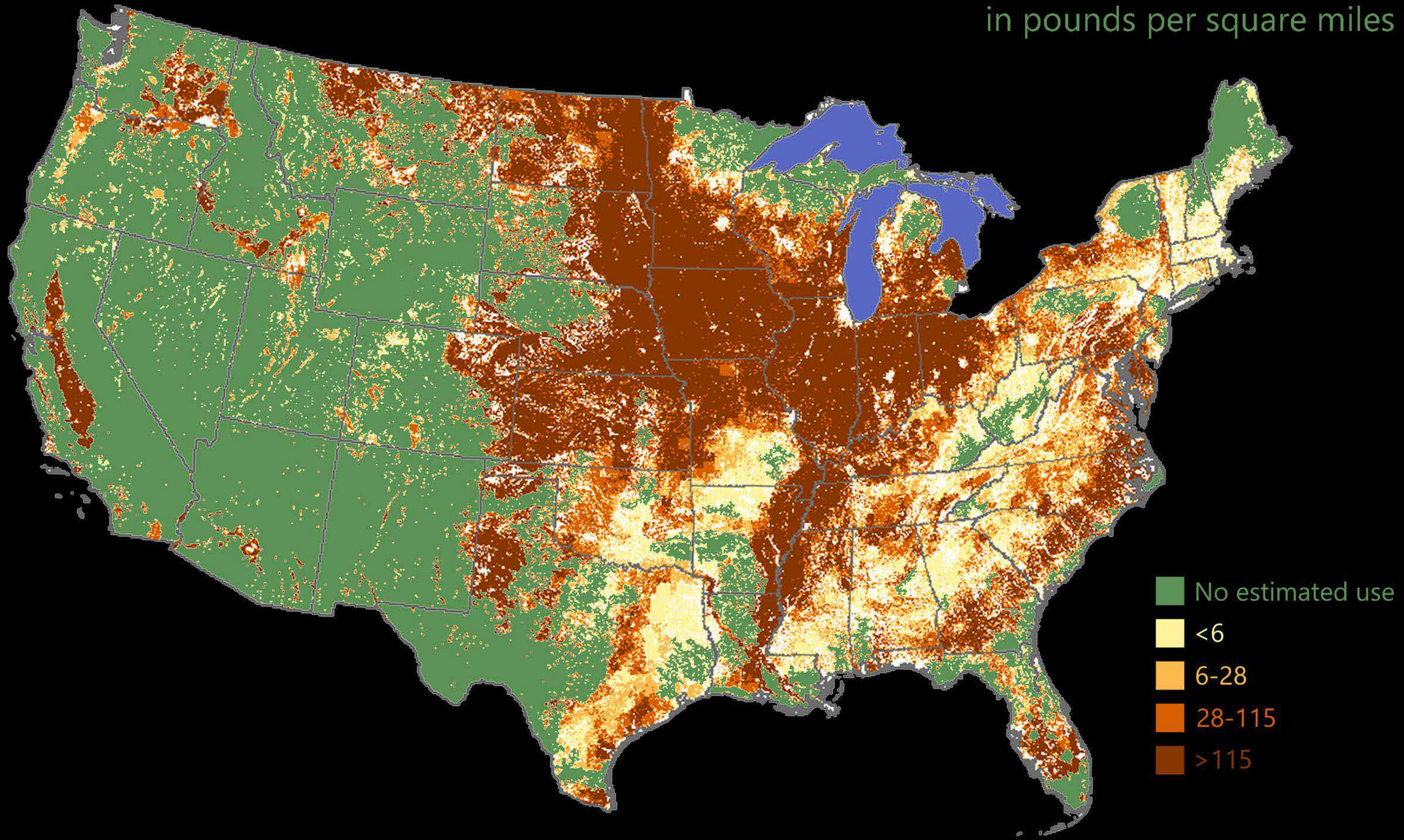

Overgrowth: Decay for Profit

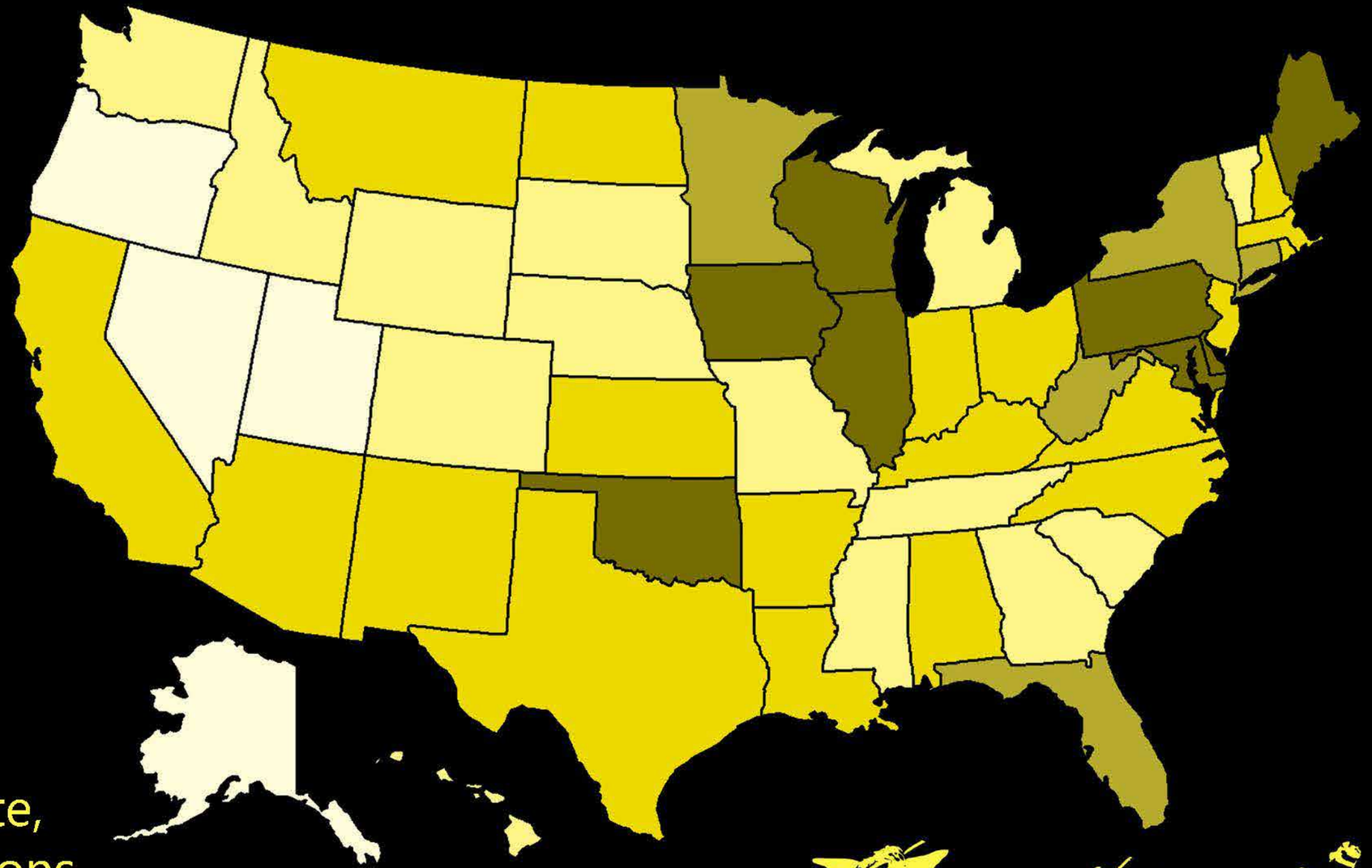

Genetically modified organisms, or GMOs, are a product of scientific research aiming to improve yield across many types of widely produced crops.In and of itself, this is a desirable goal. However, a host of unintended side effects of this advancement have gone unrestricted and uncorrected due to corporate greed. These side effects are currently causing massive, and possibly long-lasting, damage, not only to the environment but to human life as well.

Estimated use of Glyphosate on agricultural land
in pounds per square miles



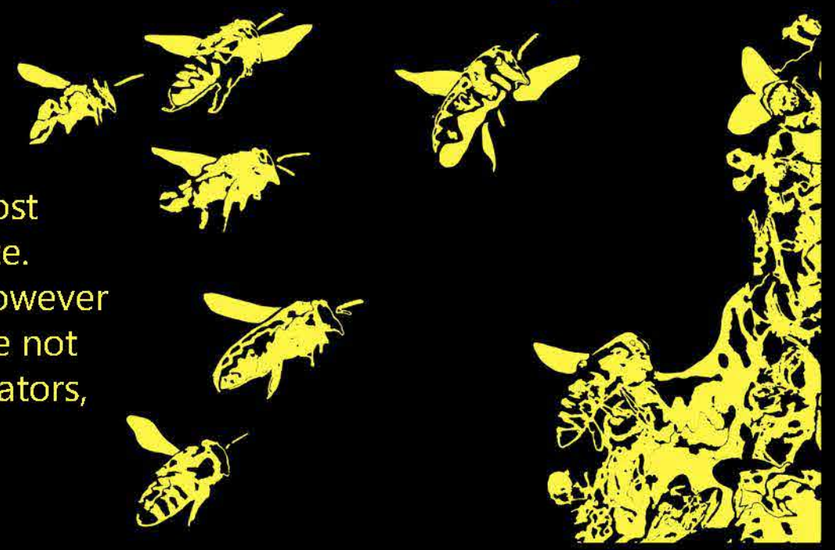
Bee Colony Decline by State from 2014-2015

60%
40%
20%
10%
0-10%



GMOs, Glyphosate, and Bee Populations

One of the major objectives in genetically modifying crops is to increase pesticide resistance. This allows for more liberal use of chemicals that would otherwise kill crops in the process of destroying pests and weeds. One of the most prominent pesticides protected against through modification is called glyphosate. Genetic modification is very effective in producing glyphosate resistant crops, however there are dire unforeseen consequences in terms of environmental impact. While not the sole cause of recent declines in the populations of bees and other key pollinators, the role of glyphosate in this issue can not be ignored.



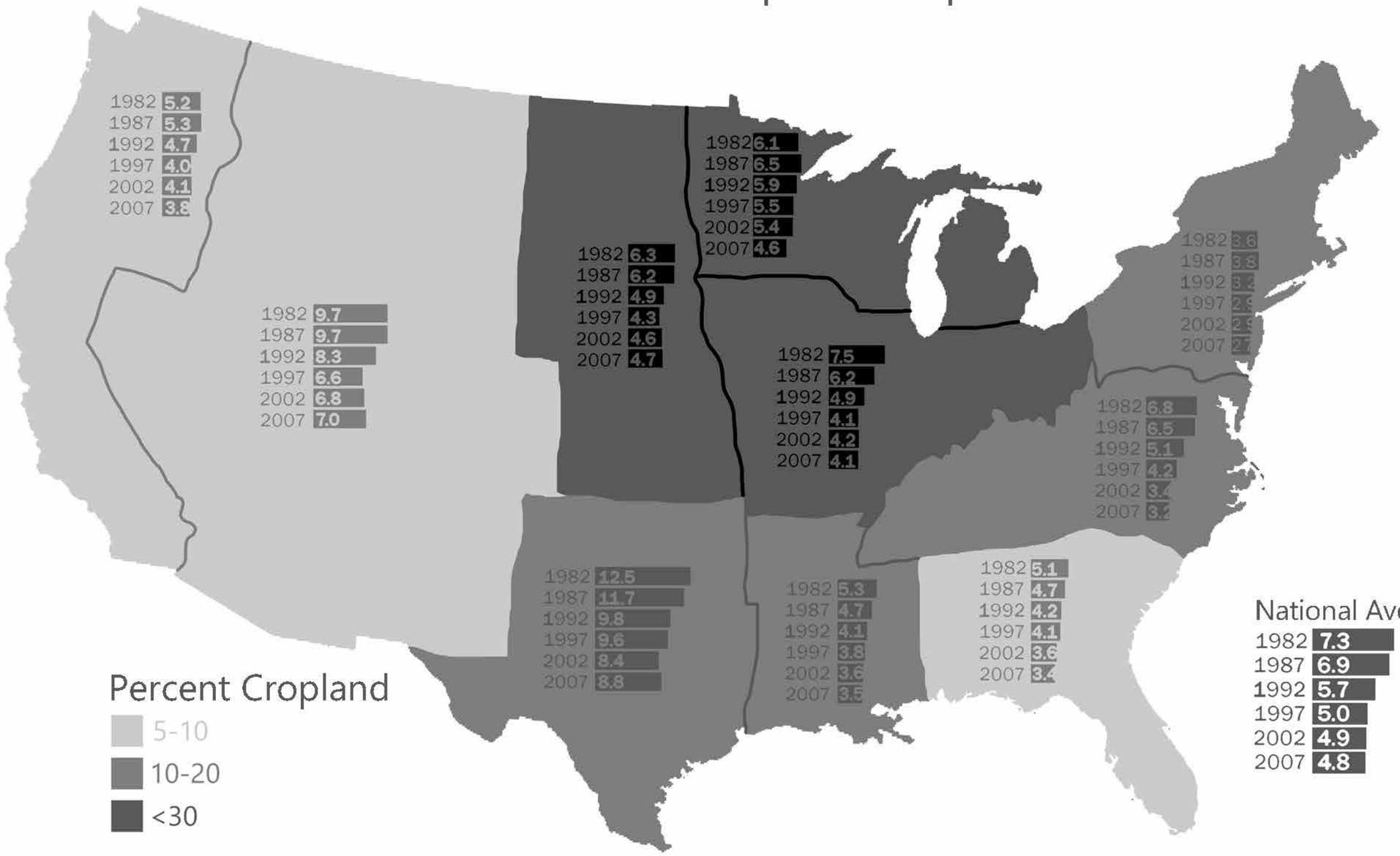
Pollinator Decline

Pesticides weaken the immune systems of honeybees and other pollinators, rendering them susceptible to colony-destroying diseases.

It only takes three weeks for American Foulbrood disease to decimate a beehive.


The United States uses 1 billion gallons of pesticides annually, 17.8% of total world usage.

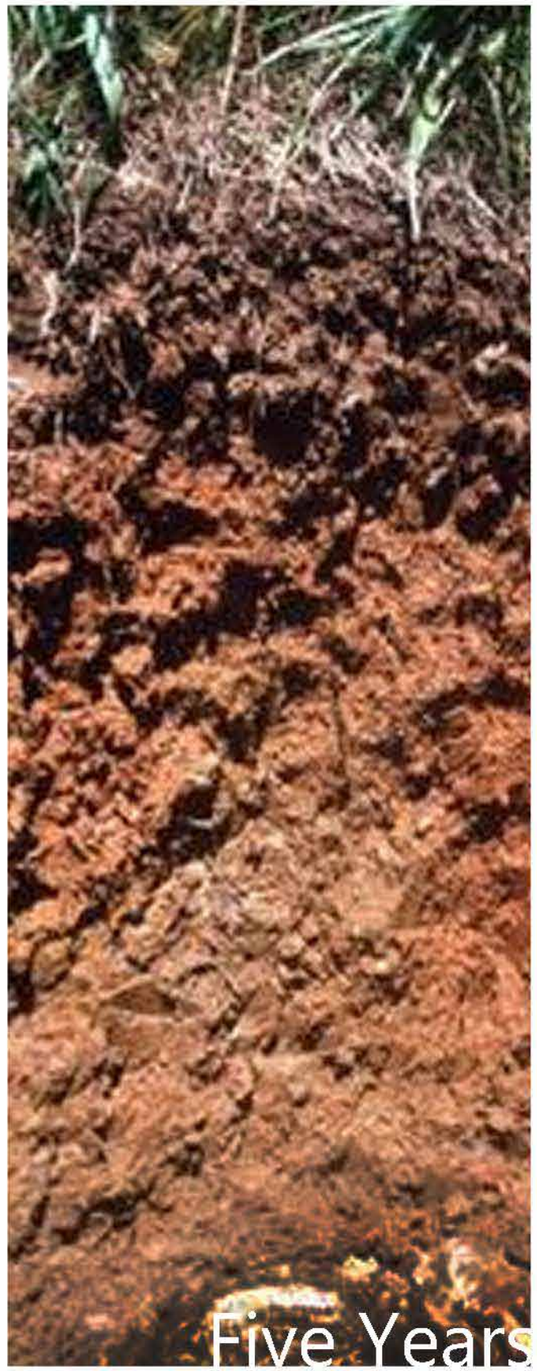
Soil Erosion in Tons per Acre per Year



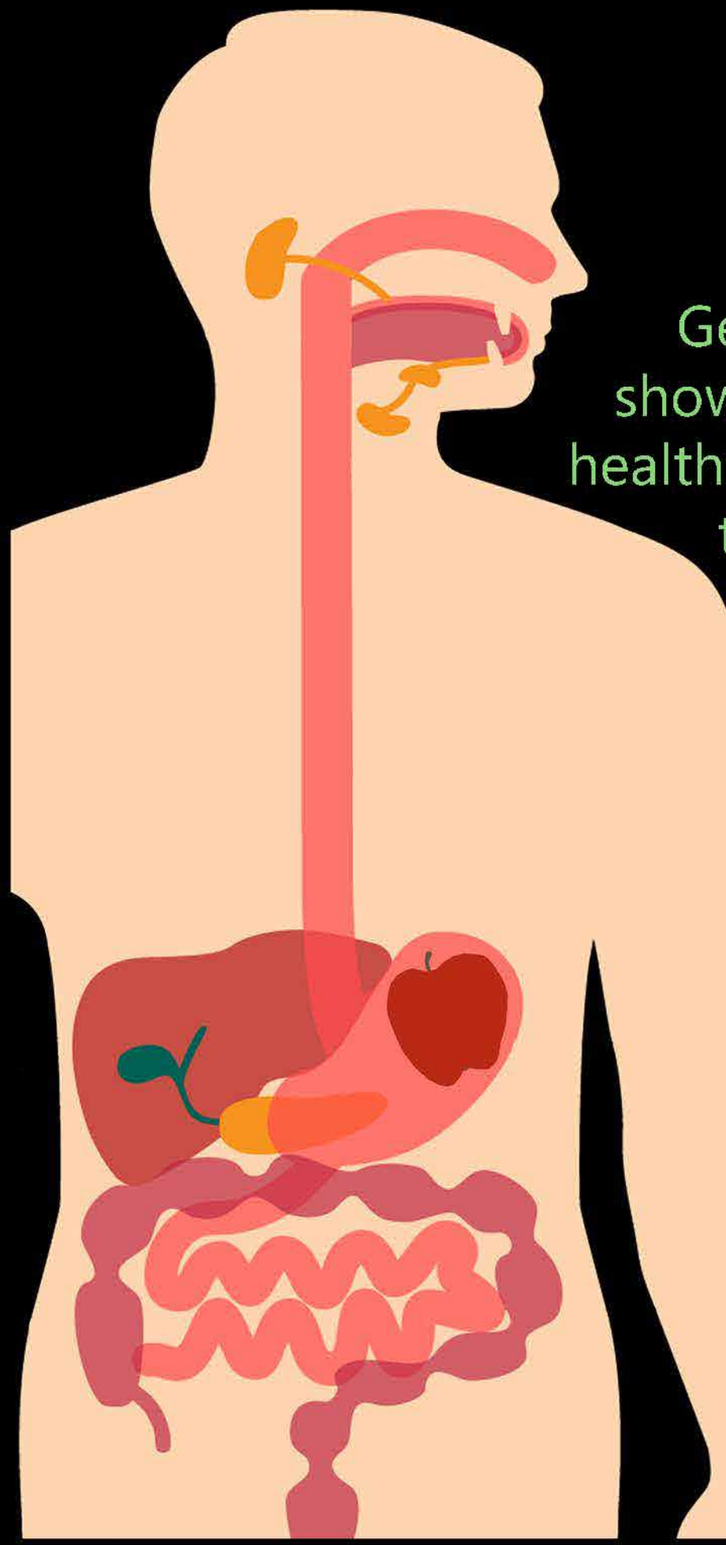
Erosion exacerbated by pesticides and unsustainable farming practices causes degradation in soil quality. Eventually, this leads to desertification and the inability of the land to continue sustaining crops, livestock, and people. Recent reductions in pesticide use have resulted in lowered rates of erosion. This is a good step, but also makes the correlation clear.

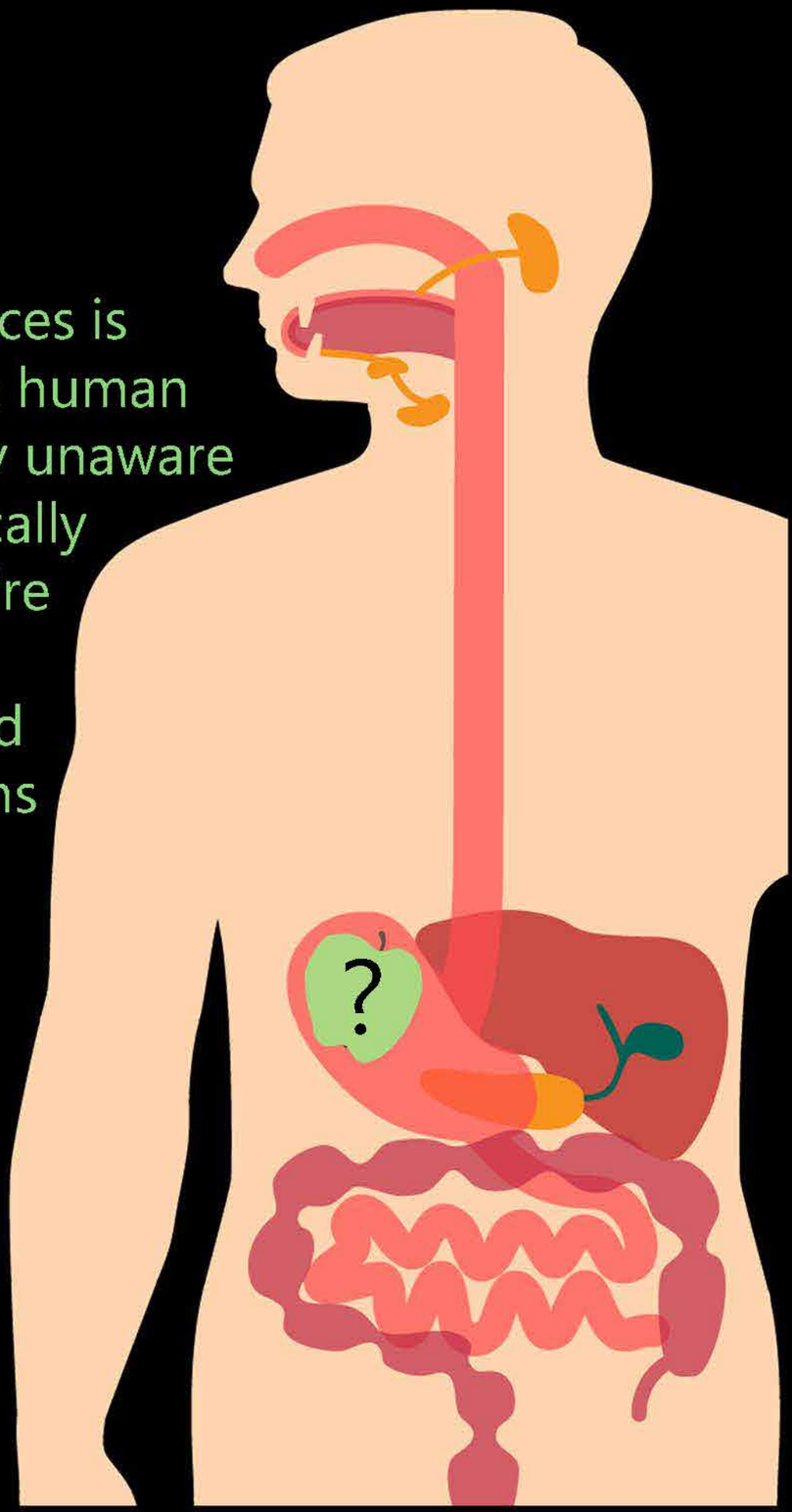
Erosion and Desertification

Over time, pesticides in conjunction with unsustainable farming practices can degrade soil and result in destruction of the land.



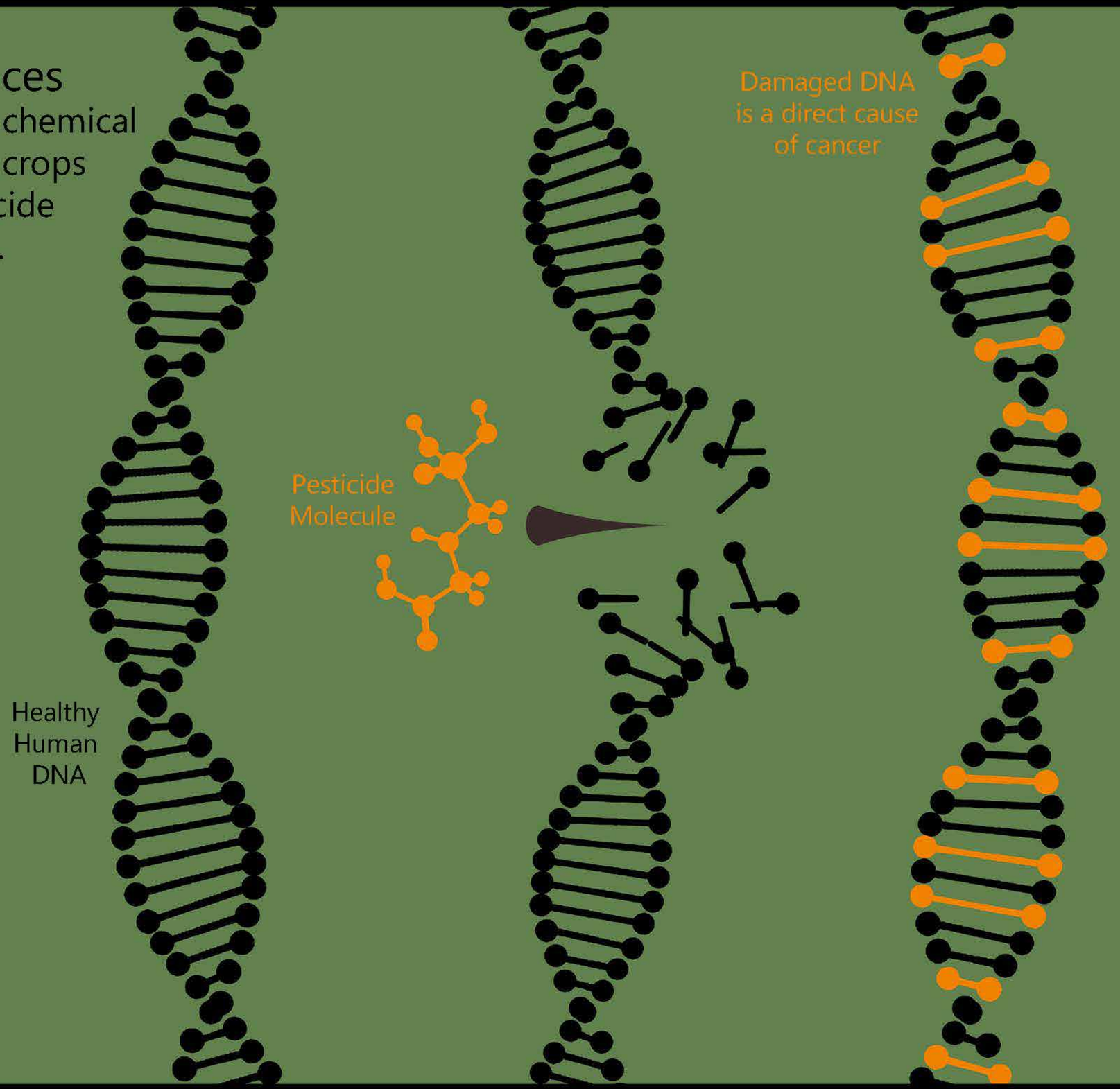
Gene modification of human food sources is shown to result in detrimental impacts on human health. The average consumer is completely unaware that the food they're eating is genetically modified, as the FDA does not require proper labeling. They are further uninformed on the effects that food has on their bodies. Health concerns include toxicity, allergenicity, anti-biotic resistance, immuno-suppression, cancer, and loss of nutritional value.





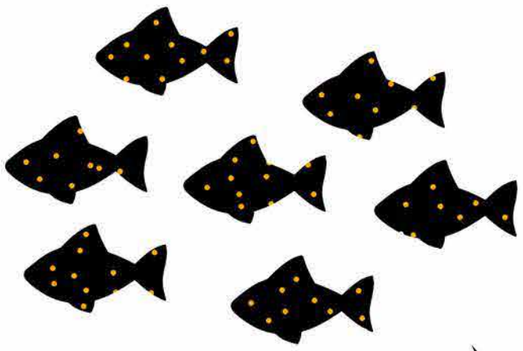
Unintended Consequences

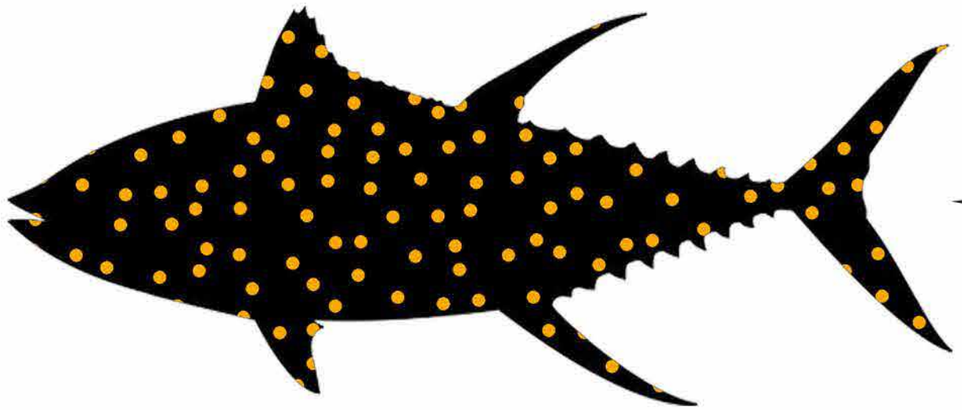
Consuming trace amounts of chemical pesticides present in modern crops can cause cancer as the pesticide molecules damage your DNA.



Bioaccumulation

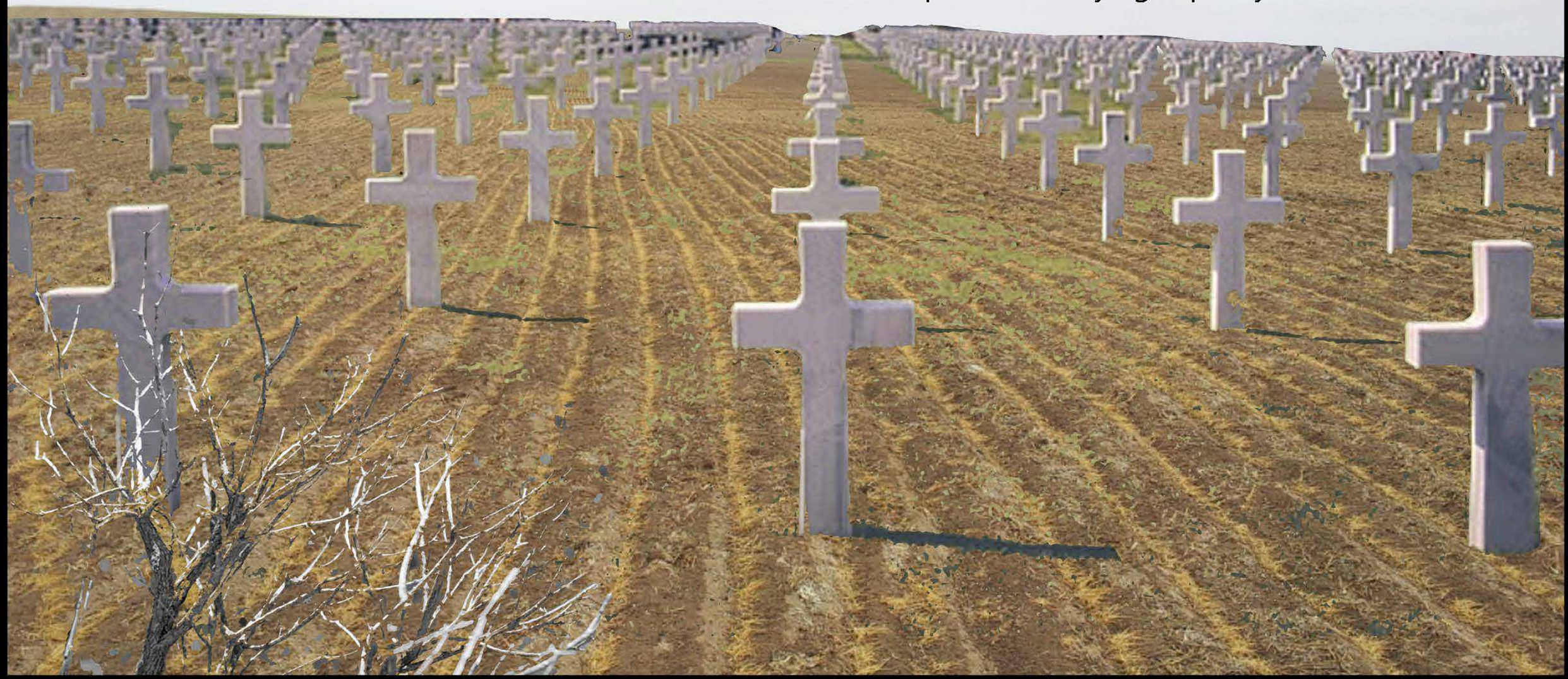
A phenomenon through which materials and compounds present in the environment migrate up the food chain, increasing in density at each level. Harmful chemicals inadvertently consumed by small organisms become present in higher concentrations in the bodies of organisms that rely on those animals as food sources. As humans sit at the top of the food chain, we are susceptible to poisoning from eating organisms that have a high concentration of pesticides and other pollutants in their bodies due to overuse in farming and industry.





Deadly Ends

Given the wide range of problematic side effects associated with GMOs and modern farming practices, it is clear that industry-wide reform is necessary. These reforms are needed not only in the philosophy and practice of how we grow food for such a massive population as we have in modern times; but also politically, in how we regulate and enforce sustainable practices. Without these, the only alternative can be a bleak future as the land degrades beyond the point of recovery, and we are unable to support the growing world population. The inevitable result of continuing on our current path is massive loss of human life as we surpass the carrying capacity of the environment.



Long Term Proposal: Supplemental Individual Farming

By normalizing and encouraging the establishment of community gardens in urban areas, we can begin to ease the necessity of industrial farming. Designing urban infrastructure to facilitate this in more widespread and innovative ways can become an impactful vehicle for positive change.