

POLLUTION AND THE BATTLE AGAINST IT

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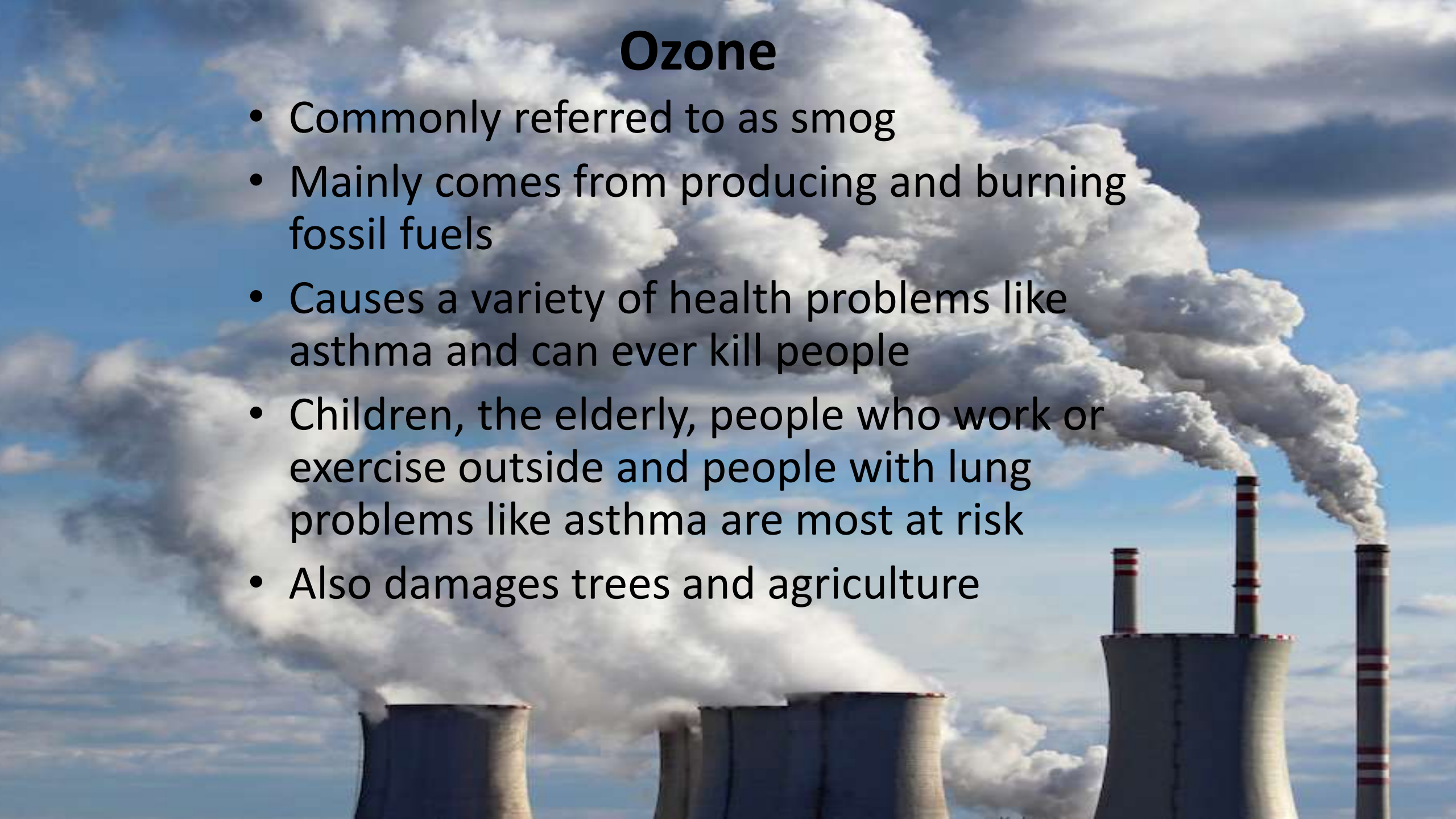
Environmental Health Director and Senior Attorney

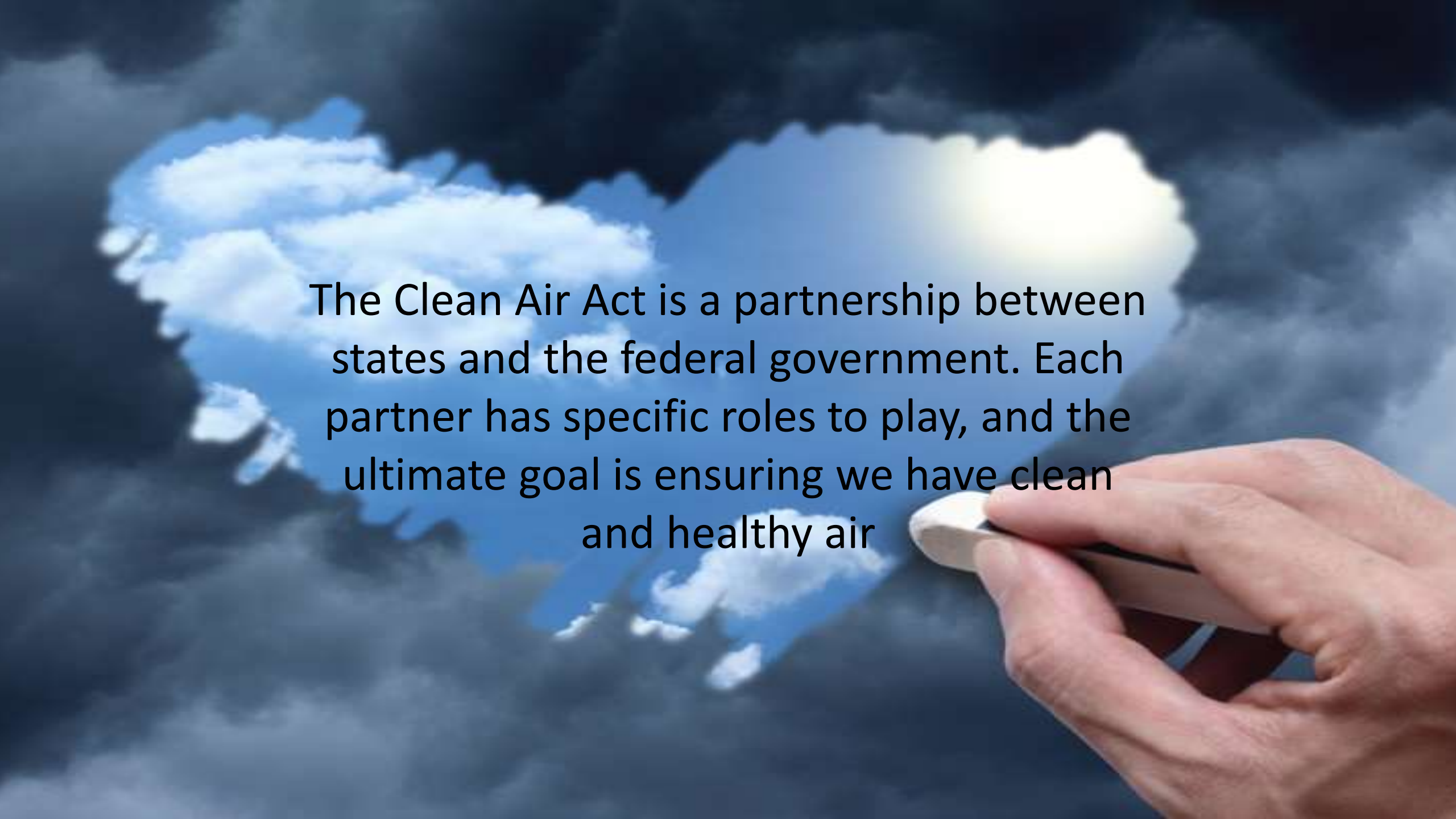
Center for Biological Diversity



Ozone

- Commonly referred to as smog
- Mainly comes from producing and burning fossil fuels
- Causes a variety of health problems like asthma and can even kill people
- Children, the elderly, people who work or exercise outside and people with lung problems like asthma are most at risk
- Also damages trees and agriculture



A hand holding a magnifying glass over a map of the United States against a cloudy sky background. The map is centered on the United States, and the magnifying glass is positioned over the eastern coast. The text is overlaid on the map.

The Clean Air Act is a partnership between states and the federal government. Each partner has specific roles to play, and the ultimate goal is ensuring we have clean and healthy air

Steps to Address Ozone

- US EPA sets standard for “acceptable” levels
- US EPA, with input from states, decides which areas are violating the ozone standard, which are called “nonattainment” areas
- US EPA assigns nonattainment areas levels based on how bad the ozone problem is
- States then come up with plans to fix the ozone problem

Levels of ozone nonattainment areas

- Marginal
- Moderate
- Serious
- Severe
- Extreme

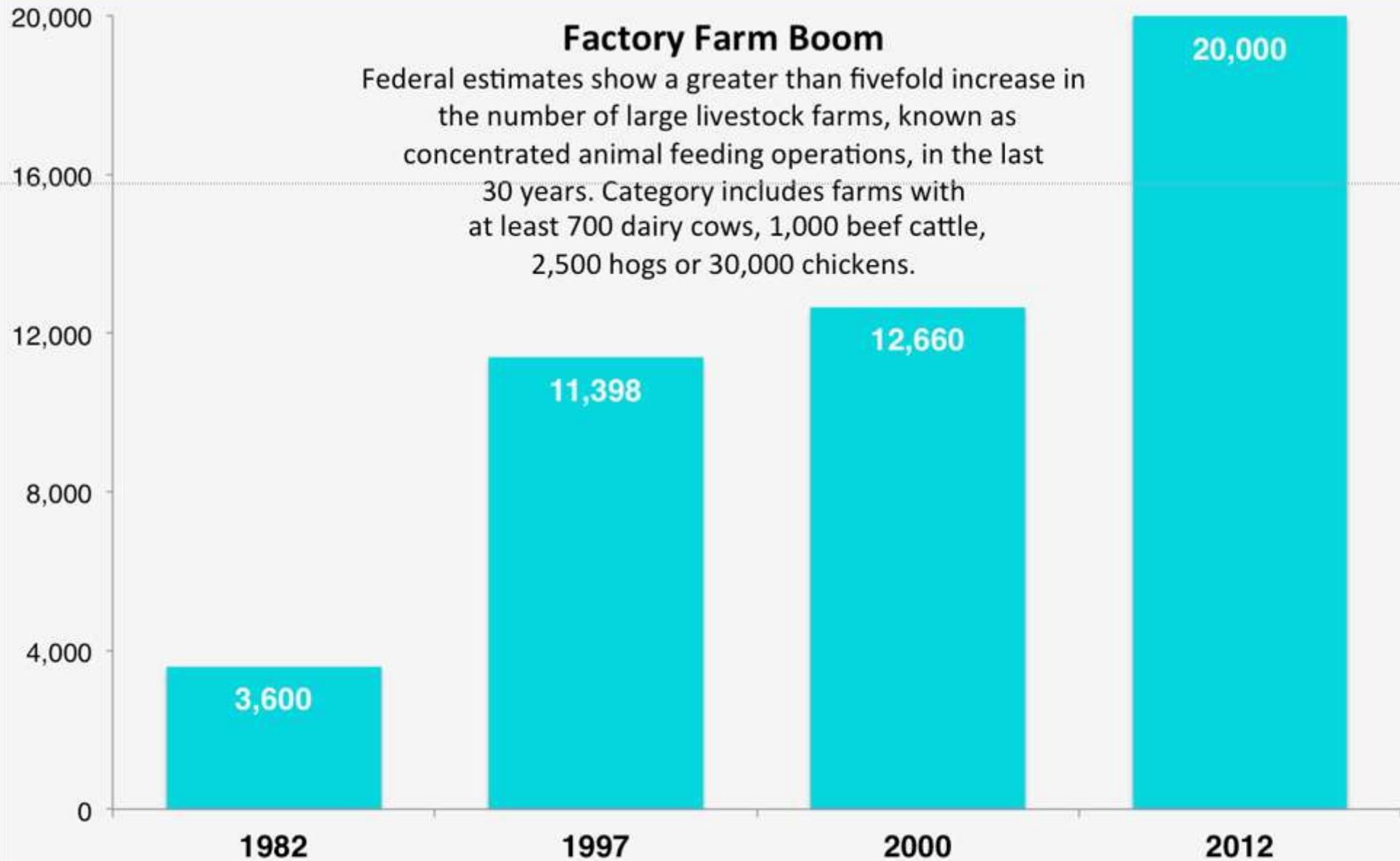


Levels of Ozone Nonattainment Areas

- Governors have the power to ask US EPA to “bump up” a nonattainment area to a higher level at any time.
- US EPA must honor this request.
- The benefit of bumping up to severe is that then polluters have to “offset” their pollution; meaning a new source of pollution has to get an existing source of pollution to reduce its pollution

Factory Farm Boom

Federal estimates show a greater than fivefold increase in the number of large livestock farms, known as concentrated animal feeding operations, in the last 30 years. Category includes farms with at least 700 dairy cows, 1,000 beef cattle, 2,500 hogs or 30,000 chickens.



Sources: 1982 & 1997 estimates - U.S. Department of Agriculture;
2000 & 2012 estimates - U.S. Environmental Protection Agency

The Dirty Truth About Cheap Meat

Factory farming has become one of the filthiest industries in America - producing an ocean of fecal matter every year

Amount of factory-farm animal waste generated in the U.S. each year:

500 MILLION TONS

Distance noxious-smelling airborne ammonia - a toxic gas released by decomposing animal waste - can travel before hitting soil or water (causing fish kills):

UP TO 300 MILES

Number of pounds of fecal matter animals raised for food in the U.S. produce per second:

87,000

Amount of the Earth's total land mass used for animal grazing:

26%

Number of times more farm-animal waste produced than human:

130

Minimum number of diseases that can be transferred from farm-animal waste to humans:

40

Number of land acres devoted to U.S. animal production:

528 MILLION

Miles of river across 22 U.S. states reporting polluted waterways caused by farm-animal excrement:

35,000

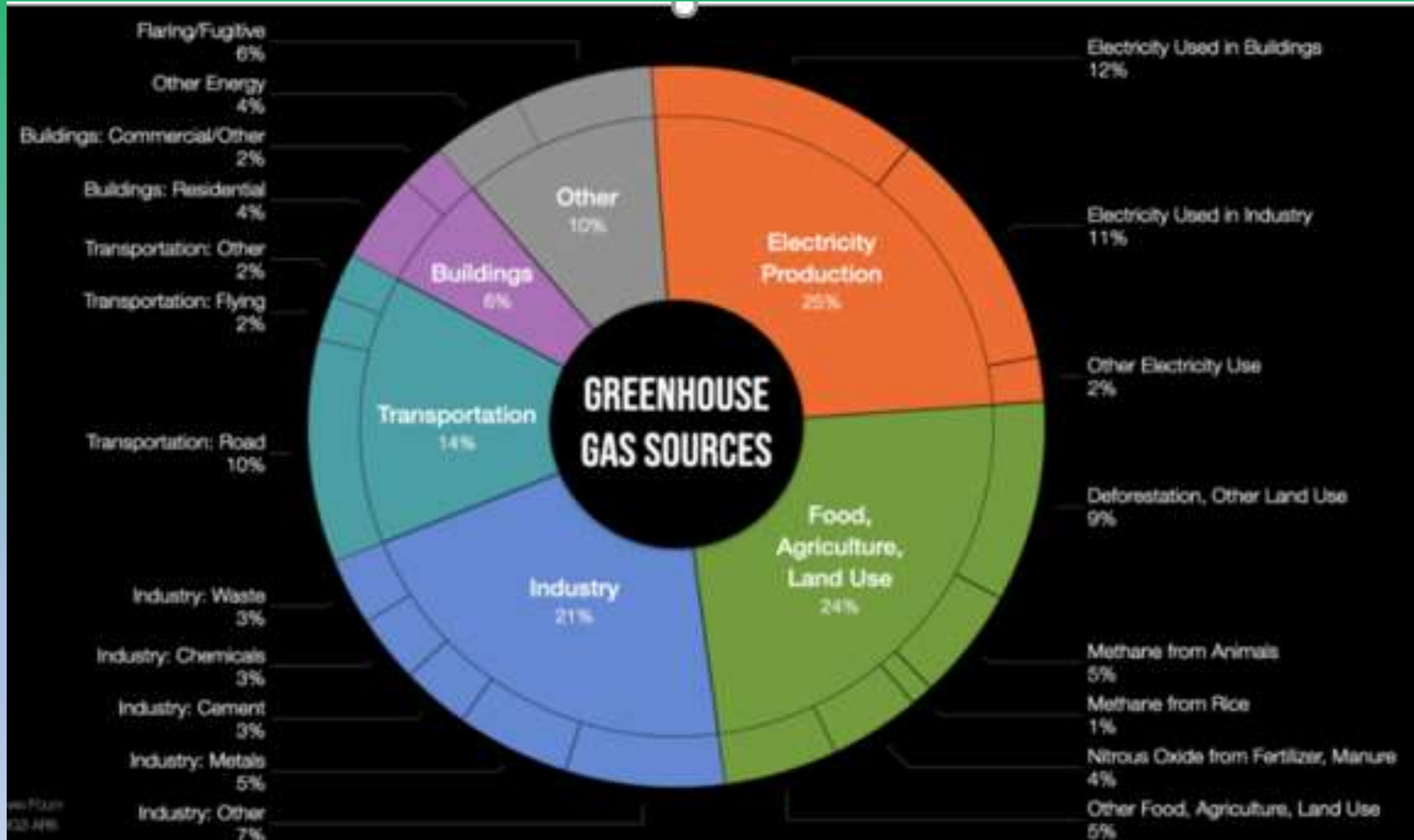
CAFO AIR POLLUTANTS

EMISSION	SOURCE	TRAITS	HEALTH RISKS
Ammonia	Formed when microbes decompose undigested organic nitrogen compounds in manure	Colorless, sharp, pungent odor	Respiratory irritant, chemical burns to the respiratory tract, skin, and eyes, severe cough, chronic lung disease
Hydrogen Sulfide	Anaerobic bacterial decomposition of protein and other sulfur containing organic matter	Odor of rotten eggs	Inflammation of the moist membranes of eye and respiratory tract, olfactory neuron loss, death
Methane	Microbial degradation of organic matter under anaerobic conditions	Colorless, odorless, highly flammable	No health risks. Is a greenhouse gas and contributes to climate change
Particulate Matter	Feed, bedding, materials, dry manure, unpaved soil surfaces, animal dander, poultry feathers	Comprised of fecal matter, feed materials, pollen, bacteria, fungi, skin cells, silicates	Chronic bronchitis, chronic respiratory symptoms, declines in lung function, organic toxic dust syndrome



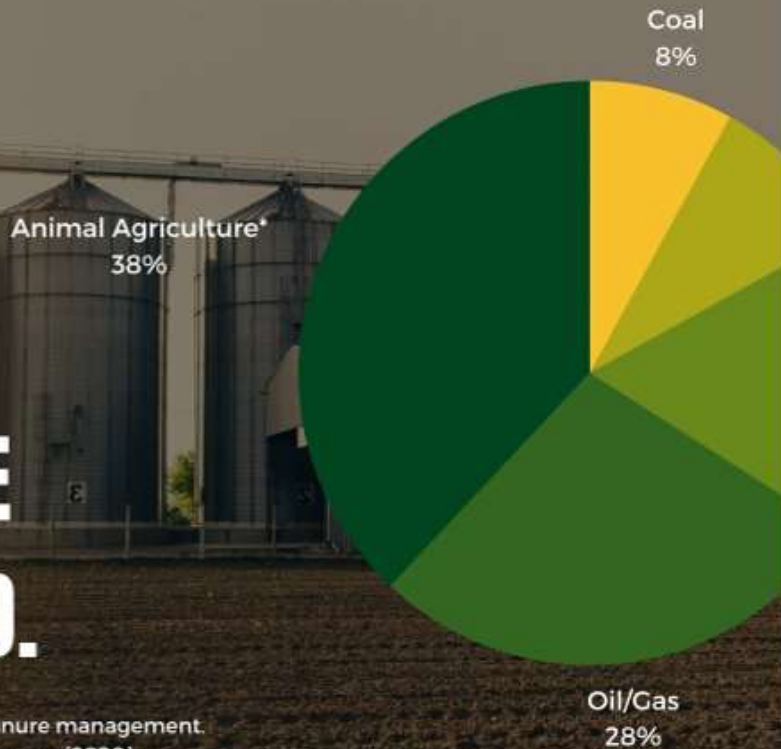
Climate Calculations

The world's agriculture and food system causes about ~24% of our GHG emissions *directly*, or ~35% of when including indirect emissions (transportation, packaging, refrigeration, etc.). Animal ag contributes disproportionately, at 16.5% of GHGs.



FACTORY FARM METHANE SHOULD BE REGULATED.

*28% enteric fermentation + 10% manure management.
Source: Environmental Protection Agency (2020).



Methane is
84x more potent
than CO₂ in the short term

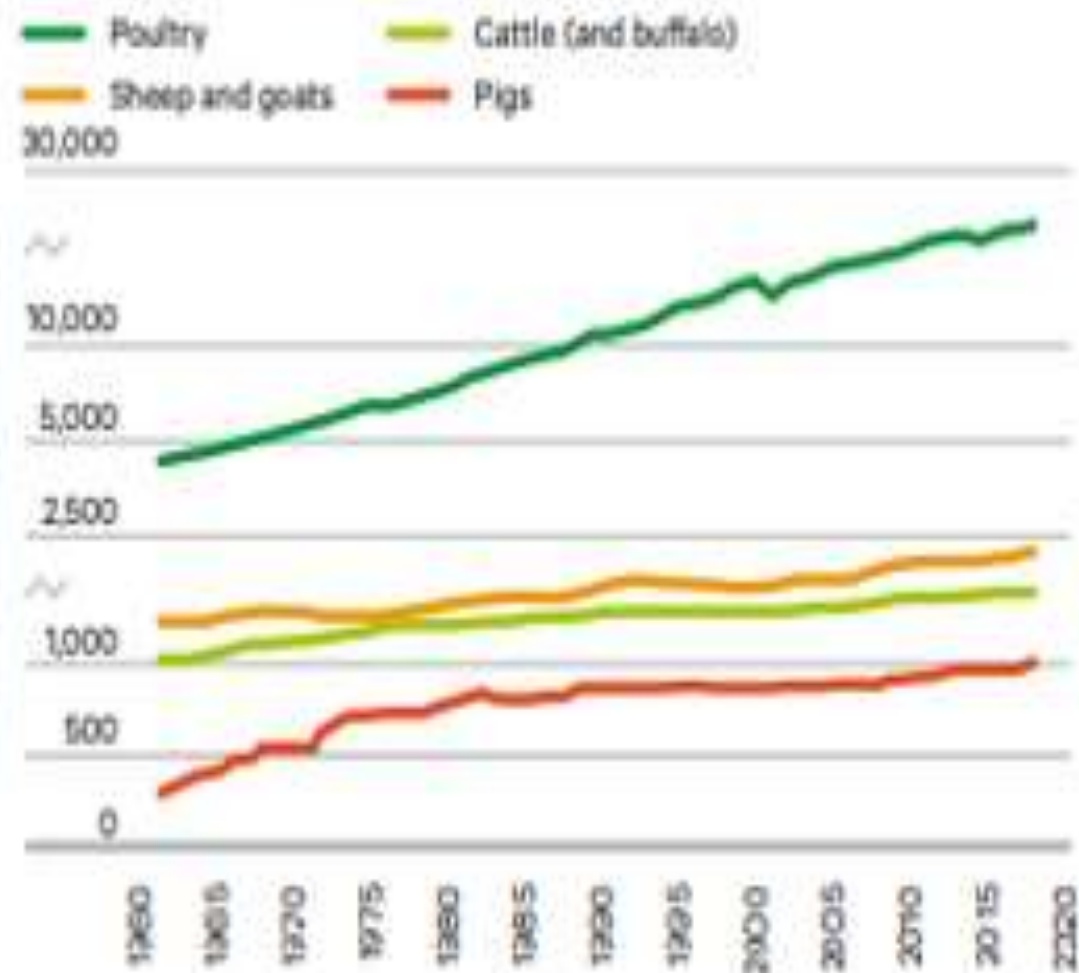
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Policy Changes Can Make a Big Difference

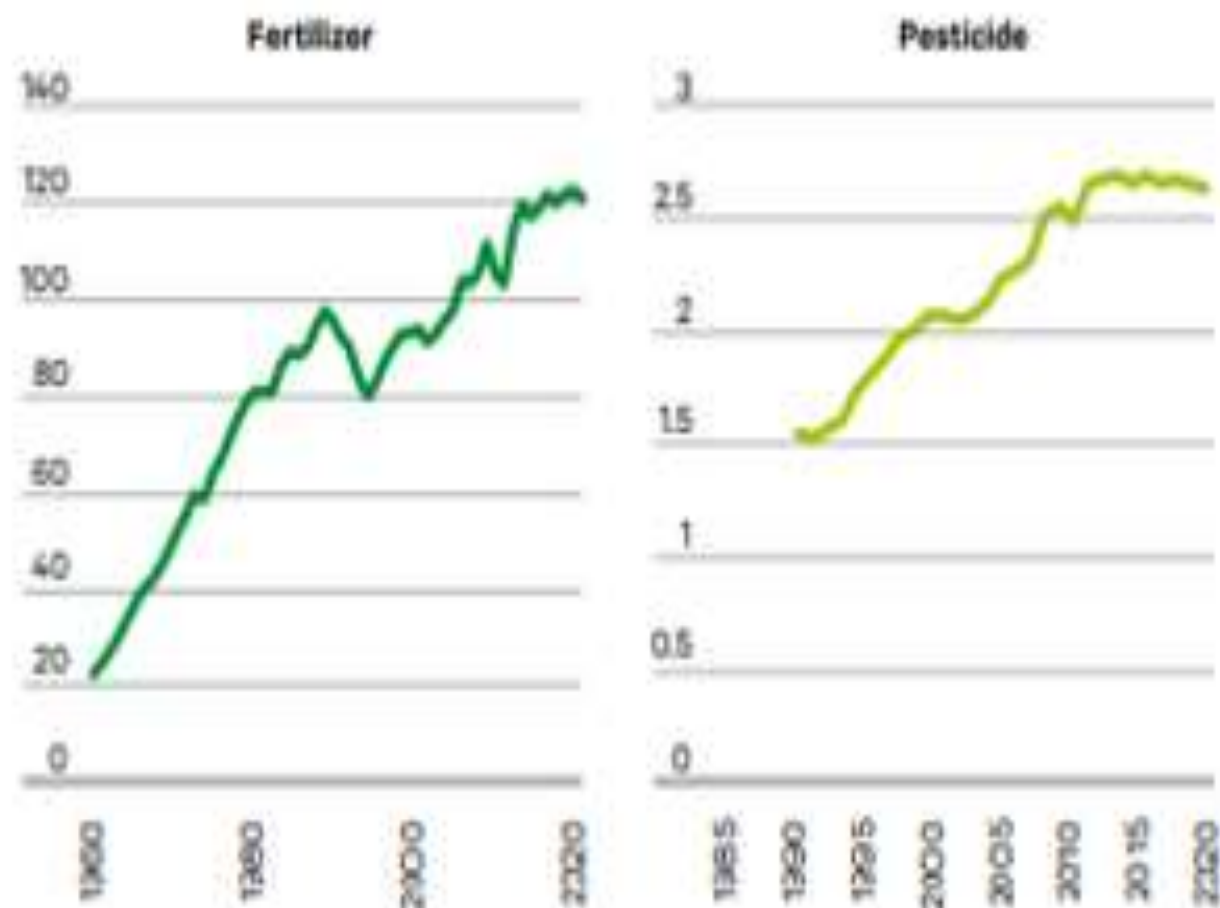
Table 3 Greenhouse gas emissions (kg of CO₂-eq) of daily food group recommendations for a 2000-kcal diet pattern by country^a

	Protein Foods	Dairy	Grains	Fruit	Vegetables	Oils/fats	Total
Germany	0.98	0.81	0.05	0.12	0.20	0.09	2.25 ^b
India	0.03	0.41	0.11	0.05	0.17	0.08	0.86 ^b
Oman	1.24	0.17	0.20	0.39	0.27	0.26	2.53
The Netherlands	1.12	0.89	0.08	0.08	0.12	0.15	2.86 ^c
Thailand	0.63	0.33	0.31	0.47	0.09	N/A	1.83
United States	1.84	1.10	0.02	0.16	0.16	0.03	3.83 ^c
US Vegetarian	0.06	1.10	0.02	0.16	0.16	0.03	1.80 ^c
Uruguay	1.50	0.65	0.03	0.18 ^d		0.04	2.42 ^b
EAT-Lancet	0.79	0.30	0.03	0.08	0.12	0.05	1.36

Global numbers of farmed animals



Application rates of fertilizer and pesticide (global) (kg per ha)



Source: Food and Agriculture Organization of the United Nations (2018), FAOSTAT, www.fao.org/faostat/en/#data/OA (accessed 1 Dec. 2020).

Top Crops and Their Uses

- In 2020, 312 million acres were planted in principle crops (major commodity crops) in the U.S. We have about 420 million acres of cropland total in the U.S., and an additional 650 millionish acres of pasture/rangeland.
- Corn → 84 million acres in 2020 in the U.S.
 - About 40% of U.S. corn is for ethanol. About 36% is for animal feed.
- Soy → 83 million acres
- Hay → 53 million acres
- Wheat → 36.7 million acres
- Cotton → 11.6 million acres





One Billion Pounds of Pesticides Are Used Annually in the United States

- Study after study finds that US agriculture is increasingly toxic.
- The U.S. allows use of 85 pesticides outlawed in the E.U., China or Brazil. 322 lbs of pesticides used here in 2016 are banned in the E.U.
- Heavy pesticide use is polluting our water, destroying our soils, and driving the extinction crisis.
- Bumble bees, butterflies, fireflies, and many others are blinking out.

FIFRA

- EPA is required to register a pesticide so long as “when used in accordance with widespread and commonly recognized practice it will not generally cause unreasonable adverse effects on the environment.” 7 U.S.C. § 136a(c)(5)(C).



Endangered Species Act

Congress enacted the Endangered Species Act in 1973 to provide for the conservation of endangered and threatened fish, wildlife, plants and their natural habitats.

16 U.S.C. §§ 1531, 1532.



“The plain intent of Congress in enacting this statute was to halt and reverse the trend toward species extinction, **whatever the cost.**”

TVA v. Hill (1978).

ESA Consultation for Pesticides



Thank You

