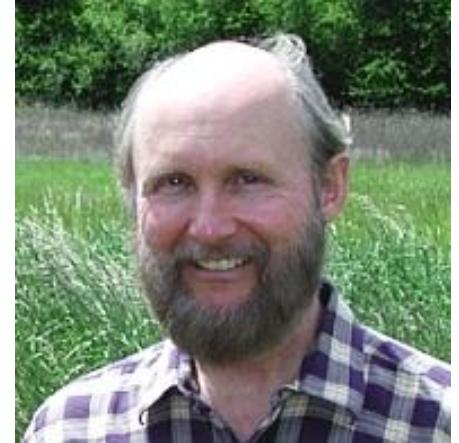


Eugene Veg Education Network (EVEN)

SPECIAL VEG PRESENTATION

Thursday, July 28, 2011

Personal Food Choices and Climate
Change
by
Dale Lugenbehl and
Sandy Aldridge



WHAT: Free Educational Presentation
WHEN: 7 pm
WHERE: McNail-Riley House, 601 W. 13th Av
(@ Jefferson), in Eugene
(Park free in fairgrounds across the street.)
COST: FREE! Open to everyone---vegans,
vegetarians and anyone interested in the
benefits of a plant-based diet.

[Click >> here to read more about Dale and
Sandy!](#)

A COMPARISON OF CALORIE REQUIREMENTS



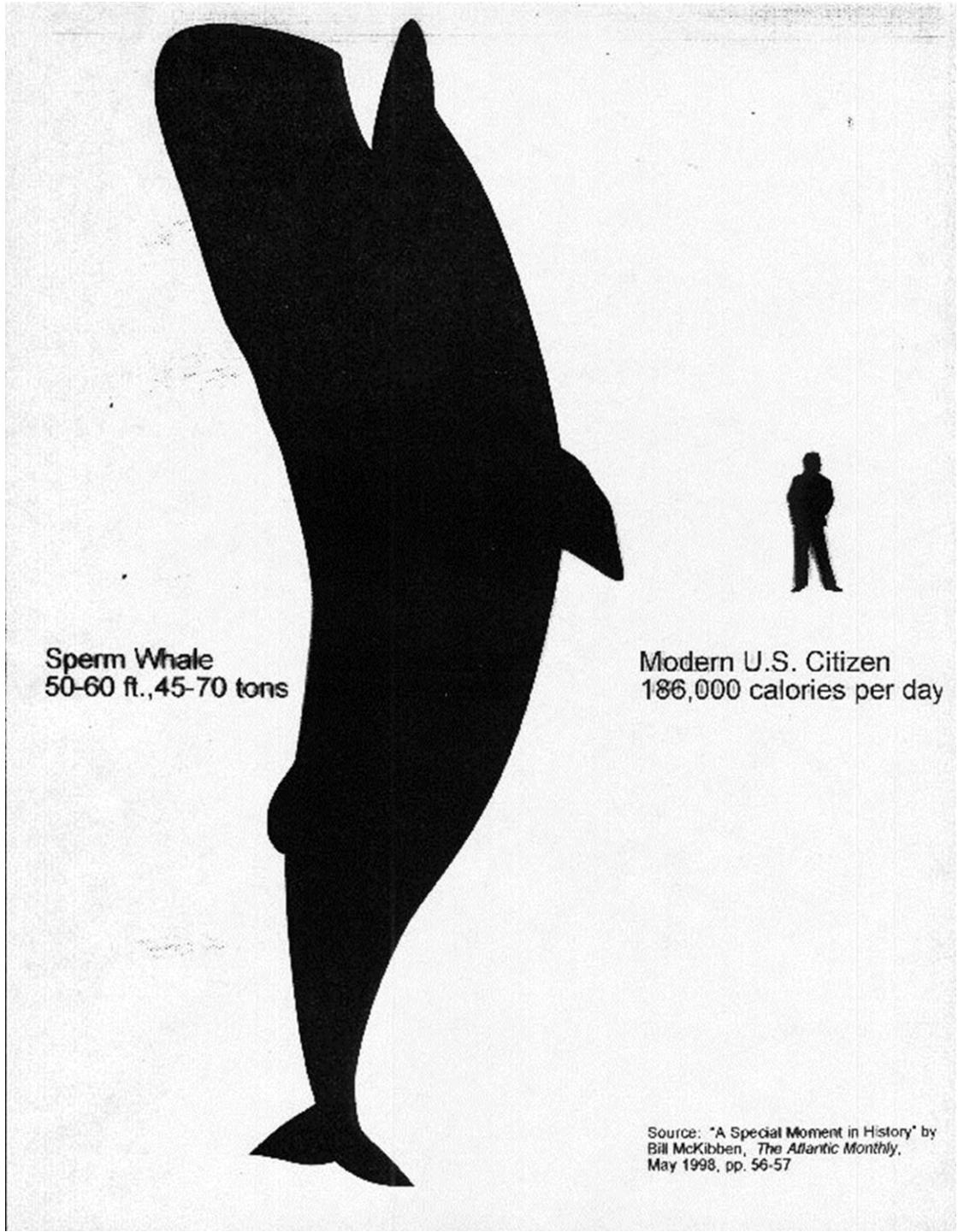
Hunter/Gatherer
2,500 calories per day



Modern day human
31,000 calories per day

Pilot Whale
12-15 ft., 6,000 lbs.

Source: "A Special Moment In History" by Bill McKibben, *The Atlantic Monthly*, May 1998, pp. 56-57

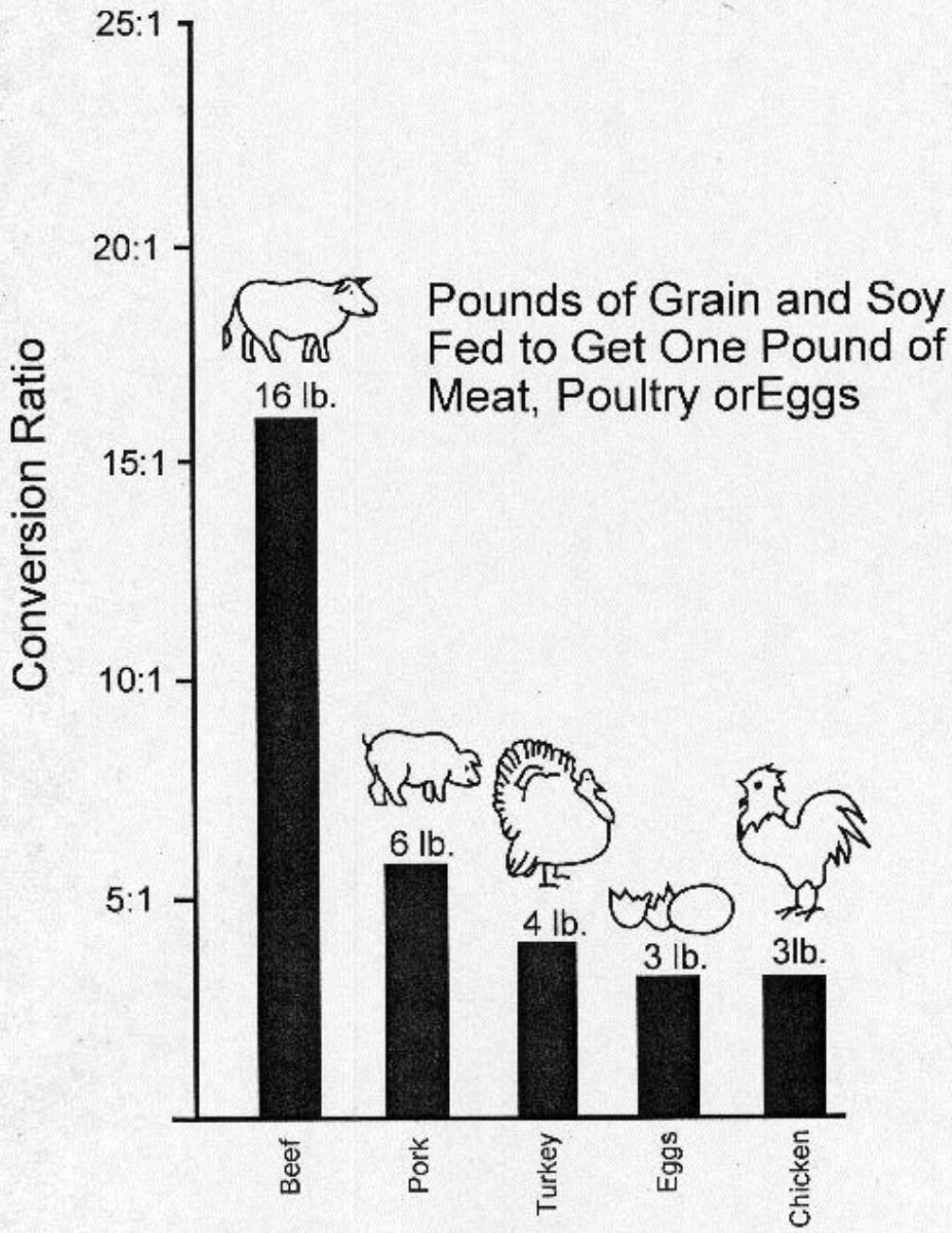


Sperm Whale
50-60 ft., 45-70 tons

Modern U.S. Citizen
186,000 calories per day

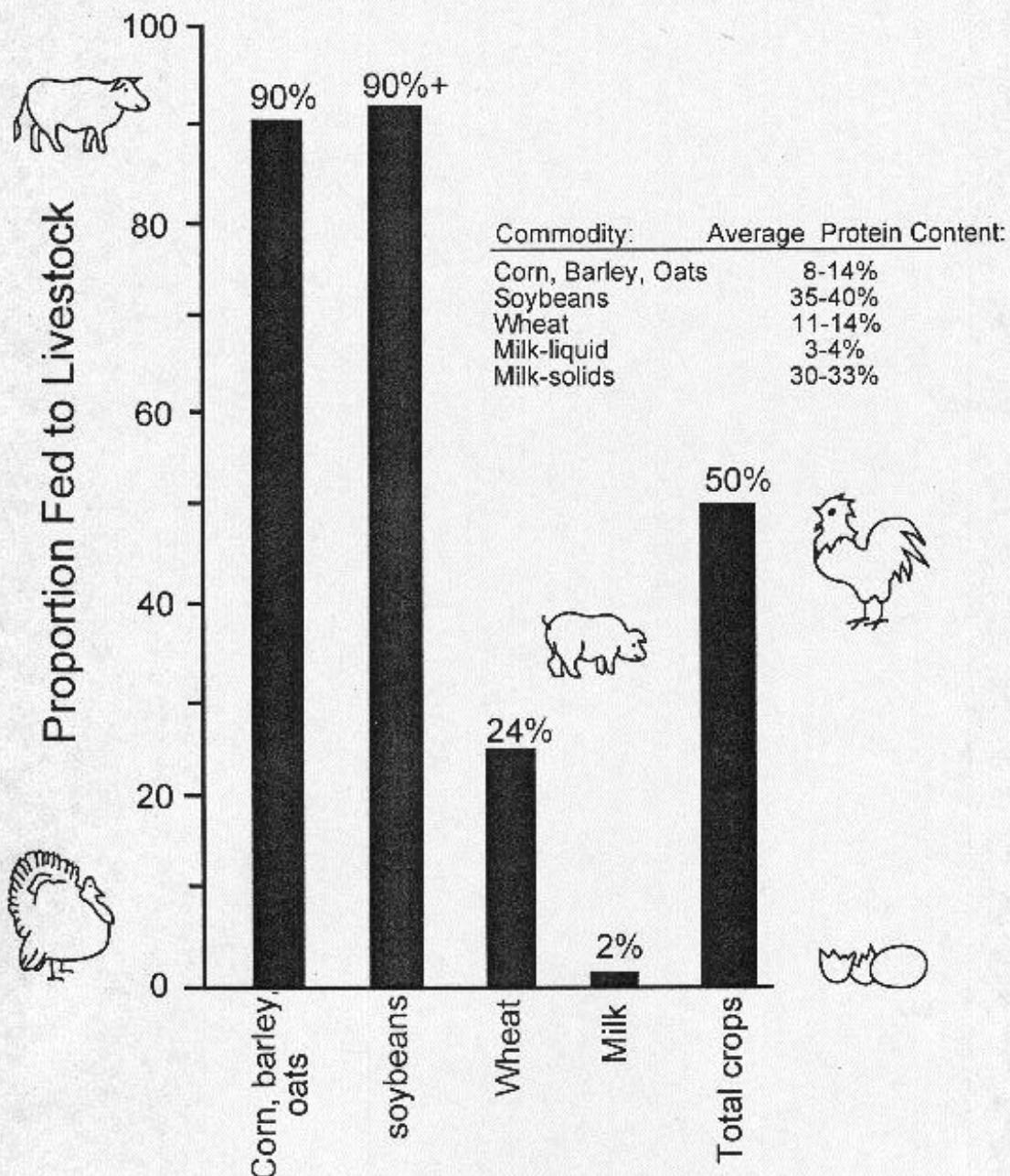
Source: "A Special Moment in History" by
Bill McKibben, *The Atlantic Monthly*,
May 1998, pp. 56-57

A PROTEIN FACTORY IN REVERSE



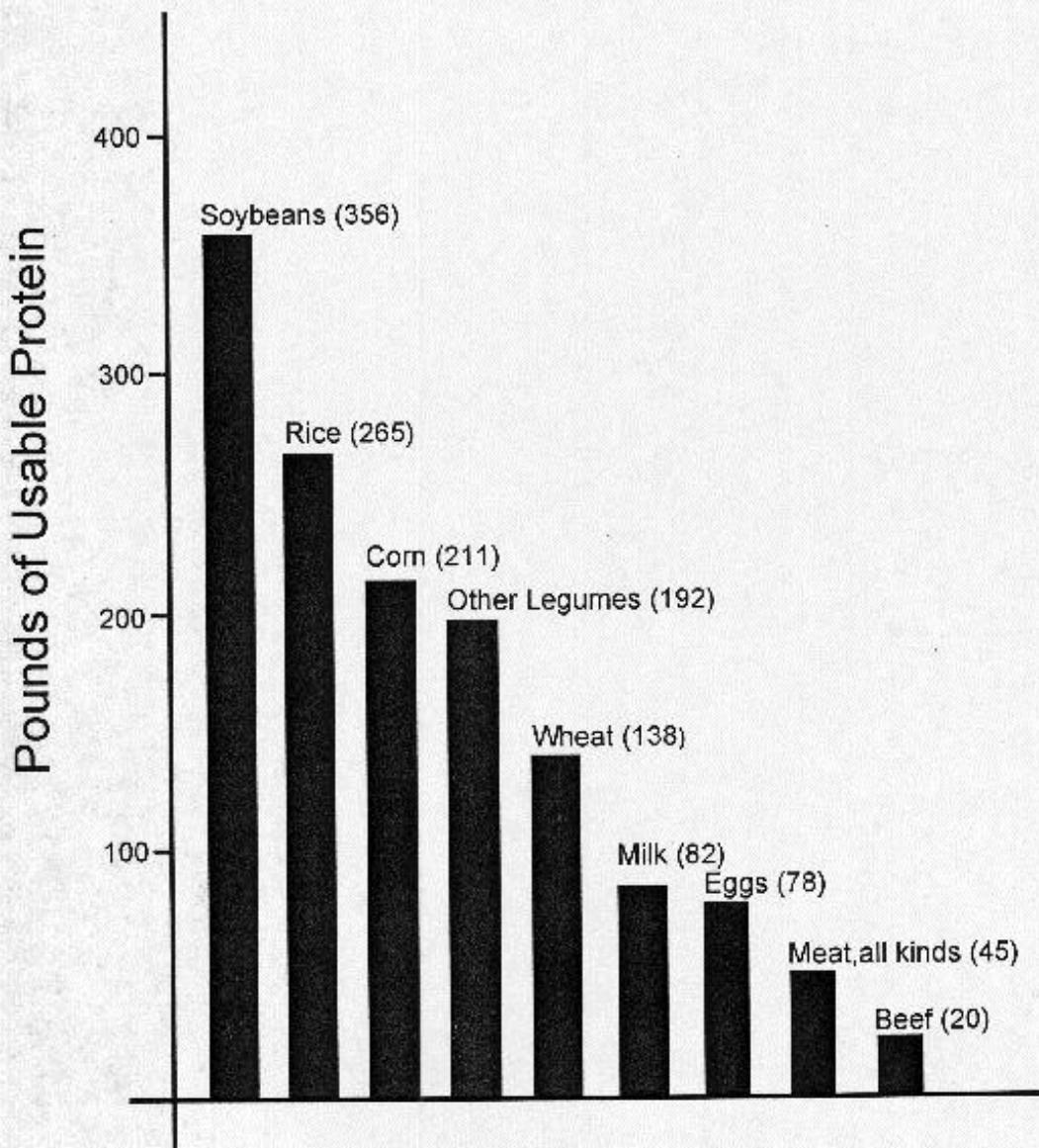
Source: USDA, Economic Research Service, Beltsville, Maryland

THE FATE OF U.S. PROTEIN RESOURCES



Source: *Diet for a Small Planet*, by Frances Moore Lappe, 1975, Published by Ballantine, p.13

PER-ACRE YIELDS OF USABLE PROTEIN FROM DIFFERENT FOOD SOURCES

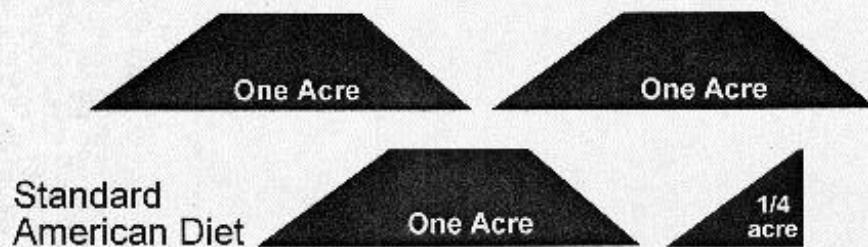


Source: Calculated from USDA per-acre yield statistics(1971-74)
and WHO/FAO/UNICEF Protein Advisory Group Bulletin #3, 1971

LAND USE AND FOOD CHOICES

3.25 acres of land

feeds one person on a standard American diet
("meat and potatoes")



**Standard
American Diet**

One Acre

One Acre

1/4
acre

1/3 of an acre of land

feeds one ovo/lacto vegetarian

Ovo/lacto
Vegetarian

1/3
acre



1/6 of an acre of land

feeds one vegan

vegan

1/6
acre

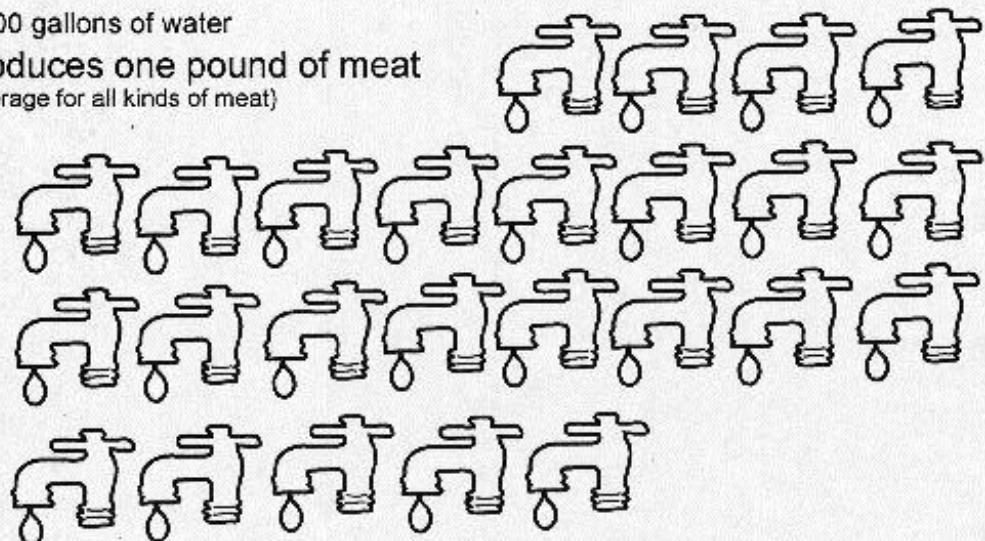


Source: *Diet for a Small Planet*, Tenth Anniversary Addition, by Frances Moore Lappe,
Published by Ballantine, 1982, p.69

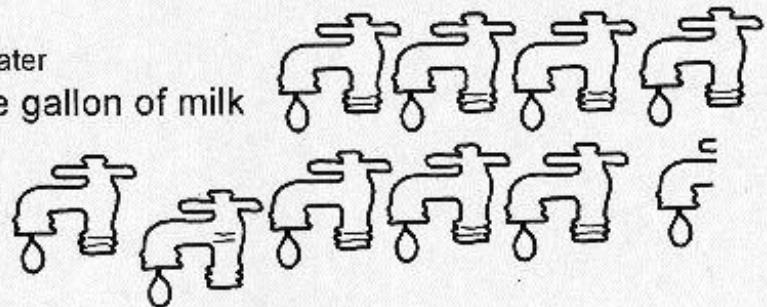
WATER USE AND FOOD PRODUCTION

One water faucet equals
100 gallons of water

2,500 gallons of water
produces one pound of meat
(average for all kinds of meat)



966 gallons of water
produces one gallon of milk



25-30 gallons of water
produces one pound of
wheat, potatoes or apples

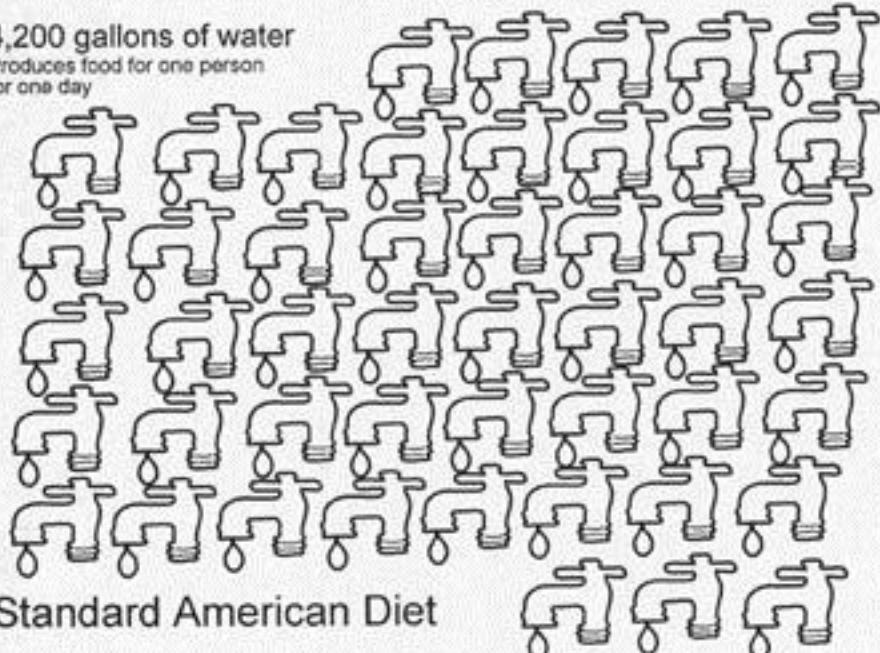


Source: *Population, Resources, Environment*, by Paul and Anne Ehrlich,
San Francisco, Freeman, 1972 pp.75-76

WATER USE AND FOOD CHOICES

One water faucet equals
100 gallons of water

4,200 gallons of water
Produces food for one person
for one day



Standard American Diet

1,200 gallons of water
Produces food for one
person for one day

Vegetarian

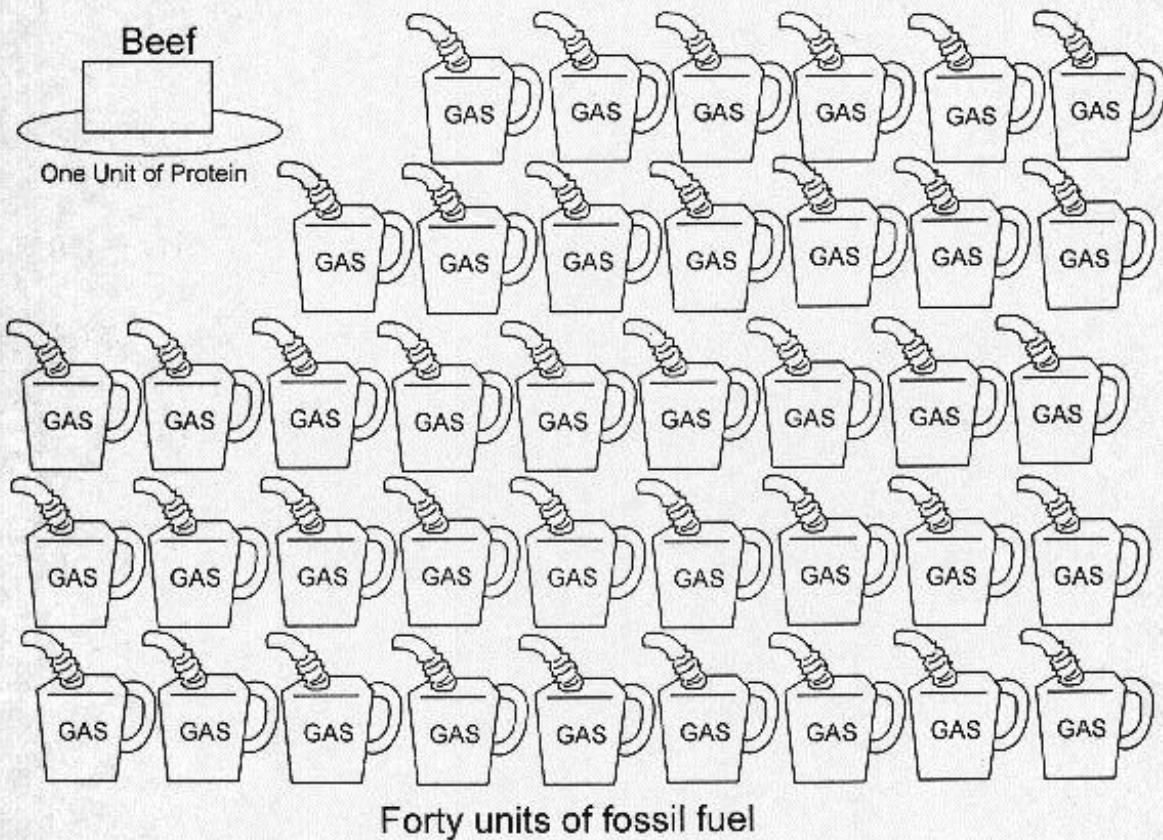


300 gallons of water
Produces food for one person one for one day
Vegan

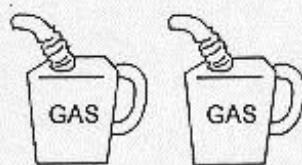
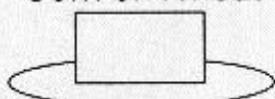


Source: *Proteins: Their Chemistry and Politics*, by Aaron Aitschul, Basic Books, New York, 1982, p.264

FOSSIL FUEL USED TO PRODUCE VARIOUS PROTEINS

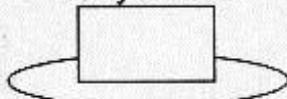


Corn or Wheat



Two units of fossil fuel

Soybeans



One unit of fossil fuel

Source: "Energy and Land Constraints in Food Protein Production", by David Pimental, *Science*, November 21, 1975

The Basic 12 Food Groups 1930

(USDA)



DAIRY PRODUCTS

POTATOES

LEAFY GREEN & YELLOW VEGETABLES

BUTTER



OTHER VEGETABLES & FRUITS

DRY PEAS

Eggs

MEAT, POULTRY & FISH



FLOUR & CEREALS

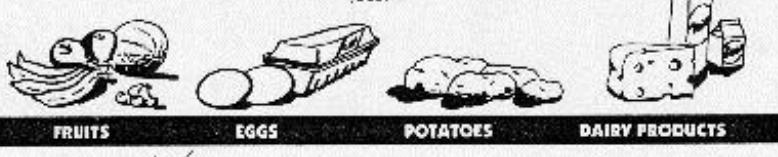
SUGARS

TOMATOES & CITRUS FRUITS

OTHER FATS

The Basic 7 Food Groups 1940

(USDA)



FRUITS

Eggs

POTATOES

DAIRY PRODUCTS



BREAD & CEREALS

MEATS, POULTRY & FISH

VEGETABLES

The Basic 4 Food Groups 1956

(USDA)



DAIRY PRODUCTS

MEAT, POULTRY & FISH

GRAINS

FRUITS & VEGETABLES

The New Basic 4 Food Groups 1991

(Physicians Committee for Responsible Medicine)



WHOLE GRAINS

VEGETABLES

LEGUMES

FRUIT

Meat, poultry, fish and dairy products are recommended for use as condiments only.

Energy, Protein and Greenhouse Gases

How much energy does it take to make a specific amount of food protein?

It depends...

If it is **beef**, for every one calorie of protein it takes **78 calories of diesel or gasoline**.

But if that same **one calorie** of protein is coming from grains—corn or wheat or oats—it takes only **TWO calories** of diesel or gasoline.

Protein from grains takes **only 5%** of the **fossil fuel energy** needed for beef protein. And that also means that obtaining your protein in this way produces less than **5% of the green house gases and other pollutants** that are produced for beef.

(It's **less** than 5% because cows emit methane in addition to all the CO₂ produced by burning fossil fuel in the name of producing beef. As a greenhouse gas, methane is 24 times more destructive than carbon dioxide.)

And if you got the same amount of protein from **soy beans**, we are looking at **only 2.5%** of the fossil fuel energy—and greenhouse gases—relative to what is associated with beef production.

(Source: David and Marcia Pimental, *Food, Energy, and Society*, London: Edward Arnold, 1979, page 59; David Pimental, et al, "Energy and Land Constraints in Food Protein Production," *Science*, 21, November 1975.)

A study at Ohio State University found that **the most efficient animal source foods** only **returned 34% of the fossil fuel energy** invested in them in the form of food energy for us.

On the other hand, **the least efficient plant foods returned 328% of the fossil fuel energy** invested in them as food energy to us. **Plant foods are more than 10 times more energy efficient** to produce than animal foods. Why? **Plants are solar powered, animals are not.**

(Source: Roller, W.L. et al, "Energy Costs of Intensive Livestock Production," American Society of Agricultural Engineers, June 1975, St. Joseph, Michigan, paper no. 75-4042, table 7, page 14, cited in Singer and Mason, *Animal Factories*, note 54. Also in John Robbins, *Diet For A New America*, page 376.)

"Over 51% of all worldwide annual green house gas emissions are due to livestock (cattle, pigs, chickens)."

(Robert Goodland and Jeff Anhang, "Livestock and Climate Change," *World Watch*, November/December, 2009, pp. 10-19.)

"The cattle population of the Earth weighs more than the entire human population. In 1992, there were 1.28 billion cattle on the Earth, taking up nearly 24% off the land mass of the planet."

(Jeremy Rifken, *Beyond Beef*, Dutton, 1992, p. 1)

Greenhouse Gas Calculations

World Watch Institute estimates that more than 51% of all human caused greenhouse gas emissions are the result of the livestock industry.

("Livestock and Climate Change," Robert Goodland and Jeff Anhang, *World Watch*, November/December 2009, pages 10-19. See www.worldwatch.org/ww/livestock).

The United Nations Food and Agriculture (FAO) estimated, in a widely cited report, that this figure is "only" 18%, which is still enormous. ("Livestock's Long Shadow," 2006). Why is often-quoted United Nations figure so much lower? Investigation reveals a number of undercounted and unreported kinds of emissions. Let's look at them.

1. Livestock breathe out carbon dioxide. The UN does not count this. Today, there are tens of billions more livestock exhaling CO₂ than in pre-industrial days. CO₂ from livestock breathing accounts for 21% of human caused greenhouses gases world-wide.

- 2.The United Nations estimate does not count the greenhouse gas REDUCTIONS that are LOST each year by using 26% of land world wide for grazing livestock and 33% of arable land used for growing livestock feed, rather than allowing it to regenerate as forest.

- 3.Livestock produce methane, which is a more potent greenhouse gas than CO₂. The United Nations calculations were made based on methane being 25 times more powerful as a green house gas than CO₂. However, more recent research pegs the actual figure as showing that methane is really 72 times more powerful as a greenhouse gas than CO₂.

- 4.The United Nations omits factory farmed fish from its definition of livestock.

- 5.The UN calculation leaves out fluorocarbons, which are *several thousand times more powerful* than CO₂ as greenhouse gases.

Livestock products need much more refrigeration than plant-food products.

- 6.Cooking is also not counted by the UN, and meat requires higher temperatures and longer cooking than plant foods. In developing countries, this cooking uses large amounts of charcoal, which produces CO₂ and reduces carbon absorption due to cutting down trees to make charcoal.
- 7.Disposal of large amounts of livestock waste (bone, fat, spoiled products) in landfills, incinerators, and waterways emits large amounts of greenhouse gases not counted by the UN.
- 8.The UN did not count greenhouse gas emissions associated with animal by-products such as leather, fur, and feathers.

9. The UN did not count greenhouse gases associated with the production, distribution, and disposal of packaging for livestock products. Use of packaging (plastic wrap, Styrofoam, etc.) is much more extensive for livestock products.
10. The UN did not consider all the carbon that is put into the atmosphere from treating livestock-caused diseases such as swine flu, heart disease, cancer, diabetes, and strokes.

Things are getting worse, not better in this area. While global human population is projected to increase 35% in the next 40 years, the livestock population is projected to increase by 100%. Thus their contribution to climate change will become even greater—unless we act to change things now by altering our personal food choices.

(Preceding information is from "Livestock and Climate Change," Robert Goodland and Jeff Anhang, *World Watch*, November/December 2009, pages 10-19. See www.worldwatch.org/ww/livestock)