

Do it All for the Glory of God:

Eating and Living for a Healthy Climate



*"So whether you eat or drink or whatever you do,
do it all for the glory of God."*

-1 Corinthians 10:31

Suzanne Jones

Montclair Presbyterian Church

November 15, 2022

What can we do to respond to the climate crisis and leave today's young people a livable planet?

- Protect strong democratic institutions and voting rights.
- Enact swift and bold policies to phase out fossil fuels and other sources of GHG emissions.
- Reduce our individual and community carbon emissions and lead by example.

Average per-capita greenhouse gas emissions (tons CO2-eq)* by region.

Sub-Saharan Africa	1
South Asia	2
Latin America	3
East Asia	7
Europe	7
United States	~19
Montclair, CA	32

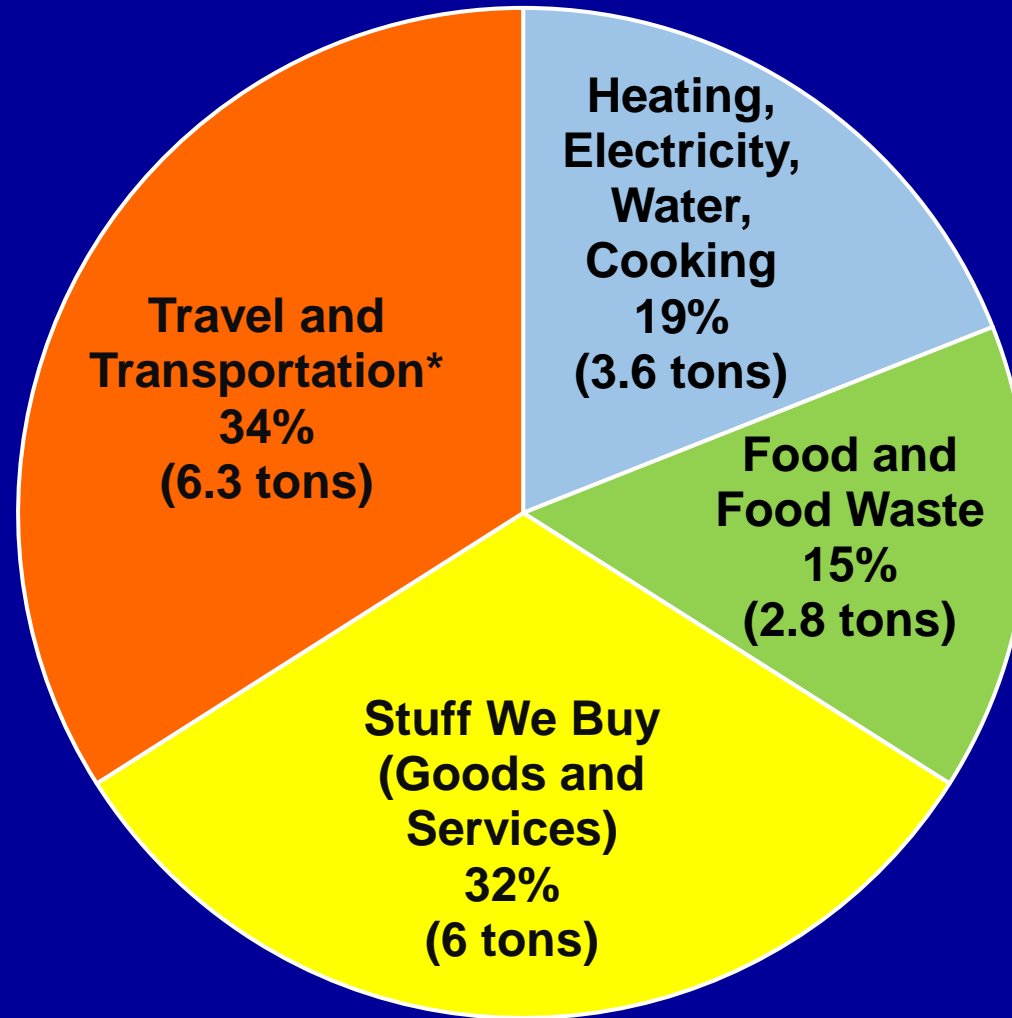
“Tons CO2-eq” represents the warming effect of *all* anthropogenic greenhouse gasses including carbon dioxide (CO2), methane, nitrous oxides, etc., expressed as the quantity of CO2 that would cause an *equivalent* degree of warming.

Data from www.coolclimate.org and www.data.worldbank.org.

Carbon footprint of the average American.

To avoid the worst effects, greenhouse gas emissions must be cut **50% by 2030** and to **zero by 2050**.

The U.S. has emitted the most—25% of the cumulative total—and should reduce the most, esp. U.S. corporations and the affluent.



~19 tons CO₂-eq/yr.

Humans have complex relationships with food....

It is deeply connected to our emotions, habits and identities:

- Comfort and familiarity
- Health and well-being
- Creativity and self-expression
- Communication of love to and from others
- Family traditions, cultural traditions



It can be difficult and even painful to change such deeply held practices.

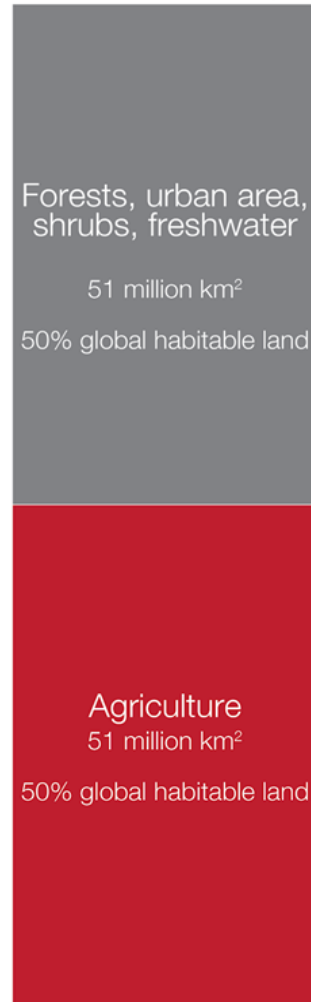
We *can* harmonize our food-related needs with leaving behind a livable planet—and still be healthy and well fed!

What are the environmental impacts of food and agriculture?

Greenhouse Gases
26% of global
greenhouse gas emissions



Land Use
50% of global habitable
(ice and desert-free) land



Freshwater Use
70% of global
freshwater withdrawals



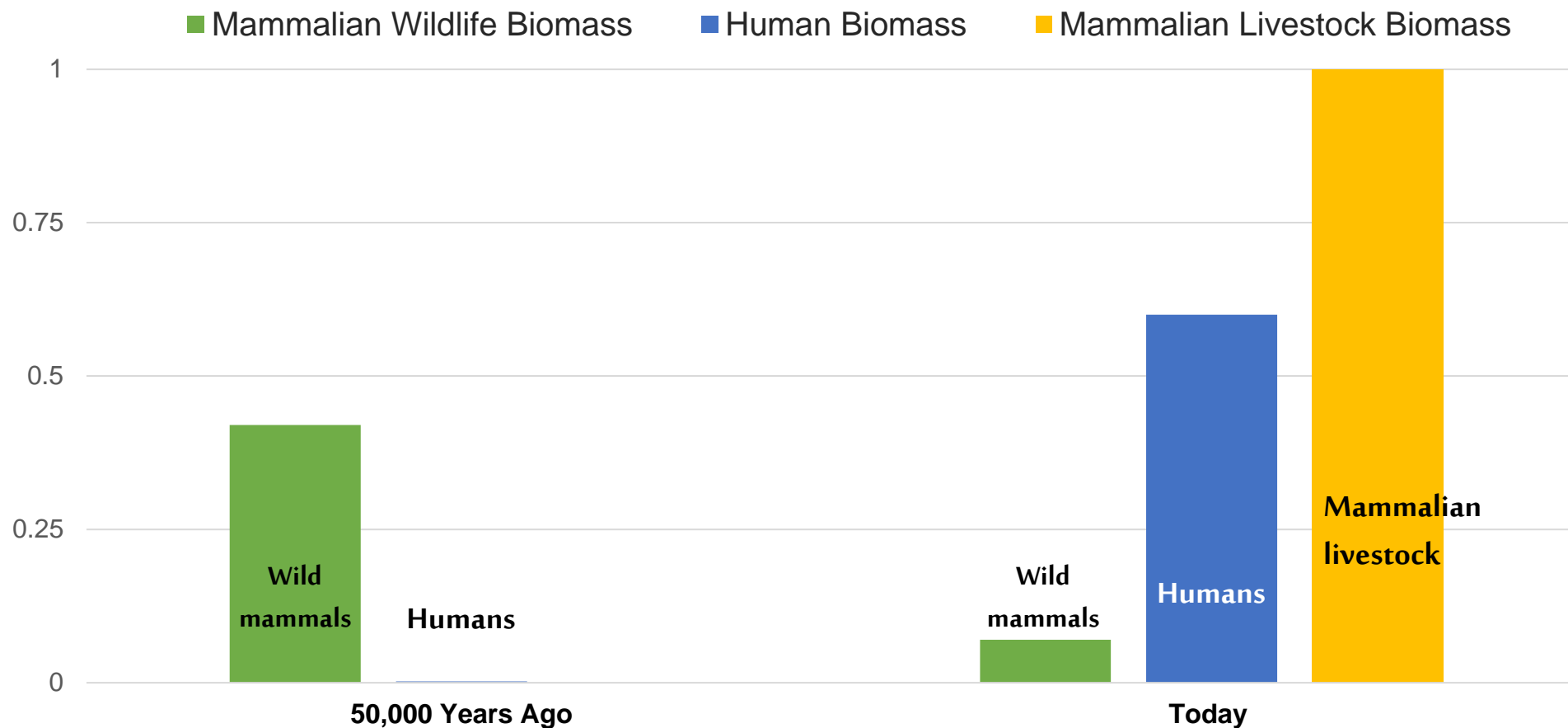
Eutrophication
78% of global ocean
& freshwater pollution



Biodiversity
94% mammal biomass
(excluding humans)

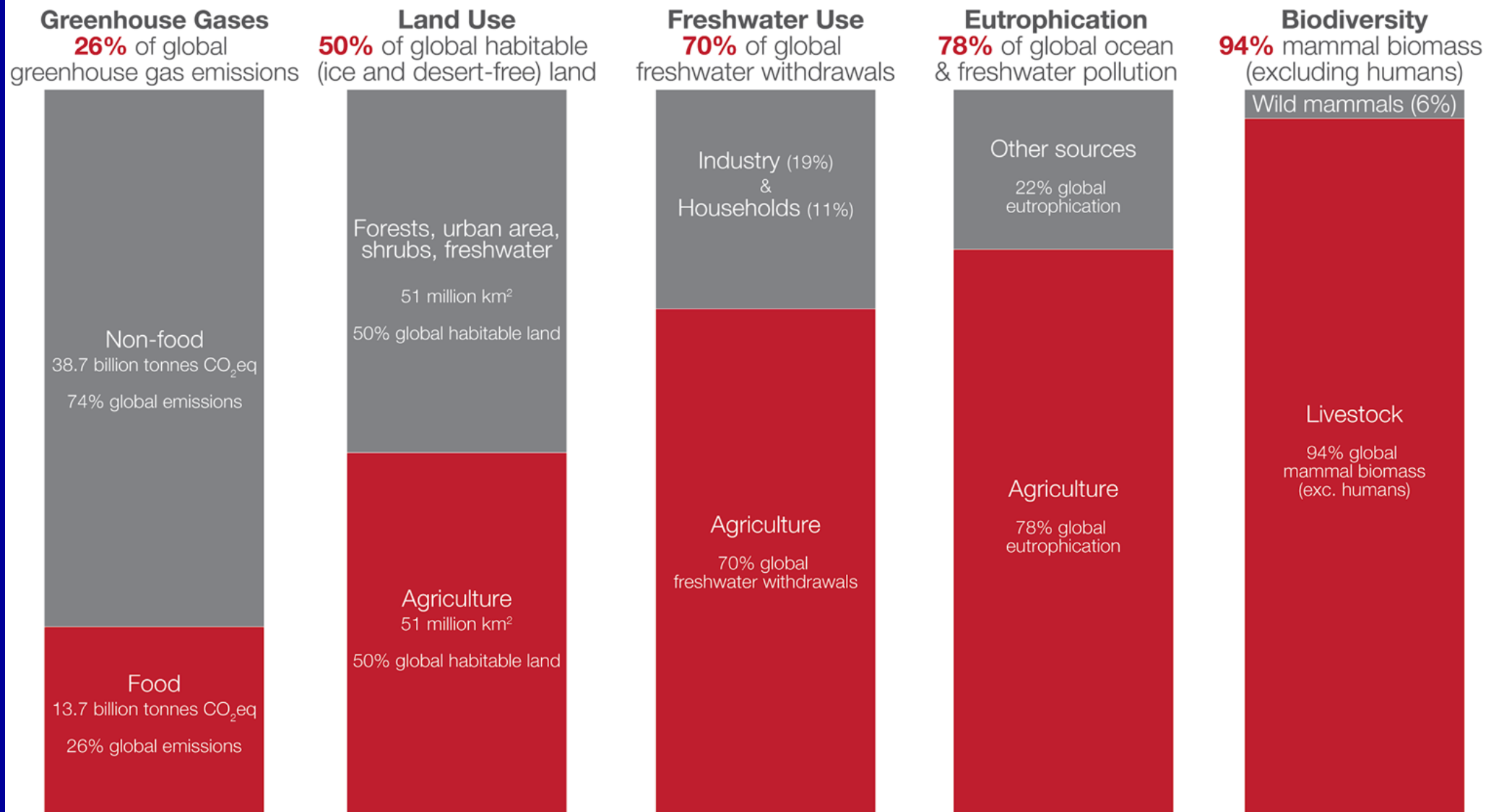


Relative biomass of livestock, humans and mammalian wildlife ~50,000 years ago and today.



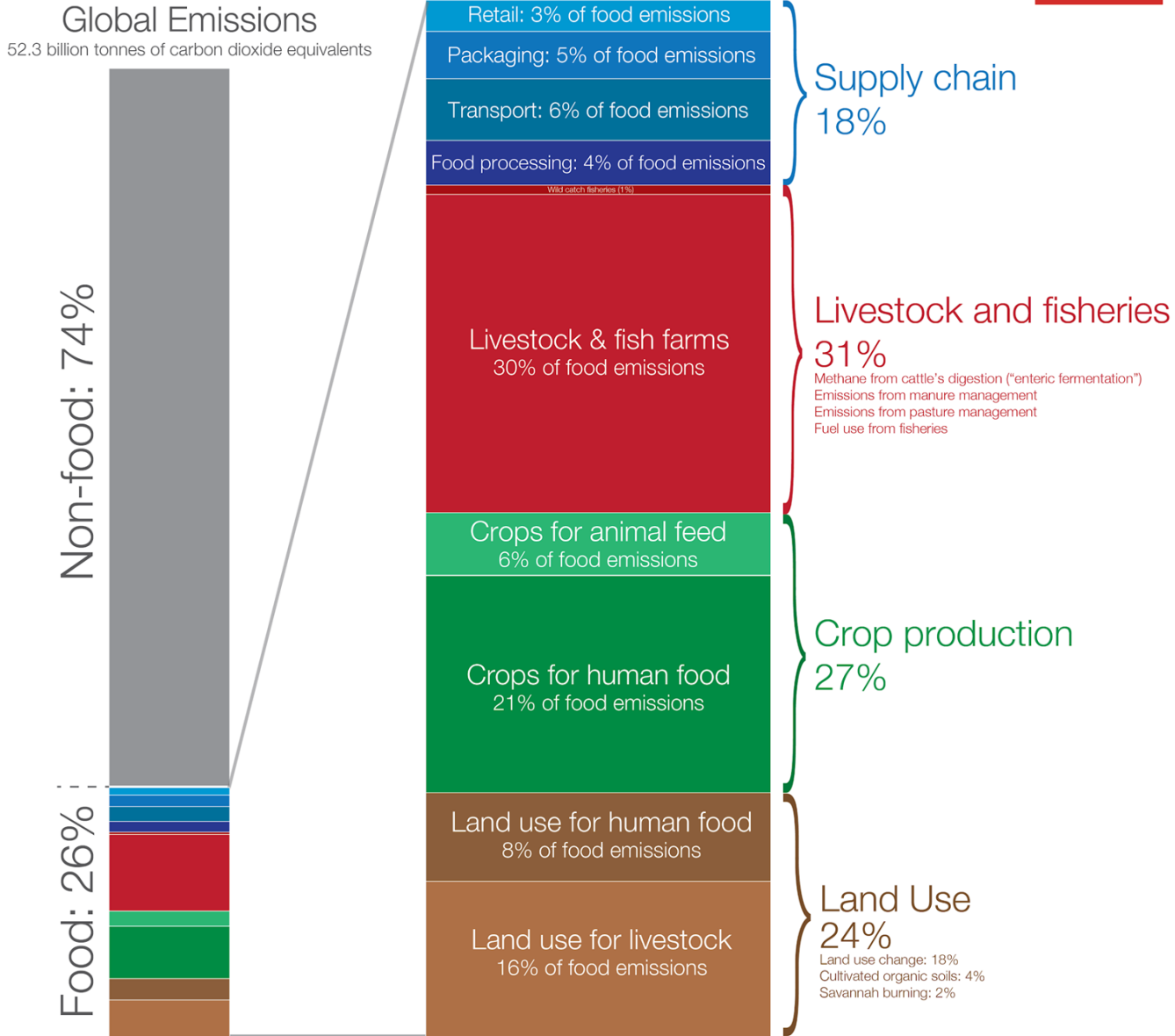
Data from: Y. M. Bar-On, R. Phillips and R. Milo, *Proceedings of the National Academy of Sciences*, June 19, 2018 115 (25) 6506-6511

What are the environmental impacts of food and agriculture?



Global greenhouse gas emissions from food production

Our World
in Data



- Deforestation for crops/grazing land releases CO₂.
- Fossil fuels are burned to grow & process crops for humans and livestock.
- Fossil fuels are burned to produce pesticides/herbicides.
- Tillage releases CO₂ from the soil.

The cumulative emissions from all these stages accrue to foods we eat, and are more “concentrated” in animal foods.

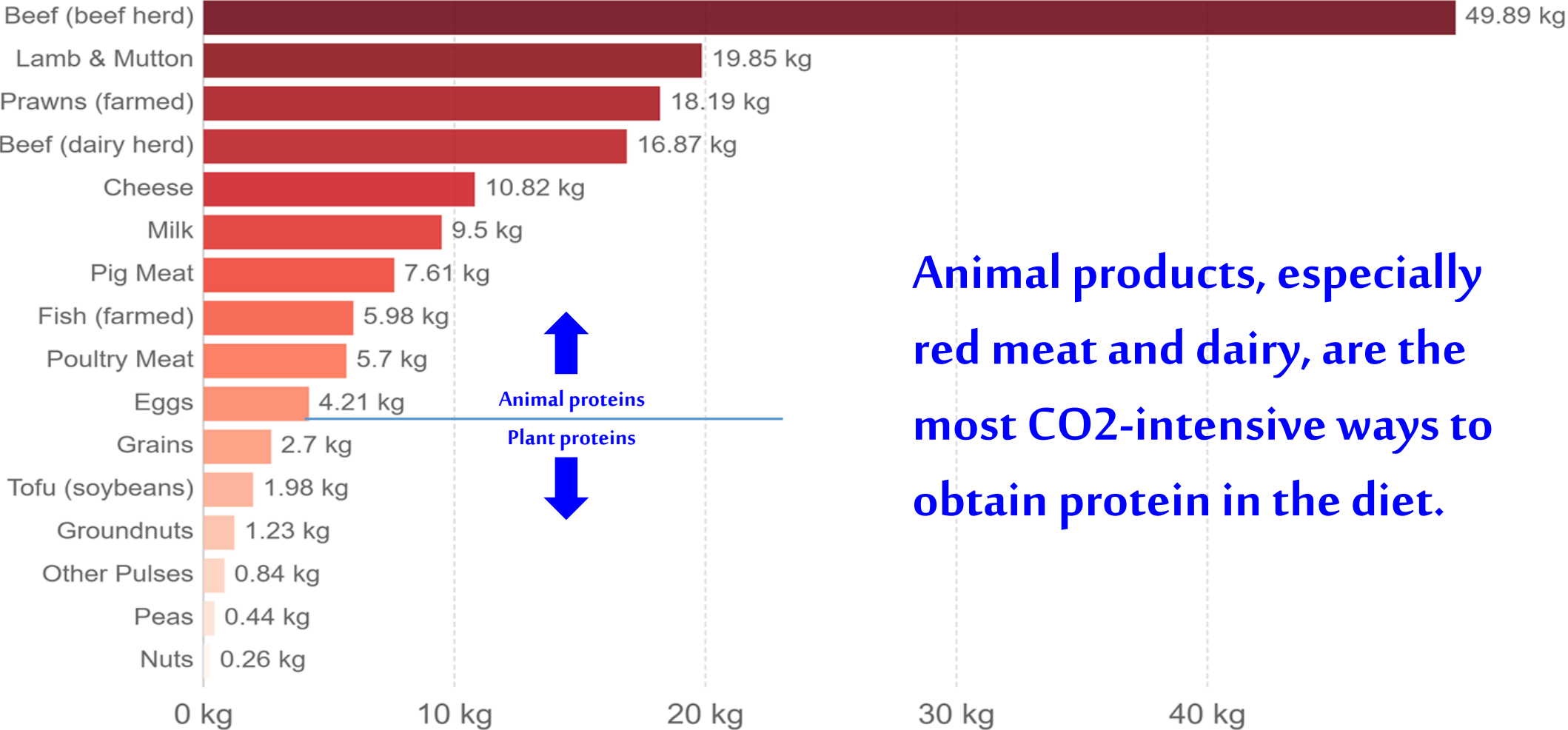
Animal agriculture accounts for ~52% of food production’s greenhouse emissions.



The dominant factor determining our dietary greenhouse gas emissions is what we choose to eat for **protein.**

Greenhouse gas emissions per 100 grams of protein

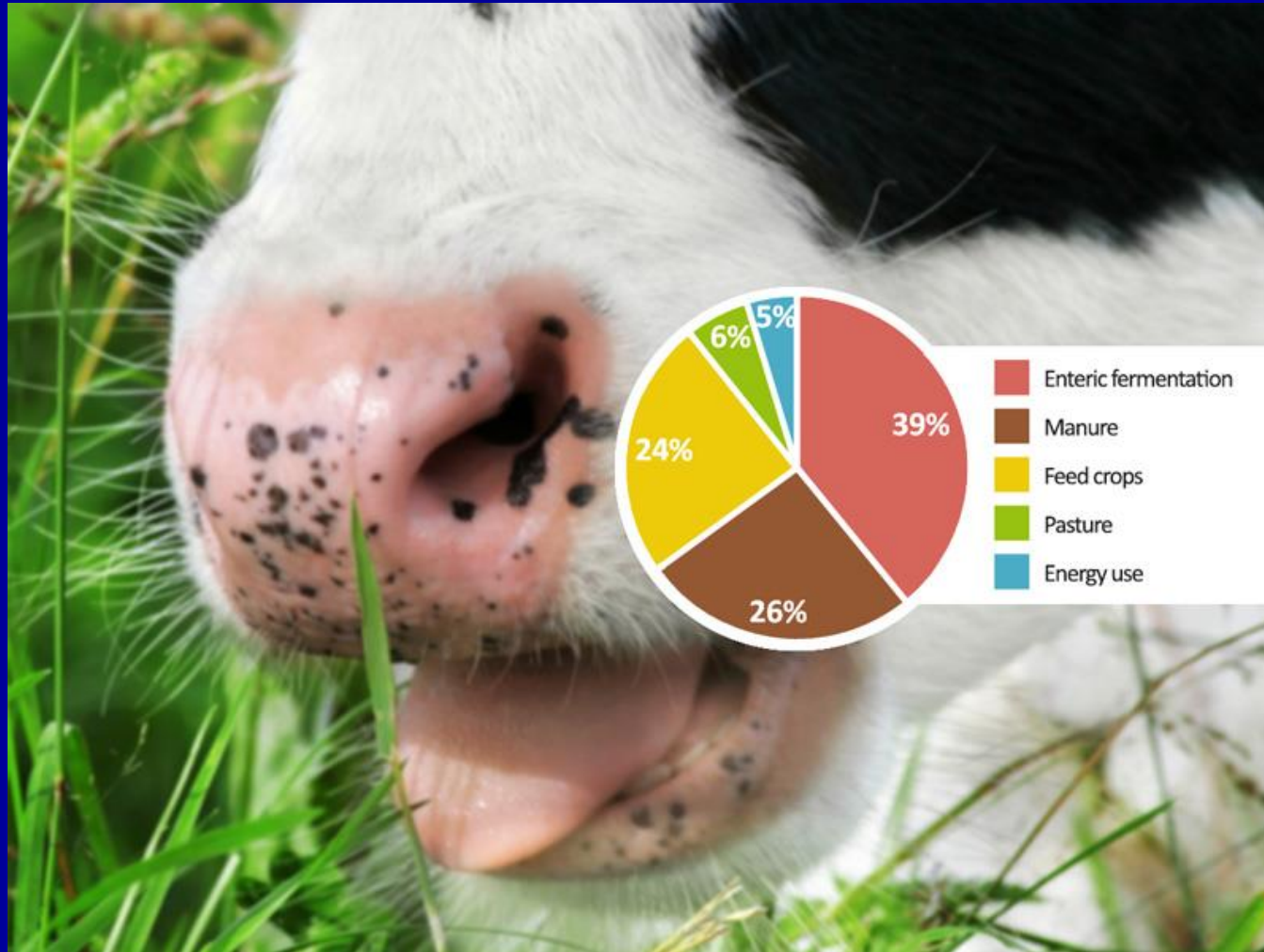
Greenhouse gas emissions are measured in kilograms of carbon dioxide equivalents (kgCO₂eq) per 100 grams of protein. This means non-CO₂ greenhouse gases are included and weighted by their relative warming impact.



Animal products, especially red meat and dairy, are the most CO₂-intensive ways to obtain protein in the diet.

Source: Poore, J., & Nemecek, T. (2018). Additional calculations by Our World in Data.
 Note: Data represents the global average greenhouse gas emissions of food products based on a large meta-analysis of food production covering 38,700 commercially viable farms in 119 countries.
 OurWorldInData.org/environmental-impacts-of-food • CC BY

Why do red meat & dairy products (cattle, sheep, bison, goats) have such high greenhouse gas emissions?



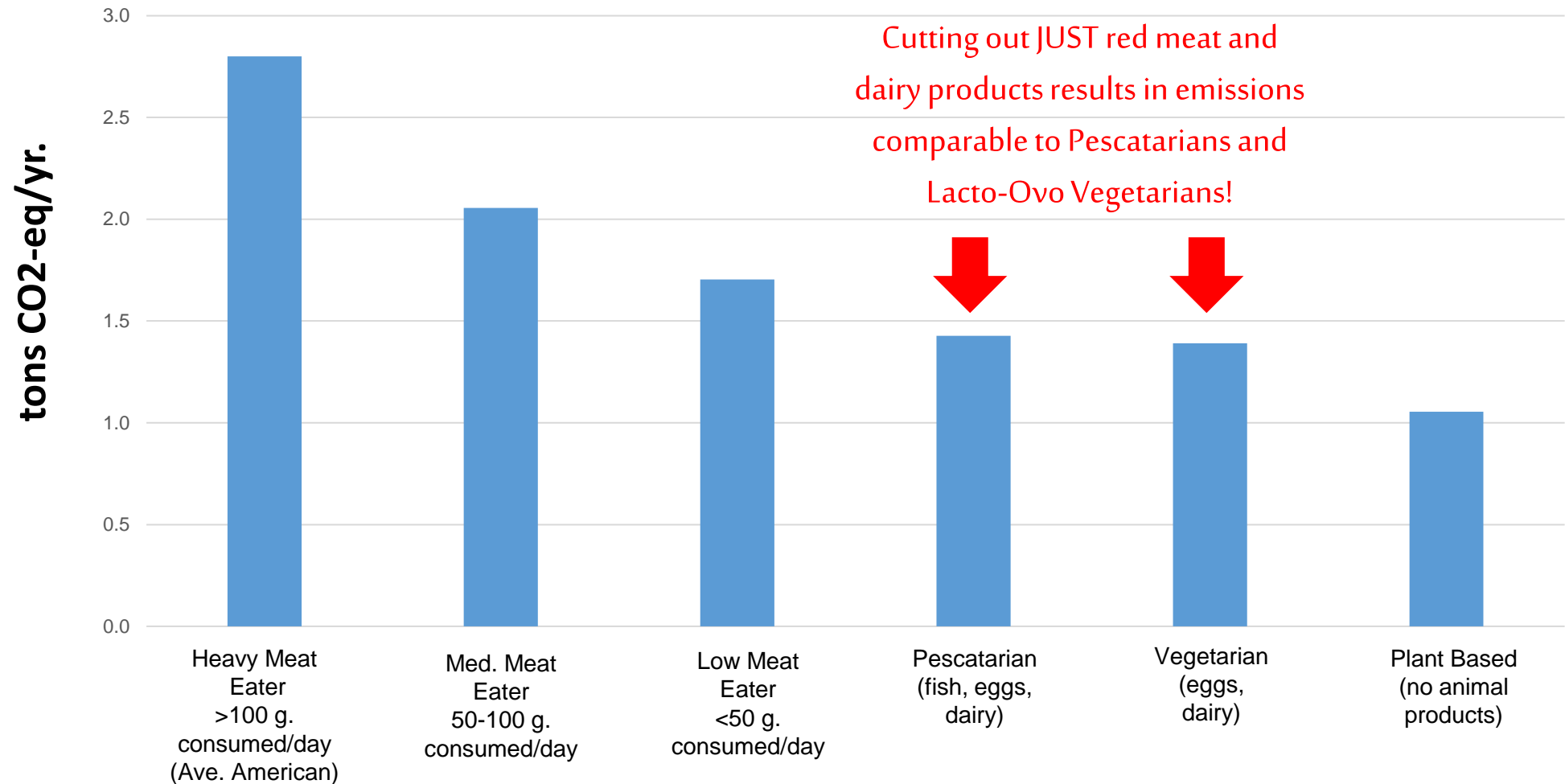
Ruminant animals digest high-fiber plants using enteric fermentation.

Enteric fermentation causes them to exhale methane (CH₄), an 80-times-stronger greenhouse gas than CO₂.

Ruminant waste emits CH₄ *and* nitrous oxide (N₂O) a 300-times-stronger greenhouse gas than CO₂.

Hence, ruminant foods (red meats and dairy) disproportionately emit greenhouse gases relative to birds, pigs, etc. and of course plants!

Greenhouse gas emissions of various diets.



Scarborough P, et al. Dietary greenhouse gas emissions of meat-eaters, fish-eaters, vegetarians and vegans in the UK. *Clim Change*. 2014;125(2):179-192. doi:10.1007/s10584-014-1169-1

But how else can we meet protein requirements?

Adults need ~0.8 grams of protein per kilogram of body weight.

(More or less depending on age, exercise, etc.)



Carl Lewis, vegan,
9-time Olympic gold
medalist

This translates to an average of ~50-60 g protein per day per person.

Let's look at the relative emissions of various ways of meeting that requirement...

Five ways to eat 60 g of protein:

	Example 1: Red Meat	Example 2: Poultry/Pork	Example 3: Lacto-Ovo Vegetarian	Example 4: Ovo Vegetarian	Example 5: Plant-Based
	8-oz steak	4.5 oz chicken breast	2 eggs	2 eggs	¼ c. almonds
		5 oz pork chop	1 c. cooked oatmeal	1 c. cooked oatmeal	1 c. cooked oatmeal
			2.5 oz cheese	1 c. cooked beans	1 c. cooked beans
			1 c. cooked brown rice	1 c. cooked brown rice	1 c. cooked brown rice
			1 c. cooked lentils	1 c. cooked lentils	1 c. cooked lentils
					¼ c. sunflower seeds
Total Protein	~ 60 g	~ 60 g	~ 60 g	~60 g	~60 g
CO2-e emissions	30 kg CO2-e	4 kg CO2-e	3 kg CO2-e	1.2 kg CO2-e	0.8 kg C

What about grass-fed beef and regenerative grazing practices?

The data show that emissions from **grass-fed beef** are no better than grain-fed.

Emissions avoided by not growing grain for cattle are offset by other factors:

- Slower growth rates ➡ cattle kept alive longer, emit longer
- Eating grass (a humane diet for cattle) causes them to produce *more* methane than eating grain (an unhealthy/inhumane diet for cattle)



What's the hype about "regenerative grazing" to restore grasslands & sequester CO2 in soils? (e.g. the film *Kiss the Ground*)



These grazing techniques can help restore grasslands in some situations, but:

- A *net* reduction in emissions has **not** been demonstrated by existing data.
- Estimated to require 30% more cattle and 4X more land to supply current production.
- Ramp up would require decades; reducing red meat consumption **now** instantly cuts emissions.

Grass-fed/regenerative meat is definitely more *humane* than conventional meat.

Eating it occasionally if desired (e.g. Christmas dinner) can have negligible impact on an otherwise low-emissions diet.

What about fish?

There's a WIDE range in emissions from fish depending on species and fishing/farming method so it's hard to generalize.



Photo by [Gregor Moser](#) on [Unsplash](#)

Roughly speaking:

- Wild caught fish *tends* to have *lower* emissions
(*exceptions*: crab, lobster, some oysters & prawns are very high)
- Farmed fish *tends* to have *higher* emissions
(*exceptions*: farmed mussels, clams, one CA trout farm mcfarlandsprings.com)
- Farmed prawns are environmentally terrible in every way.

Meanwhile...

Ocean ecosystems are very stressed
(overfishing, pollution, acidification from CO2 emissions)

A lot of fish farming is causing big environmental impacts
(pollution, harm to wild fish populations)



Photo by [Gregor Moser](#) on [Unsplash](#)

Choosing fish that minimizes *both* carbon emissions and other environmental impacts takes some effort. Two useful resources:

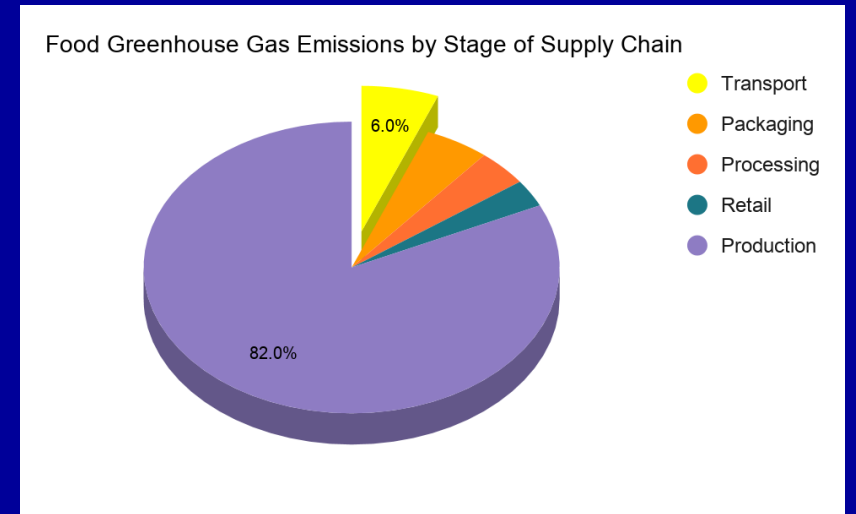
seafoodCO2.dal.ca Find options with low CO2 emissions per unit of protein.

seafoodwatch.org Cross reference to check other environmental impacts.

Does buying local food significantly reduce its carbon footprint?

Transportation accounts for 6% of the average food's greenhouse gas emissions.

Most imported food is transported by **ship**, which is relatively fuel efficient.



Production, not transport, dominates most foods' carbon footprint, so what we eat is usually a much bigger factor than where it came from.

Example: average CA beef has only 1% lower emissions than beef from Australia.

Yes, DO buy local ! (But not as a major way to reduce carbon emissions.)

One exception: Air-freighted foods

Transporting a food *by air* adds significantly to its carbon footprint!

Very perishable foods (e.g. imported berries, asparagus, green beans, etc) are typically flown.

(Fortunately, air-freighted foods account for only 0.16% of food transport miles.)

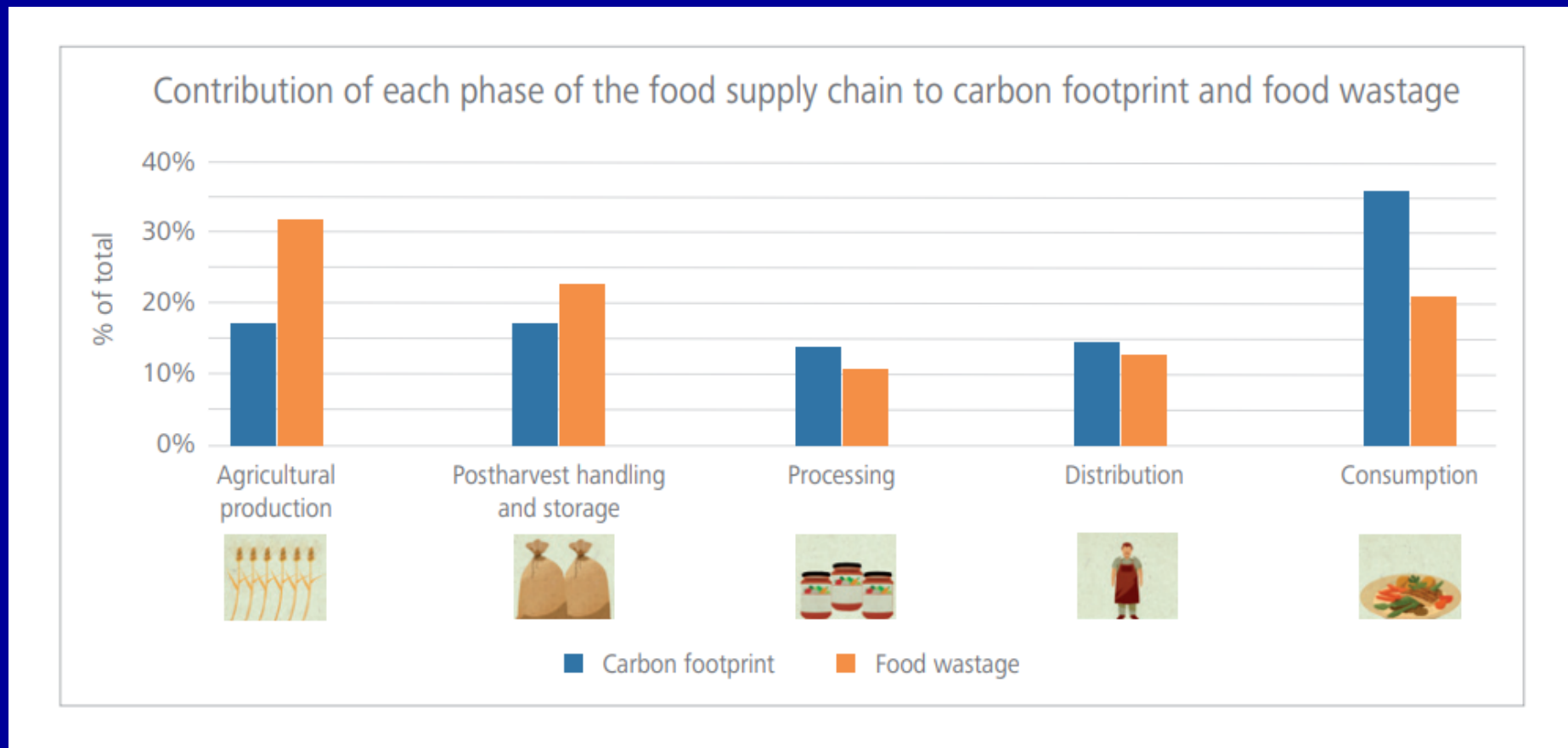


For very perishable foods,
buy local in season to avoid
air-freighted foods.

Food waste is a major contributor to climate change.

40% of food in the U.S. is wasted.

30% wasted worldwide—8% of global emissions—more than the total emissions of India!



We can reduce our food waste:

Plan ahead to avoid over-buying (beware of Costco!)

Take home & eat restaurant leftovers. BYO container to the restaurant.

Buy the ugly produce to save it from being tossed!

Don't over-rely on "use-by", and "best-by" dates. There's no standard for these labels; many foods are safe to eat long after the dates have passed.

Don't let food spoil.

Promptly donate extra food to the food bank.

When you must throw food away, put it in the green bin or compost it yourself. Keep out of the landfill to prevent methane emissions.



Actions that quickly slash per-capita GHG emissions:

Switch to **low-CO2 diet** and **cut waste**

(cut back red meat & dairy,
eat mostly plant-based)

➔ AVOIDS ~ 2.0 tons/yr/person



Enroll in 100% **renewable electricity**

(OR install **rooftop solar**)

➔ AVOIDS ~ 2 tons/yr/person



Replace average gas car with **electric car**

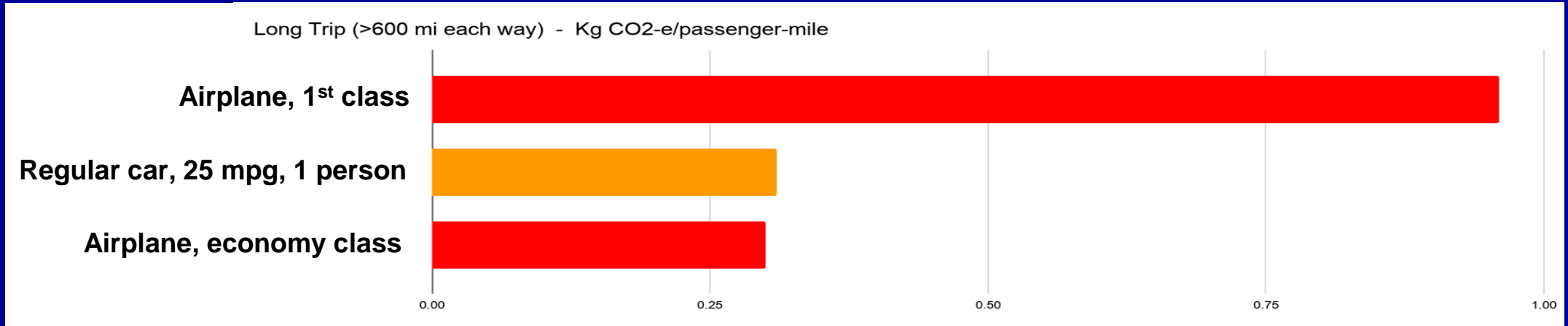
➔ AVOIDS ~ 5 tons/yr



These 3 actions alone cut the average American carbon footprint in half!

A few words about air travel:

Flying economy class emits about the same CO₂-eq per passenger-mile as driving a car. (First class is 3x worse.)



The average American drives 13,000 miles over the course of an entire year.

The same distance as one round trip flight from CA to Europe and the same CO₂-eq emissions, about 5 tons.

In less than 1 day of flying, we can emit as much CO₂ as we would in a year's worth of driving and hardly notice.

Carbon offsets are not a solution. For now, the only truly effective way to reduce flying emissions is to fly less.

Calculate your carbon emissions at:

www.coolclimate.org/calculator



What can churches do?

- 
- Protect strong democratic institutions and voting rights.
 - Enact swift and bold policies to phase out fossil fuels and other sources of GHG emissions.
 - Reduce our individual and community carbon emissions and lead by example.

MPC's Climate Call to Action

Drafted by its Earth Care Committee and adopted by the Congregation in April, 2021.

Implementation covers seven areas:

- Food and Food Waste
- Democracy, Voting Rights and Policy
- Renewable Power and Electrification
- Fossil-Free Banking and Investing
- Transportation and Travel
- Plastics
- Climate Care and Spirituality

CLIMATE CALL TO ACTION
Peace and Social Justice Committee Endorses 1/28/2021, Session Approved 2/2/2021

INTRODUCTION:

In its recent overture to the San Francisco Presbytery and the PCUSA General Assembly, the MPC Session declared:

"Climate Change is the existential crisis of our time. Today we are seeing the early signs of an impending global calamity - rising seas, record-breaking heat waves, major fire events, devastating storms and severe habitat loss. Increasingly, millions of people, especially poor people in the developing world, are losing their homes, their incomes and even their lives."

The COVID-19-induced economic downturn is projected to reduce global greenhouse gas emissions by 8% in 2020. Climate science tells us that to avoid irreversible and catastrophic temperature increases, the world must continue to reduce its emissions by another 8% annually for the next eight years: a tremendous task requiring all our effort.

As the climate crisis unfolds, we cannot be in denial. For the global community, including our own children and grandchildren, we must act and act boldly. As we consider possible actions, we recall the spiritual imperatives of our faith: the Bible tells us that Earth is God's creation and calls us to be its stewards. We cannot continue to abuse it, but must acknowledge our complicity in Earth-damaging behaviors and commit to changing them.

RECOMMENDATIONS:

To our MPC members, friends, and church community as a whole, we strongly endorse the following actions:

1. Transportation is a major contributor to the average American's climate footprint. We can dramatically reduce these emissions in two ways:

- **Automobile travel.** Cars and trucks are now California's largest source of carbon emissions. At the same time, low-emission plug-in hybrid and electric cars are widely available. We urge our members to consider transitioning to such a vehicle if financially feasible. Examples of affordable used vehicles of these types were displayed at our 2019 electric car show in the MPC courtyard.¹ Such a purchase reduces significantly one's carbon footprint and helps inspire friends and family members to follow. Use of public transportation is an effective way to cut emissions as well.
- **Air travel.** At MPC, we are a demographic that engages in much more air travel than average. Flying is responsible for about 5% of human-caused climate change globally,² an enormous contribution considering that only 5% of the global population flies each year. Just one round trip from San Francisco to Europe adds about 25% to the average American's annual carbon footprint. The greenhouse-gas emissions per passenger from that single flight exceed the entire annual carbon footprint of the average resident of India.

This is an impact by our community that we can change by avoiding or limiting our air travel. Some of our members have recently committed to vacationing only to destinations reachable by car. Others have resolved to fly no more than a few thousand miles per year. These practices may not be possible for all, but for those who can, they are the most effective way to reduce instantly and very significantly one's carbon footprint. Finally, as a church, we can plan church-sponsored trips that use alternatives to air travel.

2. Plant-based foods and food waste. Each year vast areas of land are converted to feed production for meat and dairy cattle and other food animals. Cumulative emissions from animal agriculture, including land conversion and the methane produced by ruminant livestock, are now major contributors to climate change.³

We urge our members to reduce their meat consumption and move toward a plant-based diet. There are now many great cookbooks, websites, and restaurants focused on delicious plant-based foods.⁴ Innovative plant-based products that resemble meat in texture and taste have begun to proliferate.⁵

These exciting developments can facilitate greatly reduced dietary carbon footprints. We encourage our members to check out these resources and products. We can also use our MPC functions to educate ourselves, serving plant-based foods at church events and potlucks instead of carbon-intensive proteins such as red meat. Replacing red meat with poultry or sustainably caught, low-emissions fish can also help significantly.⁶

Food waste causes 10% of global carbon emissions, and American consumers waste over 30% of the food they buy. We must be vigilant about buying only food we can use and composting scraps to reduce landfill emissions.

3. Renewable energy. In 2014, MPC installed a large rooftop solar array providing the majority of our facility's electricity. We now ask MPC family members who own homes to consider installing residential rooftop solar.⁷ Such an expenditure may turn out to be financially or practically infeasible, but please explore this option, assessing the costs (including rebates) and environmental benefits. It is much more affordable now than in the past.

We also urge you to opt for renewable power from your energy utility.⁸ For example, PG&E's "Solar Choice" plan adds only \$40/year to the average residential bill and helps create high demand for solar power plants.

Everyone, including those who rent and can't install a solar array or choose their power mix, can still act. Currently 31% of California's electricity is from renewable energy. We can all push PG&E to adopt 100% renewables by 2030. And we can all find additional ways to reduce our carbon footprints at www.mpcfamily.org/calculator.

4. Plastics. Since the mid-1990s, the use of plastic—especially single-use plastics—has exploded. Our recycling industry cannot recycle most of these products given their huge volume and the technical difficulty of doing so. Plastic items enter our oceans and invade the digestive tracts of sea animals, sickening and often killing them. Our oceans now contain vast flotillas of plastic. The Pacific Garbage Patch, now twice the area of Texas, is one example. Plastic's contribution to climate change is also projected to increase rapidly in the near future unless action is taken now.

The true story of plastics leads to one incontrovertible conclusion: We must move away from these products and toward sustainable packaging. Some of our members have found the book *Life Without Plastic* (Pamondon & Sinha, 2017) to be a very useful guide.

Finally, and especially in our church functions, we need to avoid single-use plastic items and use only items that can be cleaned and reused. This change can serve as a model for our members and visitors alike.

5. Elections and political pressure. The climate change crisis cannot be resolved without the direct action and leadership of national, state and local governments. Inter-governmental cooperation is especially critical.

Our new federal administration is rejoining the global community to work collectively to combat climate change. As individuals and as a congregation, we must exert political pressure to rebuild our economy in a way that protects the climate, including a "green" infrastructure bill, and campaign vigorously to keep climate-oriented leaders in office.⁹

CONCLUSION:

Psalms 24:1 states: "The earth is the Lord's, and everything in it, the world and all who live in it, for the Lord founded it upon the seas and established it upon the waters."¹⁰ Genesis 2:15 sets forth the ethic of our stewardship of the planet: "And the Lord God took them in and put them into the garden, to work it and to take care of it."

We face a critical juncture in the life of our planet. We are damaging and despoiling large areas of our global garden. Our fate on this bountiful earth will be determined by the collective actions of all of us and our leaders in the next ten years. We ask all in our congregation to redouble our positive efforts, keeping in mind the imperatives above, to retard the progression of climate change and spare our planet and ourselves from irrevocable harm.

The Earth Care Committee
January 28, 2021

¹ There are many helpful EV buying guides. See e.g. content.ritersclub.org/evguide/.
² Aviation is commonly cited to be responsible for 2.5%-3% of global greenhouse gas emissions, but this figure accounts for only the burning of jet fuel. When accounting for the heat-trapping effects of condensation trails, nitrogen oxides, water vapor, and particulate emissions, aviation's contribution to global climate change is closer to 5%.
³ See: www.climateaction.org/climate-issues/food/animal-agriculture/impact-on-climate-change/.
⁴ E.g., <https://veoliva.com/2020/01/22/veoliva-climate-friendly-cooking/>.
⁵ A good summary of brands & ingredients is <https://www.nytimes.com/2019/10/22/dining/vegan-recipes-plant-based.html>.
⁶ Consult www.seafoods2.earth.org for low CO2-emission seafood choices and then cross-check them at www.seafoodwatch.org for sustainability in other environmental respects.
⁷ See www.intelrenewpower.org/resources/solar-resources.html.
⁸ See e.g. <http://www.100percent.org/> or visit your utility's website for info on selecting a renewable power mix.
⁹ See <http://www.faithclimatevoter.org/> and www.environmentalvoter.org to help.

Action on Food and Climate:

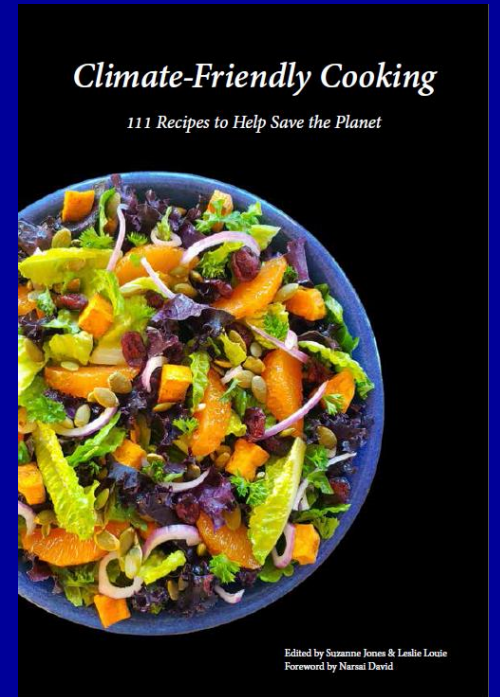
Published *Climate-Friendly Cooking* (2022). 800 copies sold!

Adopted “**Climate-Friendly Food Guidelines**” for church events:

- Unprocessed plant-based entree at all events
- If animal foods also desired, choose eggs, poultry, or pork
- Dairy products as an accent rather than a dominant ingredient
- Avoid red meat

Six retreats and three church events have followed these guidelines so far!

www.mpcfamilly.org/climate-action/



Action on Democracy/Voting Rights/Climate Policy:

From July 2021-Dec. 2022, ~100 MPC congregants took **20,355 individual actions** to protect U.S. democracy and the climate.

Postcards, letters, emails, phone calls, door-knocks to:

- 17,870 voters to get them to the polls
- 2,285 elected officials re. voting rights/climate legislation

Current goal is 25,000 actions by Election Day 2024



← MPC's 2022 "Thermometree"

Together we're getting results!!

Inflation Reduction Act

Will get us to a 40% reduction in emissions by 2030, i.e., four-fifths of the way to the target of 50% a reduction by 2030.



In 2022 CA passed 40 new climate bills toward target of net-zero by 2045.

~20 more CA climate bills in the pipeline for 2023!

The 2024 Elections will be CRITICAL for continued progress!!!!

Action on Renewable Power and Electrification:

- Solar power for sanctuary, fellowship, ed. buildings since 2014.
- Solar being added to church office and manse: RE-VOLV.ORG
- Starting phase-out of natural gas: Replaced manse gas range w/induction (\$750 CA rebate!) with much more to come....
- All buildings enrolled in 100% renewable power for when they draw from grid.



NEW campaign to enroll 100 MPC households in 100% renewable electricity-- *Will avoid 200 tons CO2 emissions/year!!*



See if your energy provider has a 100% renewable option and enroll today!

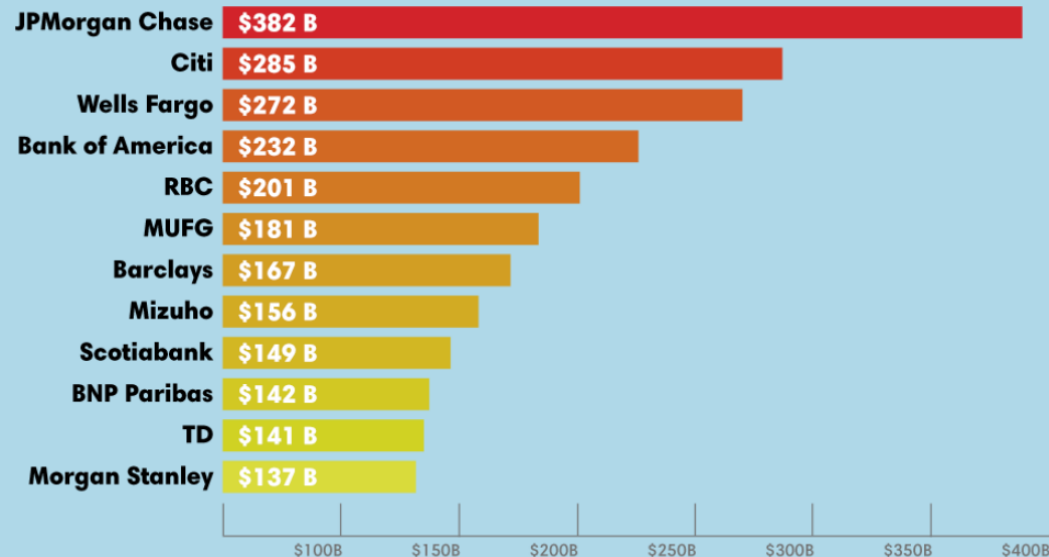
Action on Fossil-Free Banking:

“I got angry when I realized that the bank I counted on to protect my money for my future was instead using my money to destroy my future.” -Daniel Lazier, THIS! Volunteer

The Dirty Dozen

The Worst Banks Since the Paris Agreement

Top 12 banks financing fossil fuels globally, 2016–2021



- Offering small group classes with *THIS! Is What We Did* to empower us to make the switch.

- Seven households have already opened fossil-free bank accounts!

- Moved MPC's checking and savings accounts to a fossil-free bank.

THIS! IS WHAT WE DID

WHAT DID YOU DO TO FIGHT CLIMATE CHANGE?

THIS! Is What We Did

thisiswhatwedid.org
Check them out and get their awesome newsletter!

Action on Transportation and Travel:



2020:
Low-
emission
vehicle
(LEV) fair
after
church



2021:
Survey
re LEV
owner-
ship.



2022:
2nd LEV
fair;
PLUS
EV round-
table!



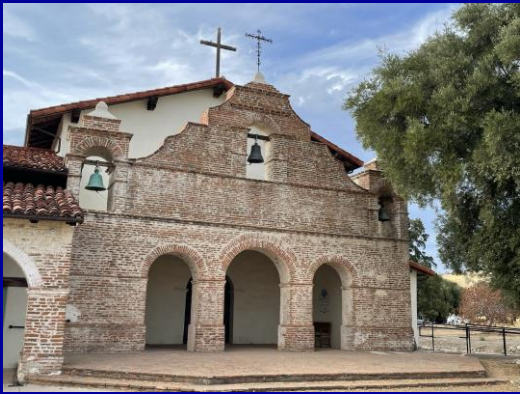
End of
2022:
Repeated
LEV
ownership
survey.

WHAT CHANGED:

- End of 2021, **20** MPC households w/LEVs, of which **4** were EVs.
- End of 2022, **40** MPC households w/LEVs of which **20** were EVs!

In 2020, a planned church retreat to Spain was cancelled due to COVID

When travel became doable again, instead of another far-off destination, our Pastor created a series of 4 seasonal retreats at Mission San Antonio de Padua, California, 170 miles away.



18 people attended—about the same number expected on the Spain retreat.



The retreats were glorious...

...and the carbon emissions?



With 18 participants driving 340 miles four times in 7 cars with average mileage of 48 mpg (thanks to several EVs!), the total transportation emissions came to:

~ 2 tons CO₂-eq

A retreat in Europe, with 18 round trip flights at ~5 tons CO₂-eq per person would have emitted:

~ 90 tons CO₂-eq

Action on Plastics:

PLASTIC FREE JULY:

46 MPC participants last year!



plasticfreejuly.org

Eliminated plastic water bottles from church campus.

Phased out single-use plastic (cups, plates, utensils, ziploc bags, plastic wrap, etc.)



Patronizing local **bulk re-fill stores**

(Re-Up Refill, Fillgood, Filling Station, Refill Madness)

Creation Spirituality and Climate Grief

Monthly “**Nature and Spirituality**” meetings provide support as we rejoice, grieve, worry, and work together to protect our global garden.

Quarterly “**Connect with Nature**” outdoor gatherings help us gain meaning, comfort, and courage from God’s Creation.

Incorporated the phrase “**Care for Creation**” into our Sunday Charge.

Greater attention to Creation care in regular Sunday worship, and Creation-centered services 4x/year.



What good is it, my brothers, if someone says he has faith but does not have works? ... faith by itself, if it does not have works, is dead.

- James 2:14-18, c. AD 45



Yes, we do need hope, of course, we do. But the one thing we need more than hope is action. **Once we start to act, hope is everywhere.** So instead of looking for hope, look for action. Then, and only then, hope will come.”

- Greta Thunberg, AD 2020

Online resources from this presentation:

MPC's Climate Call to Action, democracy/voting/policy action, MPC food guidelines, cookbook and much more!

mpcfamily.org/climate-action/

Low-cost solar for churches:

re-volv.org

Fossil-free banking:

thisiswhatwedid.org

Reducing plastic:

plasticfreejuly.org

Carbon footprint calculator:

coolclimate.org/calculator

Responsible seafood:

seafoodCO2.dal.ca

seafoodwatch.org

mcfarlandsprings.com (West Coast only, low-emissions, responsible trout farm)

Climate-Friendly Cooking

111 Recipes to Help Save the Planet



Edited by Suzanne Jones & Leslie Louie
Foreword by Narsai David

Want to move toward a more climate-friendly diet?

MPC's climate-friendly cookbook contains nearly 200 pages of resources, cooking methods, photos, and recipes that are delicious and easy on the climate!

\$18 plus tax.

**All proceeds benefit MPC's climate-action and
democracy programs!**

www.mpcfamilly.org/cookbook

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