
Plastic Pollution


Every piece of plastic ever made still exists today…
…and will continue existing for at least 500 years.

HISTORY

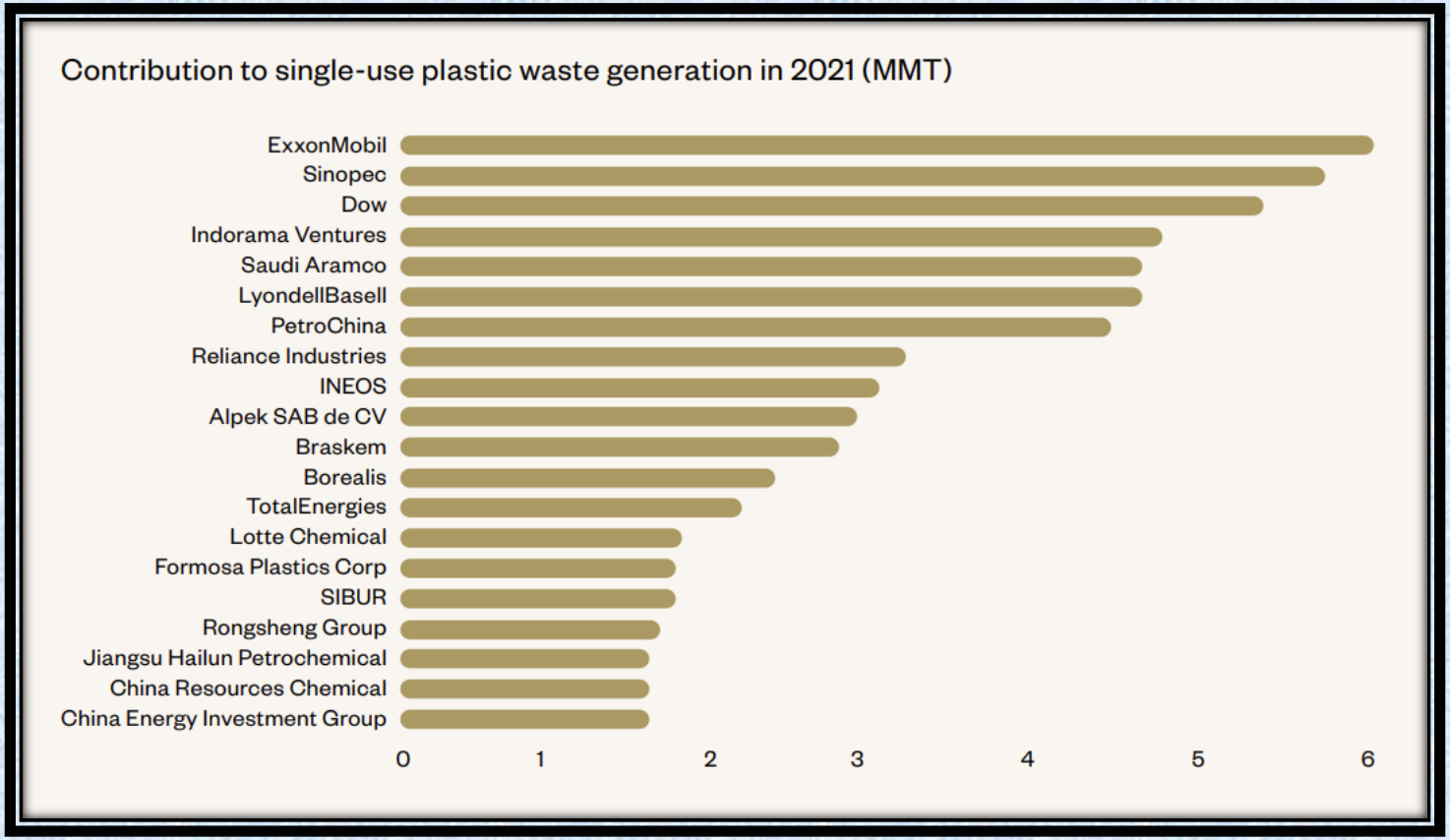
- Before 1950, plastic wasn't a big part of our lives
- During WW2, the military discovered the versatility of plastic
- In the 1950s, companies found more ways to use this cheaper material
- By the 1960s, global plastic production increased 400% as we embraced the new "disposable lifestyle"
- By 1979 we were producing more plastic than steel

- Since the 1950s, over 8.3 billion metric tons of plastic have been produced globally
- Over 300 million tons of plastic are produced worldwide each year
- Every year, an estimated 8 million metric tons of plastic waste end up in the world's oceans
- The economic cost of plastic pollution to marine ecosystems is estimated to be at least $13 billion per year

- Americans consume 50 million plastic water bottles a year
- Americans use 5 trillion plastic bags a year (it takes about 14 plastic bags for the equivalent of the gas required to drive one mile)
- The average person ingests a credit card's worth of plastic (5g) each week
- Microplastics have been found in human blood and breastmilk, Antarctic snow, and rain
- Plastic production is on track to almost triple by 2060

Single-use plastics – plastic packaging, and disposable plastic items such as bags, straws and cutlery that are used once then thrown away – represent the largest plastics application category and account for a third of all plastics consumed globally. Evidence shows that single-use plastics are also the most damaging to people and the planet.

More than half of the world's single-use plastic waste can be traced directly to just 20 petrochemical companies.



Currently the only way to permanently eliminate plastic waste is by destructive thermal treatment, such as combustion or pyrolysis. The pyrolysis process has a significant environmental impact, mainly due to gas emissions.

Three big interventions would deliver a huge improvement in single-use plastic waste and associated greenhouse gas emissions:

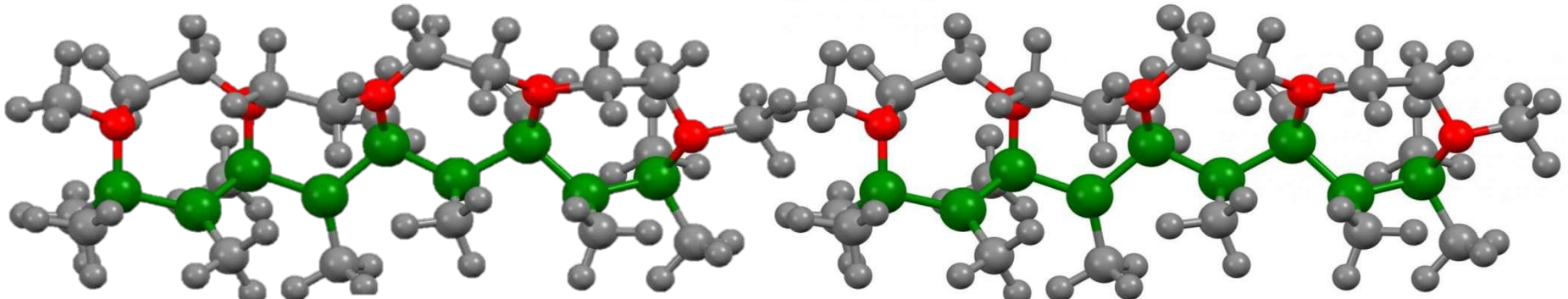
- Limit fossil fuel plastic production and consumption
- Increase plastic products and materials that are designed for circularity and are circulated in practice
- Eliminate plastic leakage to the environment across the lifecycle through environmentally sound waste management

RECOMMENDATIONS FOR DIFFERENT STAKEHOLDERS

	POLYMER PRODUCERS	INVESTORS	POLICY MAKERS	OTHER COMPANIES IN THE VALUE CHAIN
1. Limit fossil fuel plastic production and consumption	Include Scope 1, 2 and 3 emissions from plastic polymers in net zero climate targets and strategies.	Actively engage with investees (or use voting rights) to stop the building of new fossil fuel-based polymer facilities, or divest.	Put a levy on fossil-fuel polymer production and/or consumption to generate funds for scaling plastics collection, sorting and recycling infrastructure.	Set clear corporate targes to reduce virgin plastic consumption – e.g., through EMF/UN's Global Commitment – and lend public support to policy measures with this objective.
2. Increase plastic products and materials that are designed for circularity and are circulated in practice	Set a minimum 20% target by 2030 for recycled vs fossil fuel feedstock in polymer production.	Demand clear, ambitious and time-bound targets for recycled vs fossil fuel feedstock in polymer production from every producer.	Set target on overall plastic material circularity – i.e., combined mass of re-used, recycled, and sustainable plastics put on the market – including 20% minimum recycled content standards for all single-use plastics by 2030.	Create certainty for greater investment in recycling by entering into long-term forward contracts for recycled plastics at fixed and fair prices.
3. Eliminate plastic leakage to the environment across the lifecycle through environmentally sound waste management	Invest in or partner with plastic waste collection, sorting and recycling systems and capacities, with a focus on high-leakage countries.	Lend public support for policies that will create economic conditions for more investment in plastics collection, sorting and recycling (e.g., through the Business Coalition for a Global Plastics Treaty).	Under the Global Plastics Treaty, create a fund to support waste management systems in countries most impacted by plastic pollution (following the example of COP27's Loss and Damage Fund).	Harmonize design standards for sale plastics use, disposal and recyclability (including chemical additives).

Plastic Waste-Makers Index 2023

People don't *need* plastic, points out polymer scientist Brad Olsen at MIT. "We need things like clothing, health care, shelter. The idea is to provide for those needs with the best materials solution." That will usually be a polymer, he adds, but it doesn't always have to be a human-made one. Many naturally occurring polymers (hefty strings of molecules that make plastic) are used as materials: cotton, hemp, rubber, birch bark.



THE RECYCLING PROBLEM

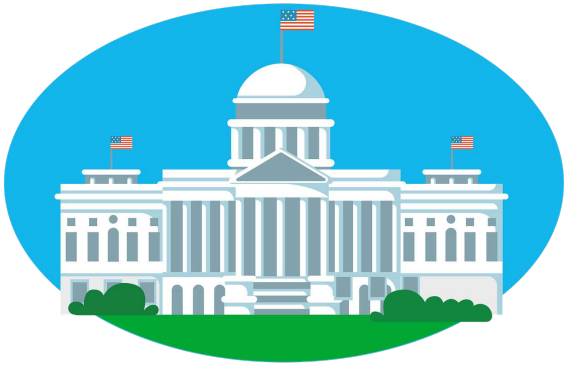
We can promote all the recycling initiatives in the world, and it still would not be enough to combat the waste produced by billion-dollar corporations.

Recycling is failing to scale fast enough and remains, at most, a marginal activity for the plastics sector — from 2019-21, growth in single-use plastics made from virgin polymers was 15 times that from recycled feedstocks*. Only strong regulatory intervention with economic incentives can solve what amounts to market failure.

*Feedstocks - Refers to the raw materials used to produce plastics

Recycling has been sold as the solution to throwaway plastic for years, but recycling will never be able to absorb the existing and expected future growth of plastics. Efforts to transform plastic recycling should be seen as a complement to the large-scale transformation of production and consumption of plastic.

The Break Free from Plastic Pollution Act Reintroduced in the 118th Congress



The Break Free from Plastic Pollution Act of 2023 expands and improves upon earlier versions of the bill.

The legislation addresses the plastic pollution crisis by:

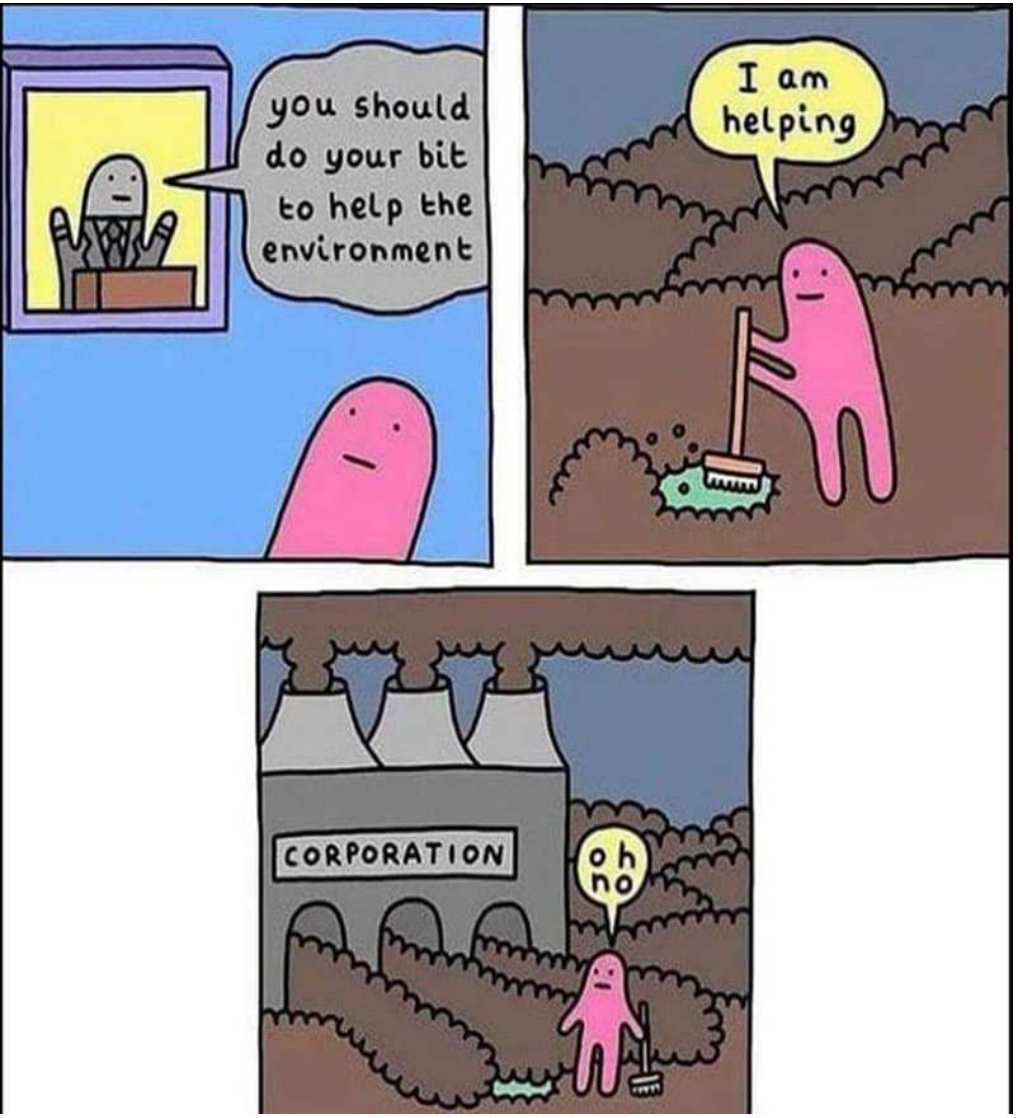
1. Shifting the financial burden of waste management and recycling off municipalities and taxpayers to the producers of plastic pollution;
2. Spurring massive investments in domestic recycling and composting infrastructure;
3. Phasing out certain single-use plastics that aren't recyclable;
4. Establishing minimum recycled content standards;
5. Launching a national beverage container refund program to bolster recycling rates;
6. Placing a temporary pause on new and expanding plastic facilities until the EPA updates and creates vital environmental and health regulations to protect frontline and fenceline communities;
7. Prohibiting plastic waste from being exported to developing countries; and
8. Require a comprehensive analysis of the scale of fishing gear losses by domestic and foreign fisheries, including an evaluation of the ecological, human health, and maritime safety impacts of derelict fishing gear, and recommendations on management measures.


Take Action

We can eliminate plastic pollution within a decade but to do so we must abandon the idea that industry can transform of its own accord.

Dr Andrew Forrest AO

Chairman, Minderoo Foundation



Healthy MONROE

RECYCLING & GREEN COMMUNITY PROGRAM

Dan Rock

Dan_Rock@monroemi.org

(734) 240-7909

www.greenmonroecounty.com

If your bathtub was overflowing, you wouldn't immediately reach for a mop (recycling), you'd first turn off the tap. That's what we need to do with single-use plastics.

"Plastic is not designed to be recycled — despite industries and governments telling the public that we should recycle plastic."

The same companies that created the plastic pollution crisis are motivated to keep the public from believing that their product needs to be phased out.


IS RECYCLING
ENOUGH??


WE CAN'T
RECYCLE OUR
WAY OUT OF
PLASTIC
POLLUTION

Recycling was a lie — a big lie — to sell more plastic, industry experts say

More Recycling Won't Solve Plastic Pollution

We Can't Recycle Our Way Out of the Plastic Pollution Problem

As we build a better system for our waste, follow this handy guide for what can and can't be put in the recycling bin

APR 24, 2019 | JOHN HITE | @JOHNHITE

Waste is an enormous problem. But recycling is the wrong solution

Recycling violates every principle of human-centered design, writes user-f
And business culture is to blame.

The US Recycling System Is Garbage

China doesn't want our crap anymore, and who can blame them?

CHINA HAS SHUT DOWN ITS INEFFICIENT, POLLUTING "RECYCLING VILLAGES" IN FAVOR OF MODERN FACILITIES.

Is This the End of Recycling?

Americans are consuming more and more stuff. Now that ot
countries won't take our papers and plastics, they're ending u
trash.

ALANA SEMUELS MARCH 5, 2019

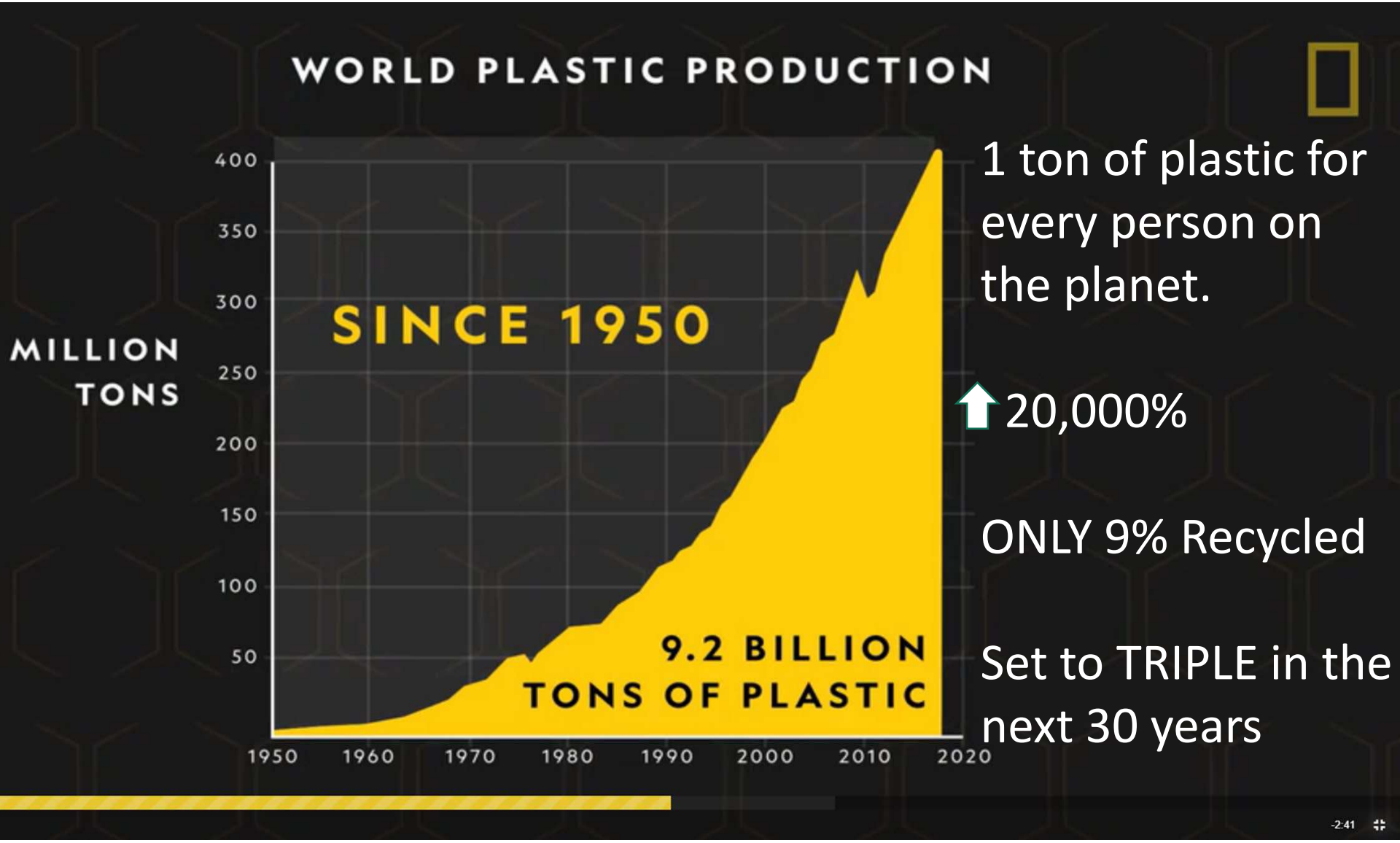
'Plastic recycling is myth': what really happens to your ru

You sort your recycling, leave it to be

How Big Oil Misled The Public Into Believing Plastic Would Be Recycled

The Crisis After China's 'No'

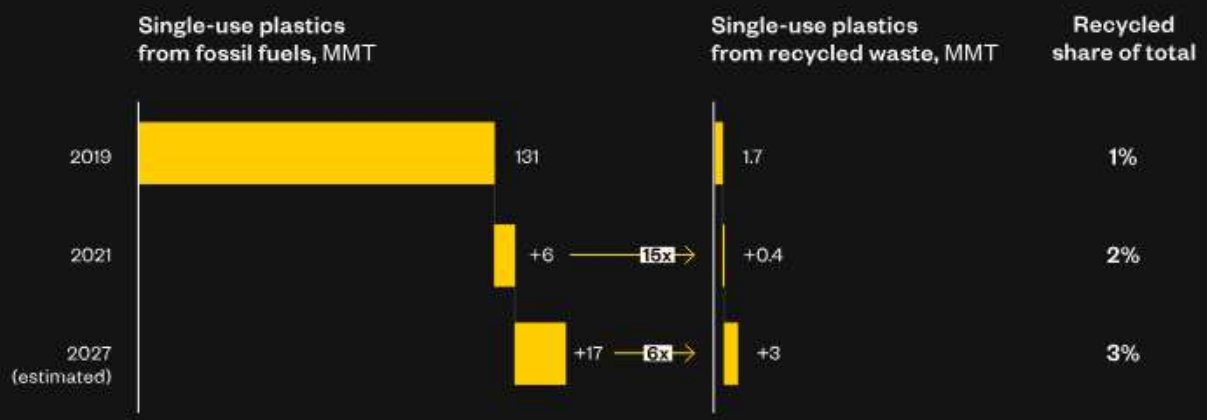
Exposing The Myth Of Plastic Recycling: Why A Majority Is Burned Or Thrown In A Landfill

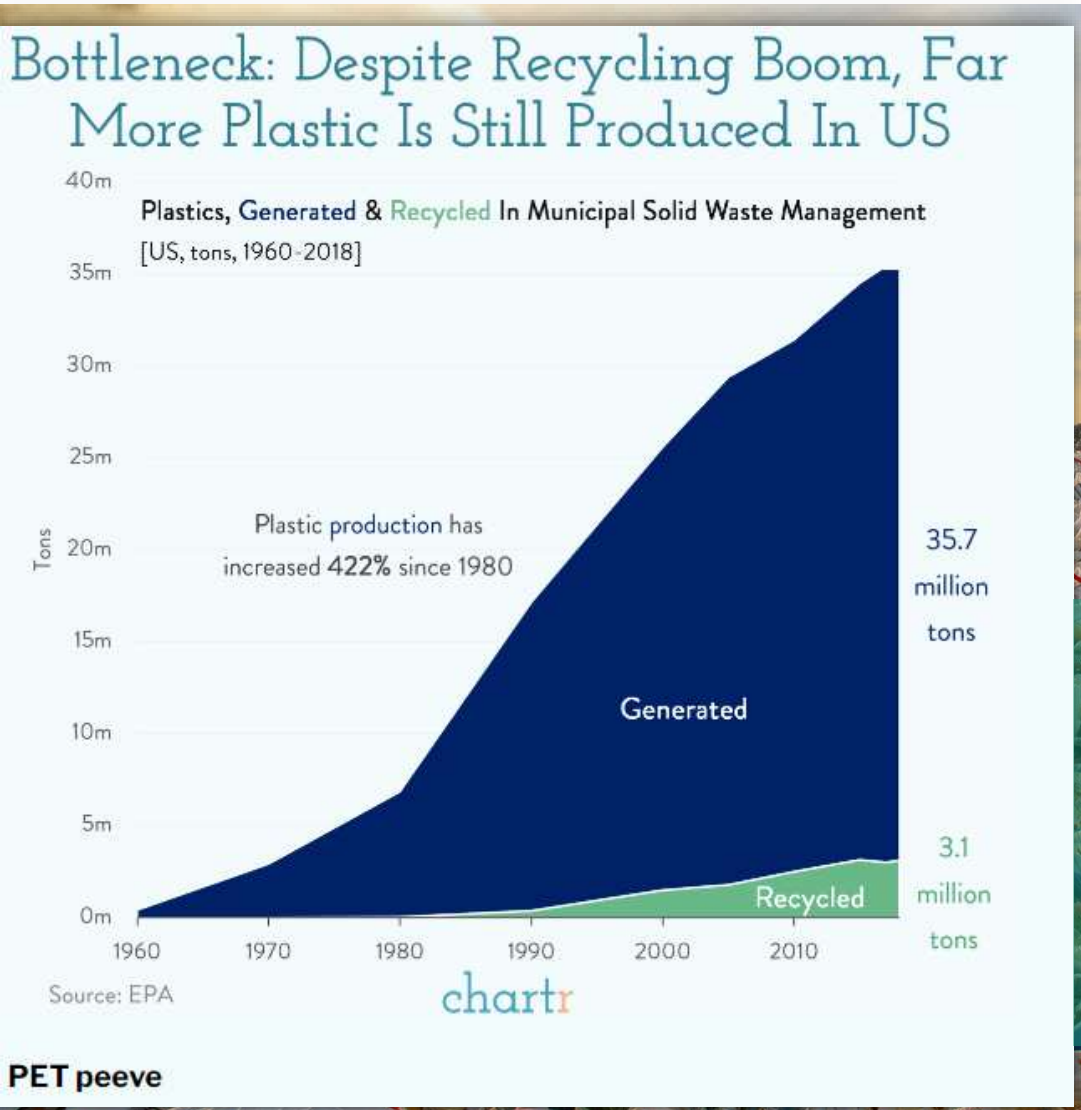

WORLD PLASTIC PRODUCTION
MILLION TONS
400
350
300
250
200
150
100
50
SINCE 1950
9.2 BILLION TONS OF PLASTIC
1950
1960
1970
1980
1990
2000
2010
2020
1 ton of plastic for every person on the planet.
20,000%
ONLY 9% Recycled
Set to TRIPLE in the next 30 years
-2:41

RECYCLING IS FAILING TO SCALE FAST ENOUGH AND REMAINS A MARGINAL ACTIVITY FOR THE PLASTICS SECTOR.

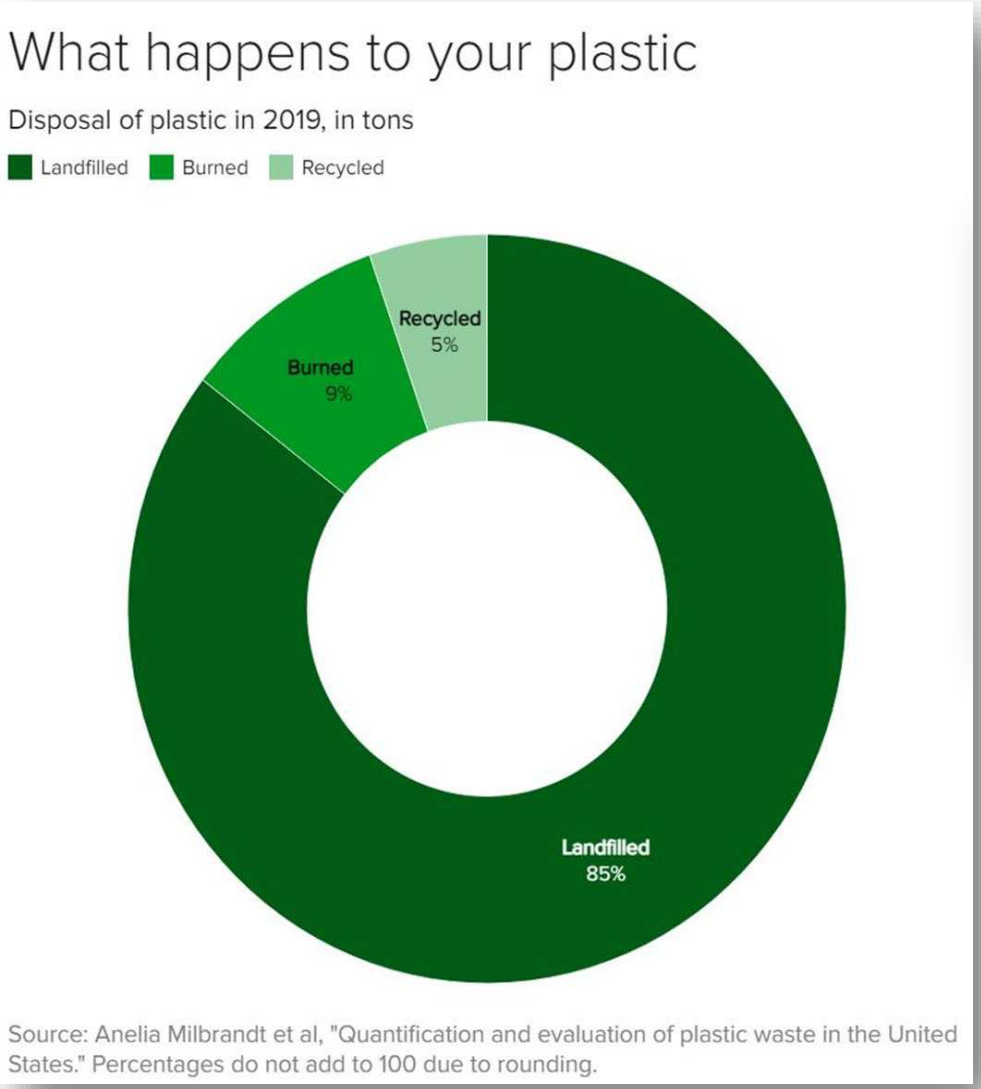
Only strong regulatory intervention can solve what amounts to market failure.

From 2019-21, growth in single-use plastics made from virgin polymers was 15 times that from recycled feedstocks. Petrochemical companies are (naturally) only expanding into recycling in markets where the economic conditions are (somewhat) more favourable. These are markets where policies are more progressive and demand for recycled plastics is stronger. However, across all polymers and technologies, only 3 MMT of additional on par recycling capacity is expected to be brought online by 2027 (0.7 MMT by the petrochemical industry).




Bottleneck: Despite Recycling Boom, Far More Plastic Is Still Produced In US
Plastics, Generated & Recycled In Municipal Solid Waste Management
[US, tons, 1960-2018]
40m
35m
30m
25m
20m
15m
10m
5m
0m
Tons
Plastic production has increased 422% since 1980
Generated
Recycled
35.7 million tons
3.1 million tons
1960
1970
1980
1990
2000
2010
Source: EPA
chartr
PET peeve


There is no away...



US news

US is recycling just 5% of its plastic waste, studies show

According to the Last Beach Cleanup and Beyond Plastics report, about 85% of plastic ends up in landfills with 10% incinerated

PLASTICS AND THE ENVIRONMENT

PLASTICS AND HUMAN HEALTH

Online resources provided to you by the Geneva Environment Network and its partners

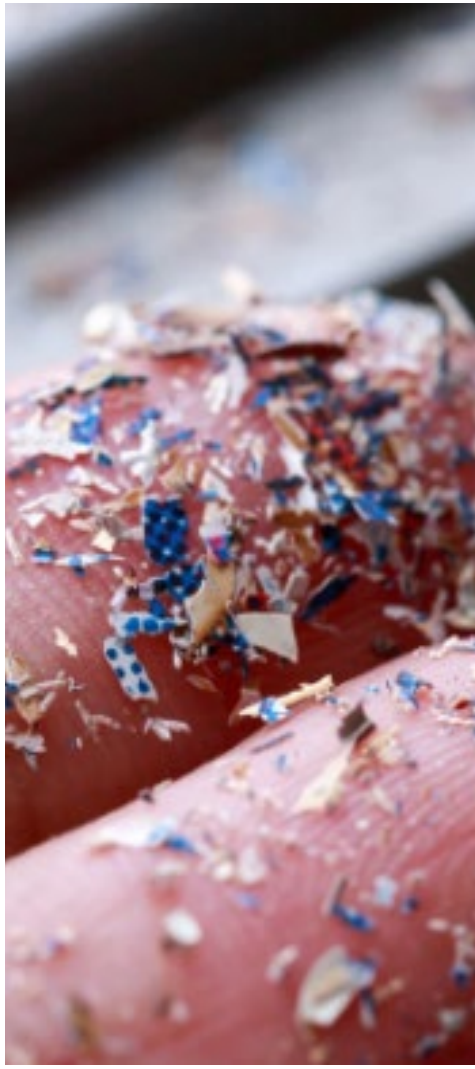
www.genevaenvironmentnetwork.org/resources/updates/plastics-and-the-environment

GENEVA ENVIRONMENT NETWORK

Microplastics – where do they come from?

All conventional plastic that ends up in the environment eventually becomes microplastic. Plastic ends up in the environment through several routes: Wind carries plastic items from landfills to rivers and the rain flushes trash to the sea. Microplastics get into the wastewater when we wash our clothes and they are formed when plastic items like car tires, plastic bags and packaging wear and tear. Often times plastic ends up in the wrong place due to people's indifference: the recycling bin is too far away or there is none.

Even the plastic recycling process is a source of permanent microplastics.



Plastics cause wide-ranging health issues from cancer to birth defects, landmark study finds

First analysis of plastics' hazards over life cycle - from extraction to disposal - also shows 'deep societal injustices' of impact

Plastic food packaging contains thousands of hormone-mimicking chemicals: Study

Analysis of the impact of plastics found disproportionate effects on coastal and ocean-dependent communities while production workers were at increased risk of a range of diseases. Photograph: Munir Uz Zaman/AFP/Getty Images

Plastics are responsible for wide-ranging health impacts including cancers, lung disease and birth defects, according to the first analysis of the health hazards of plastics across their entire life cycle - from extraction for manufacturing, through to dumping into landfill and oceans.

Toxins hidden in plastics are the industry's dirty secret - recycling is not the answer

Charlotte Lloyd

It is estimated that more than 13,000 different chemicals are involved in the production of plastics, and many of these have never been assessed for their toxicity.

Recycled plastic can be more toxic and is no fix for pollution, Greenpeace warns

Campaign group says plastics are incompatible with circular economy as countries prepare for treaty talks

February 28, 2024 08:00 AM

New report highlights health hazards of plastics, pesticides

Everyday exposures to Endocrine Disrupting Chemicals pose health threats

Bottled water contains up to 100 times more plastic than previously estimated, new study says

By Aliza Chasan
Updated on: January 9, 2024 / 7:52 PM EST / CBS News

Climate > News

Majority of burgers, steaks, chicken and plant-based meats contain microplastics, study reveals

Chicken, beef, pork and tofu contain as much microplastic as fish

Stuti Mishra • Wednesday 10 January 2024 14:42 GMT • 4 Comments

A new Consumer Reports investigation found that 99 percent of the food we tested was contaminated with the plasticizers known as phthalates – including canned food, fast food, and even organic products.

Phthalates (pronounced tha-layts) are known to interfere with the production of hormones in our bodies – increasing the risk of diabetes, cardiovascular disease, certain cancers, birth defects, premature birth, neurodevelopmental disorders, and infertility. Yet **U.S. regulators haven't set meaningful limits on the amount of these chemicals in our food.**

It's time the FDA takes action now to address the risk of plasticizers in our food. Join us in calling on the FDA to limit our exposure to these risky chemicals, and fully ban phthalates in food packaging and production.

Chemicals that may cause cancer, infertility 'widespread' in packaged products like Cheerios: report

By Lisa Fickenscher

Published Jan. 4, 2024, 3:32 p.m. ET

CNN health Life, But Better Fitness Food Sleep Mindfulness Relationships

Foods we eat are covered in plastics that may be causing a rise in premature births, study says

By Sandee LaMotte, CNN

6 minute read · Updated 7:11 PM EST, Tue February 6, 2024

FEBRUARY 7, 2024

Editors' notes

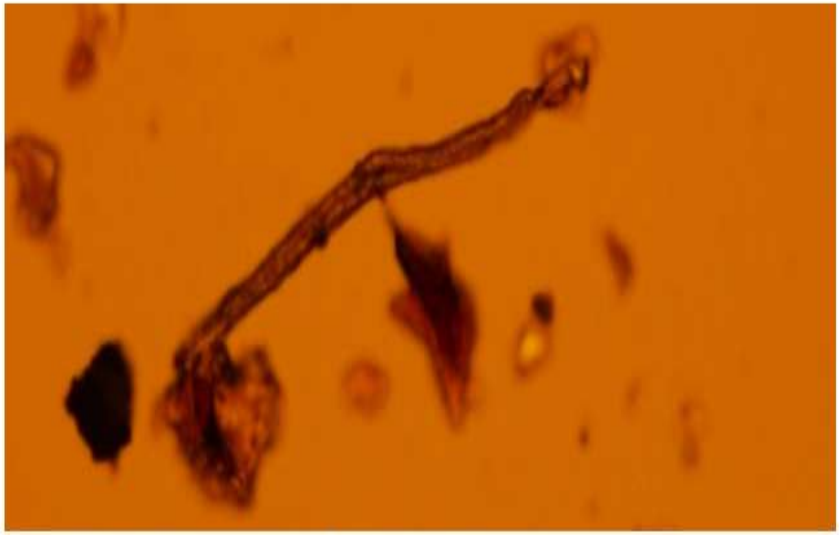
One in 10 premature births linked to plastic chemicals: Study

Microplastics found in human breast milk for the first time

Exclusive: Researchers concerned over potential health impacts of chemical contaminants on babies

Microplastics Found in Every Human Placenta Tested, Study Finds

HEALTH 26 February 2024 By CARLY CASSELLA



Microplastic in placental tissue. (Garcia et al., Toxicological Science, 2024)

It's been over three years since scientists first found microplastics swimming in four different human placentas, and as it turns out, that was just the tip of the iceberg.

Microplastics Found In Human Hearts For First Time, Showing Impact Of Pollution

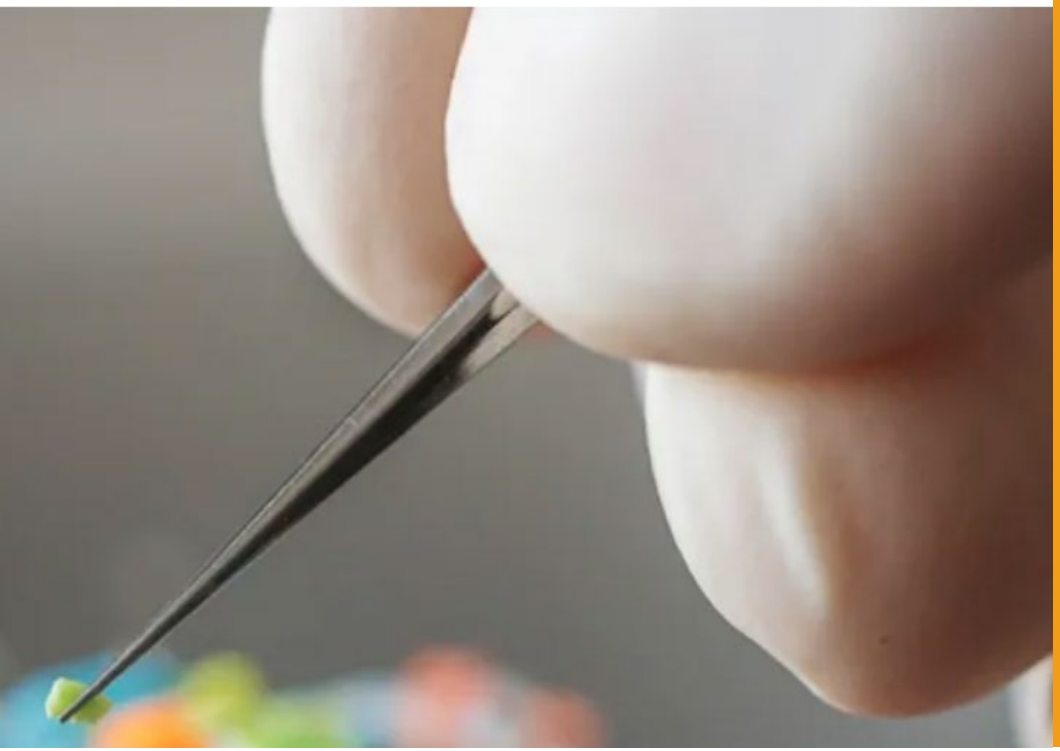
Exposure to microplastics may be a contributing factor for not only heart disease, but also diabetes and liver disease.

TECH

SCIENTIST MAKES DISTURBING NEW DISCOVERY WHILE STUDYING EFFECTS OF MICROPLASTICS: 'TO US, THIS WAS STRIKING'

"These were not high doses of microplastics, but in only a short period of time, we saw these changes."

By Becca Inglis / February 23, 2024



Within 3 weeks, mice began to move and act strangely, showing behavior that resembled symptoms of dementia in humans.

These signs were more profound in older mice, indicating that microplastics' health effects get worse as we age.

SEPTEMBER 27, 2023

Editors' notes

Researchers find high concentrations of microplastics in cave water and sediment

by Jacob Born, Saint Louis University

Saint Louis University students sample the Cliff Cave system near St. Louis, Missouri, for microplastic d...

In two recent papers, Saint Louis University researchers report finding high concentrations of microplastics present in a Missouri cave system that had been closed to human visitors for 30 years.

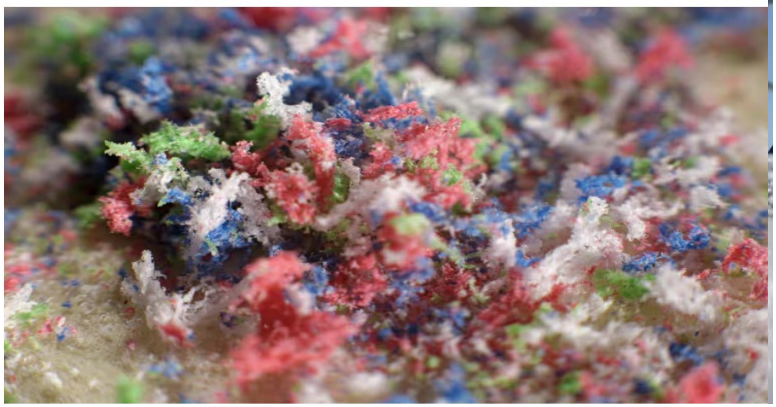
It's Snowing Microplastics In The Arctic

TOM HALE

Senior Journalist

90% of Great Lakes water samples have unsafe microplastic levels – report

But experts say damage can be reversed if US and Canada act quickly to stop new plastics from entering lake system



Plastic Bag Found at the Bottom of World's Deepest Ocean Trench

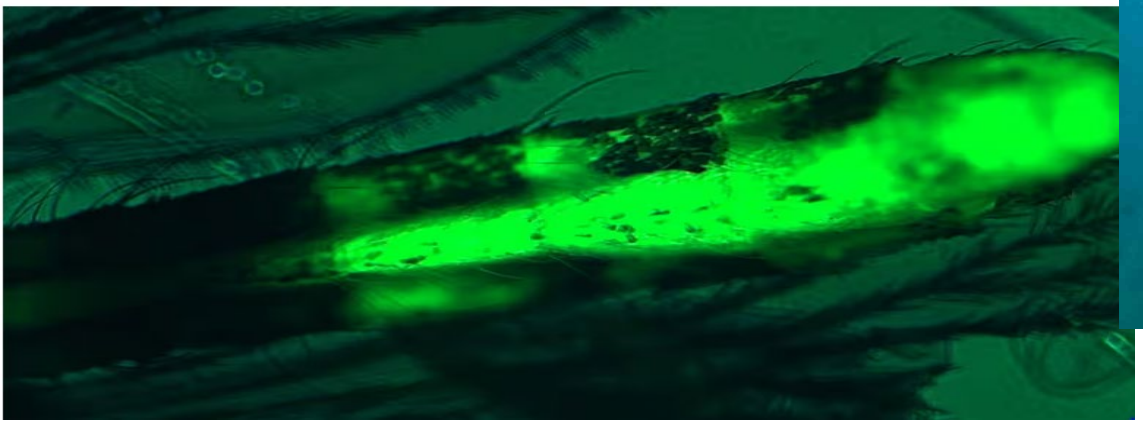
Even one of the most remote places on Earth couldn't hide from the scourge of plastic trash.

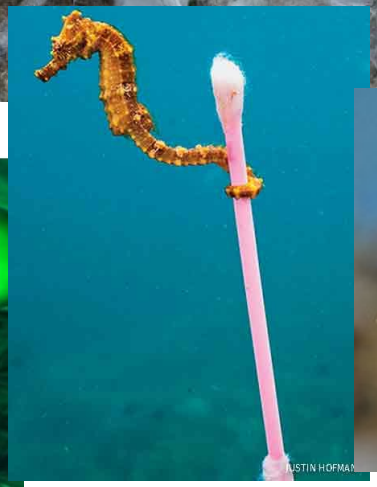
Russian Scientists Find Microplastics in Wasp Intestines

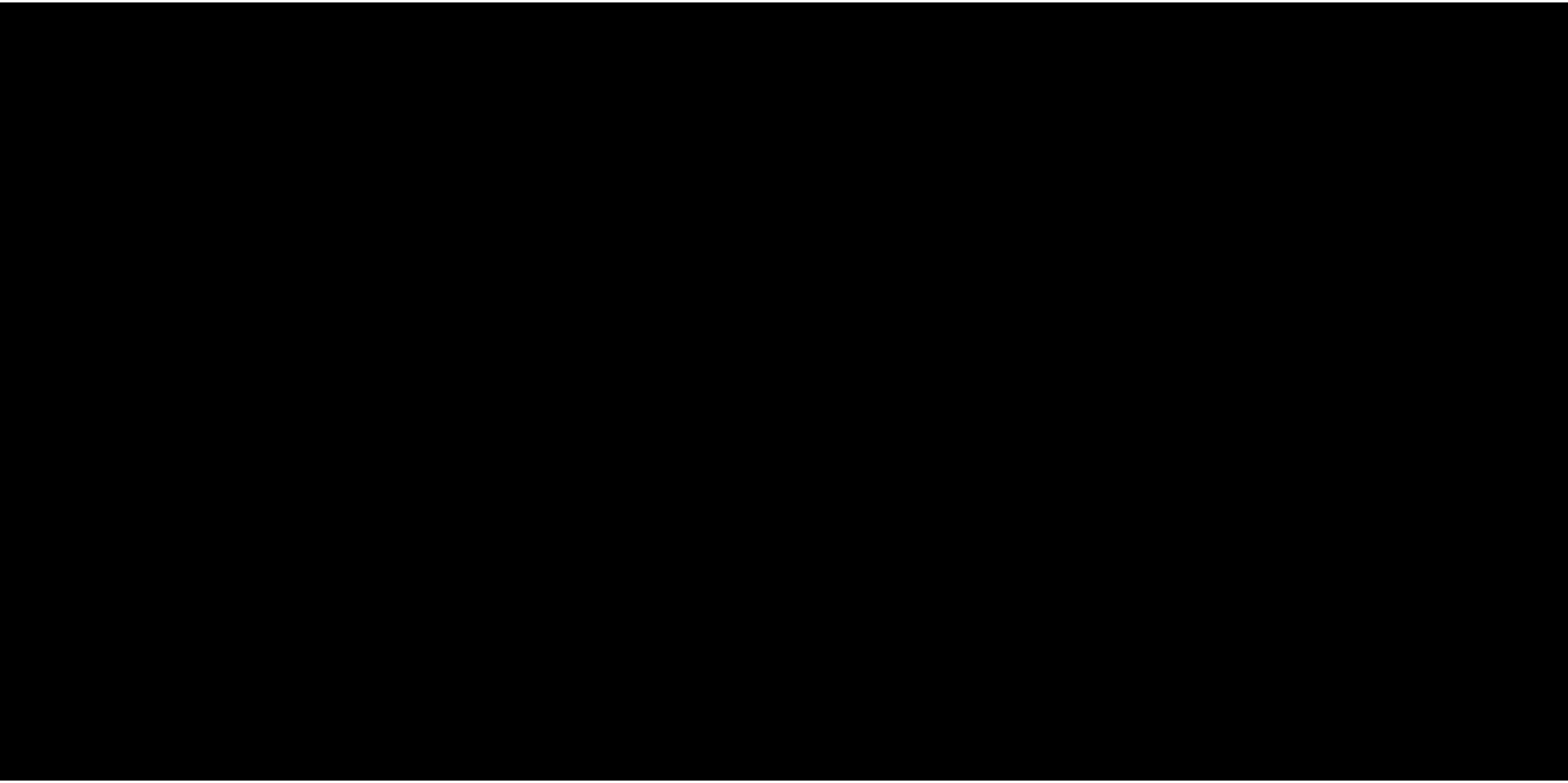
Feb. 14, 2024

Microplastics can spread via flying insects, research shows

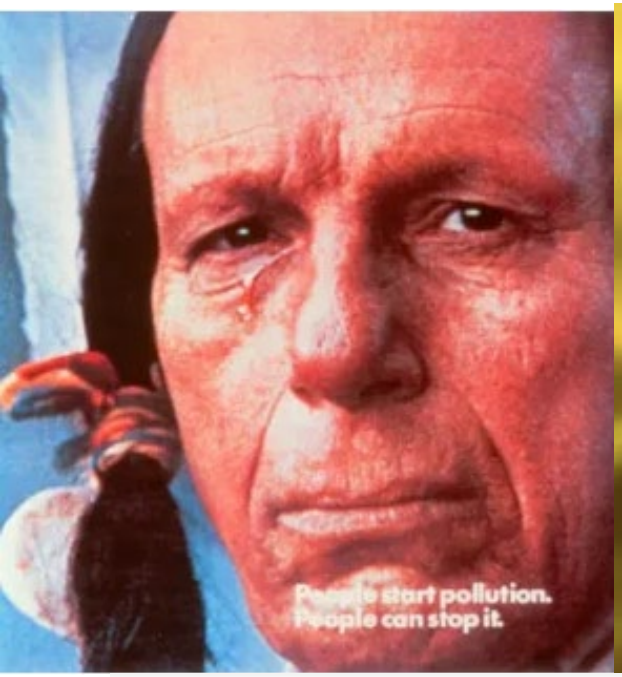
'Shocking' study reveals plastic contaminates our skies as well as the oceans, say scientists







“If the public thinks recycling is working, then they are not going to be as concerned about the environment.” Larry Thomas, President, Society of the Plastics Industry



ENVIRONMENT | MARCH 5, 2024

ExxonMobil CEO Blames Climate Crisis on the Public, Stirring Outrage

"It's like a drug lord blaming everyone but himself for drug problems," says one economist.


1
RESIN IDENTIFICATION CODE
CREATED IN 1988
ARTIST: PLASTIC INDUSTRY
RECYCLING SYMBOL
CREATED IN 1970
ARTIST: GARY ANDERSON

LEGISLATIVE UPDATE

Law change aims to increase recycling rates in Michigan

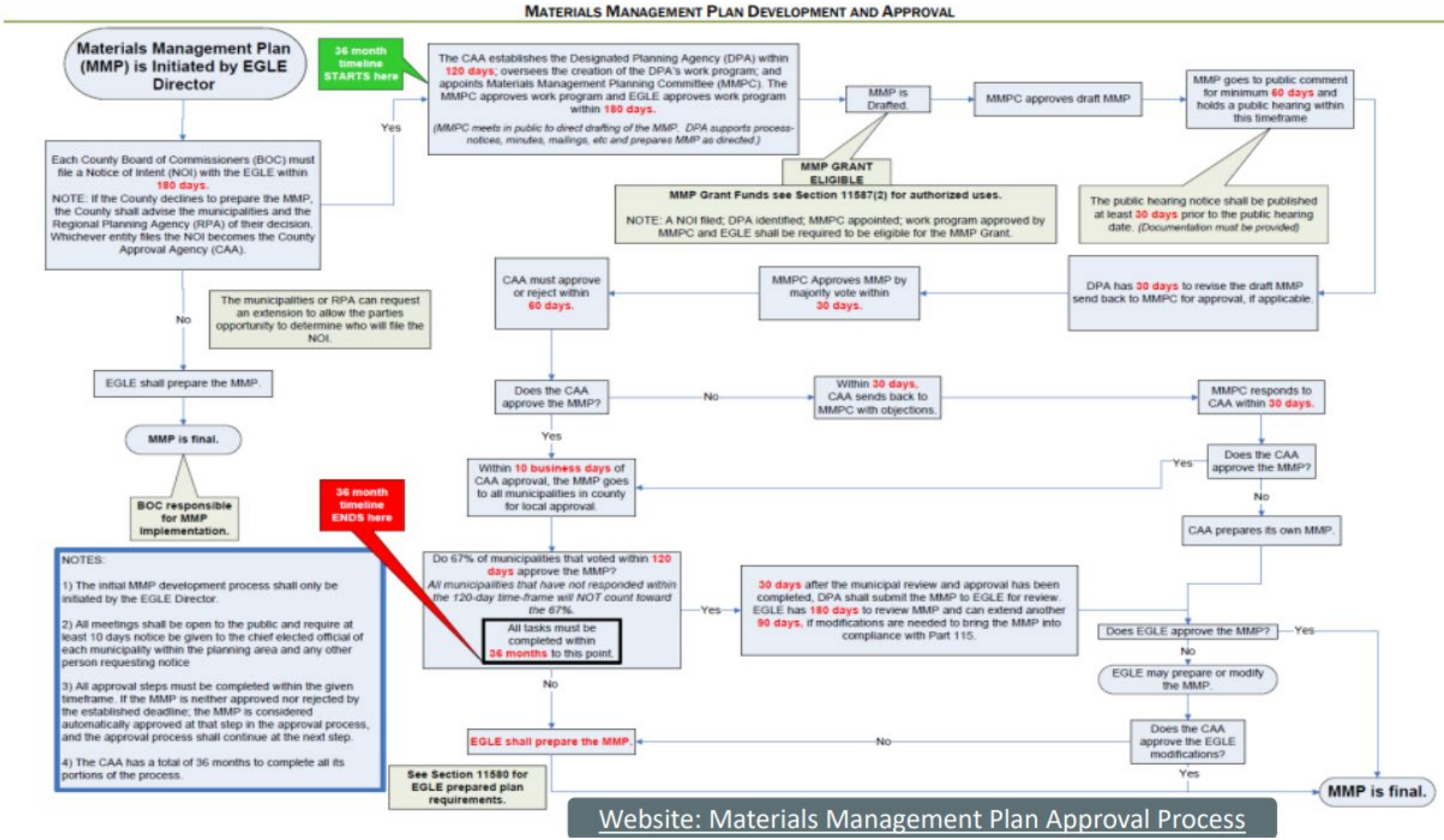
Michigan Public | By Beth Weiler
Published October 12, 2023 at 6:31 PM EDT

Michigan Environment Watch

Michigan lawmakers OK recycling reform. Critics call it 'burning hot garbage'

"Chemical recycling" is just greenwashing for burning plastic

Reduce > Reuse > Recycle??????



Website: Materials Management Plan Approval Process


PEOPLE WANT LEGISLATION
PEOPLE CALM DOWN, PULL THE FUNDING
FUND RECYCLING CAMPAIGNS
IRONICALLY, THAT'S RECYCLING!

"If you want to understand any problem in America, you need to focus on who profits from the problem."


American Chemistry Council
Plastics Division
MAKING SUSTAINABLE CHANGE

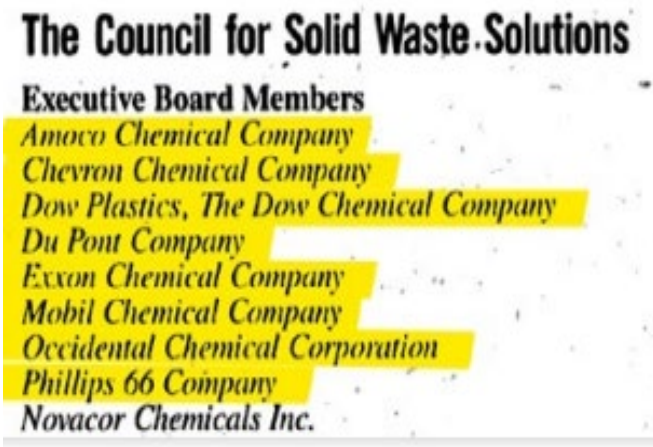

PLASTICS
INDUSTRY ASSOCIATION

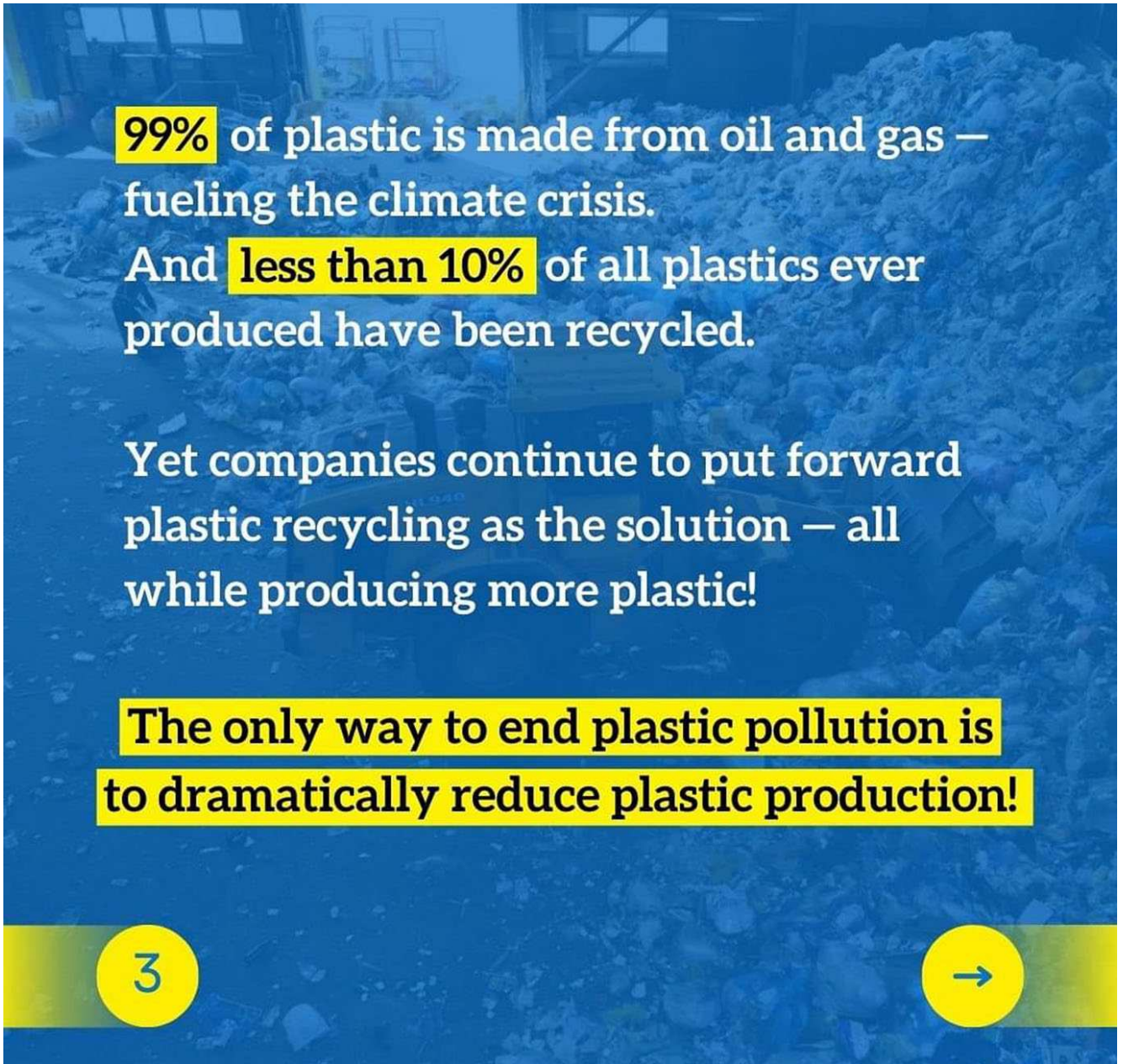

Chevron


ExxonMobil


DOW


DU PONT
TM


The Council for Solid Waste Solutions
Executive Board Members
Amoco Chemical Company
Chevron Chemical Company
Dow Plastics, The Dow Chemical Company
Du Pont Company
Exxon Chemical Company
Mobil Chemical Company
Occidental Chemical Corporation
Phillips 66 Company
Novacor Chemicals Inc.


99% of plastic is made from oil and gas — fueling the climate crisis.
And less than 10% of all plastics ever produced have been recycled.
Yet companies continue to put forward plastic recycling as the solution — all while producing more plastic!
The only way to end plastic pollution is to dramatically reduce plastic production!
3
→

Top global corporate polluters of 2023

found in Break Free From Plastic Global Brand Audit 2023

1 THE Coca-Cola COMPANY

40 Countries | **Total Count:** 33,820
Most Common Item: Bottles (17,703)
Most Common Brand: Coca-Cola (16,931)

2 Nestlé

33 Countries | **Total Count:** 9,931
Most Common Item: Bottles (4,586) and Food Wrappers (3,451)
Most Common Brand: Nestlé Water (4,586)

3 Unilever

31 Countries | **Total Count:** 4,485
Most Common Item: Detergents (1,439), Sachets (700), and Bottles (492)
Most Common Brand: Surf Excel (1,440)

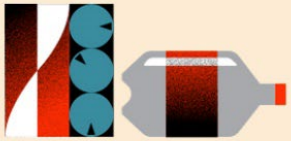
4 PEPSICO

30 Countries | **Total Count:** 34,780
Most Common Item: Food Wrappers (11,080) and Bottles (13,861)
Most Common Brand: Lays (7,336)

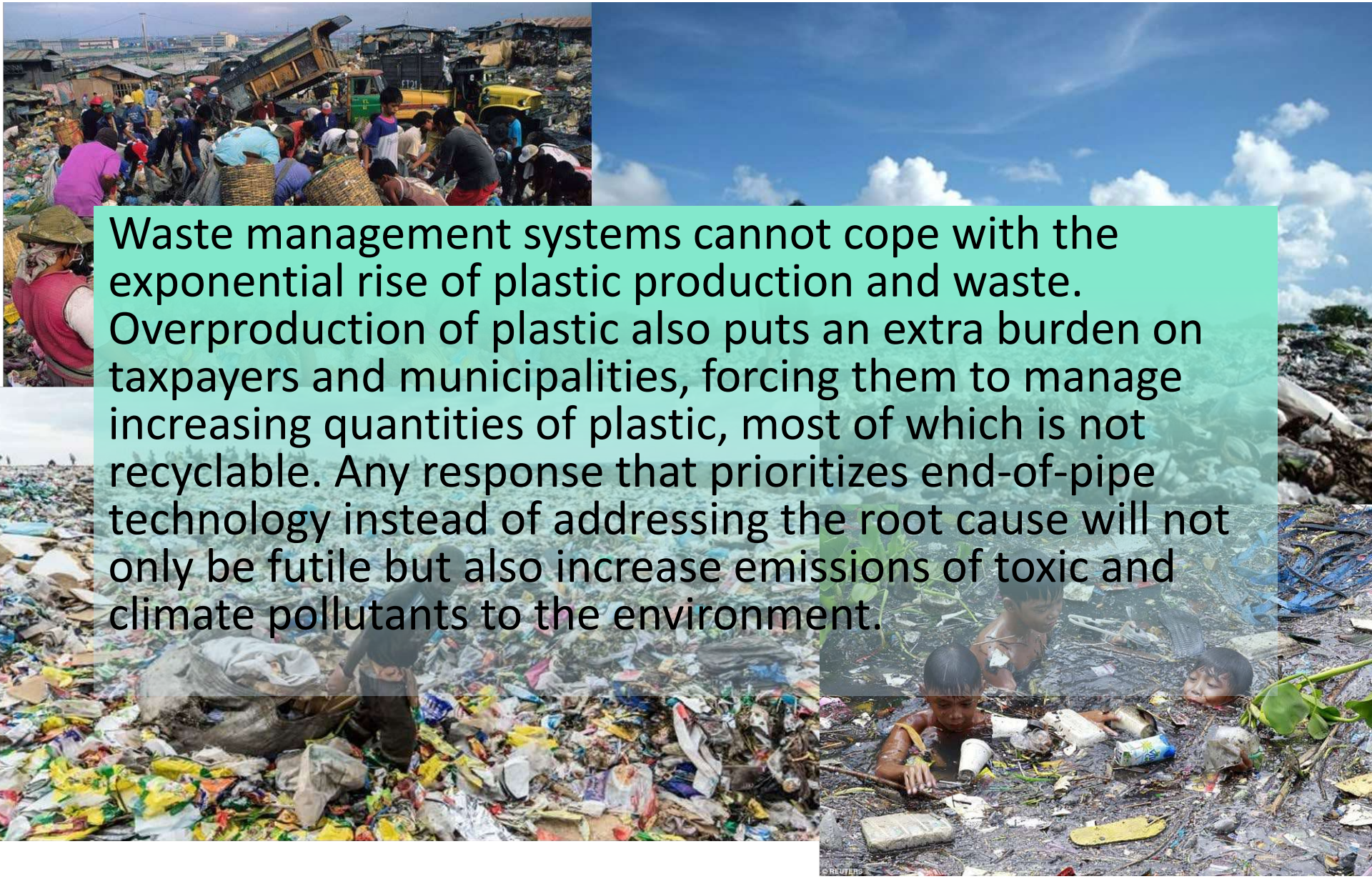
5 Mondelēz International

26 Countries | **Total Count:** 8,094
Most Common Item: Food Wrappers (7,219), Candy Wrappers (100), Food Packaging (64)
Most Common Brand: Center Fruit (3,936)

6 MARS
7 P&G
8 DANONE
9 Altria
10 BAT



#BreakFreeFromPlastic



Waste management systems cannot cope with the exponential rise of plastic production and waste. Overproduction of plastic also puts an extra burden on taxpayers and municipalities, forcing them to manage increasing quantities of plastic, most of which is not recyclable. Any response that prioritizes end-of-pipe technology instead of addressing the root cause will not only be futile but also increase emissions of toxic and climate pollutants to the environment.

Who is Responsible?

Producers Ensure:

- Products are **manufactured**, **marketed**, and **delivered** using **recycled content**
- Products are **designed** to be **recycled**
- Products are **collected**, **processed**, and **recycled** into new products

EPR IS WIDELY APPLIED ACROSS THE US

BEVERAGE CONTAINERS
CA, CT, HI, IA, ME, MA, MI NY, OR, VT

CARPET
CA, NY

MERCURY SWITCHES
AR, IA, IL, IN, LA, MA, MD, ME, NC, NJ, RI, SC, UT, VA, VT

MATTRESSES
CA, CT, RI, OR

FLUORESCENT LIGHTING
MA, ME, VT, WA

RECHARGEABLE BATTERIES
CA, IA, MD, MN, NY, NJ, ME, VT*, DC*
(*includes alkaline)

ELECTRONICS
CA, CT, DC, HI, IL, IN, ME, MD, MI, MN, MO, NJ, NY, NC, OK, OR, PA, RI, SC, TX, UT, VT, VA, WA, WV, WI

CELL PHONES PESTICIDE CONTAINERS SHARPS
CA

MERCURY THERMOSTATS
CA, CT, IA, IL, MA, ME, MN, MT, NH, NY, PA, RI, VT

PHARMA
CA, WA, NY, OR, MA, ME, IL

PAINT
CA, CO, CT, DC, IL, ME, MN, NY, OR, RI, VT, WA

SOLAR PANELS
WA, Niagara County, NY

TIRES
CT

PACKAGING AND PRINTED PAPER
CA, CO, ME, OR

HOUSEHOLD HAZARDOUS WASTE
VT

GAS CYLINDERS
CT, VT

"Plastic is not designed to be recycled — despite industries and governments telling the public that we should recycle plastic."

Projected Impact of EPR in Four Adopting States

(California, Colorado, Maine, and Oregon)

Before implementation of EPR

34% of material recycled

2.25M tons

of recyclables on average projected to be recycled in California, Colorado, Maine, and Oregon annually.

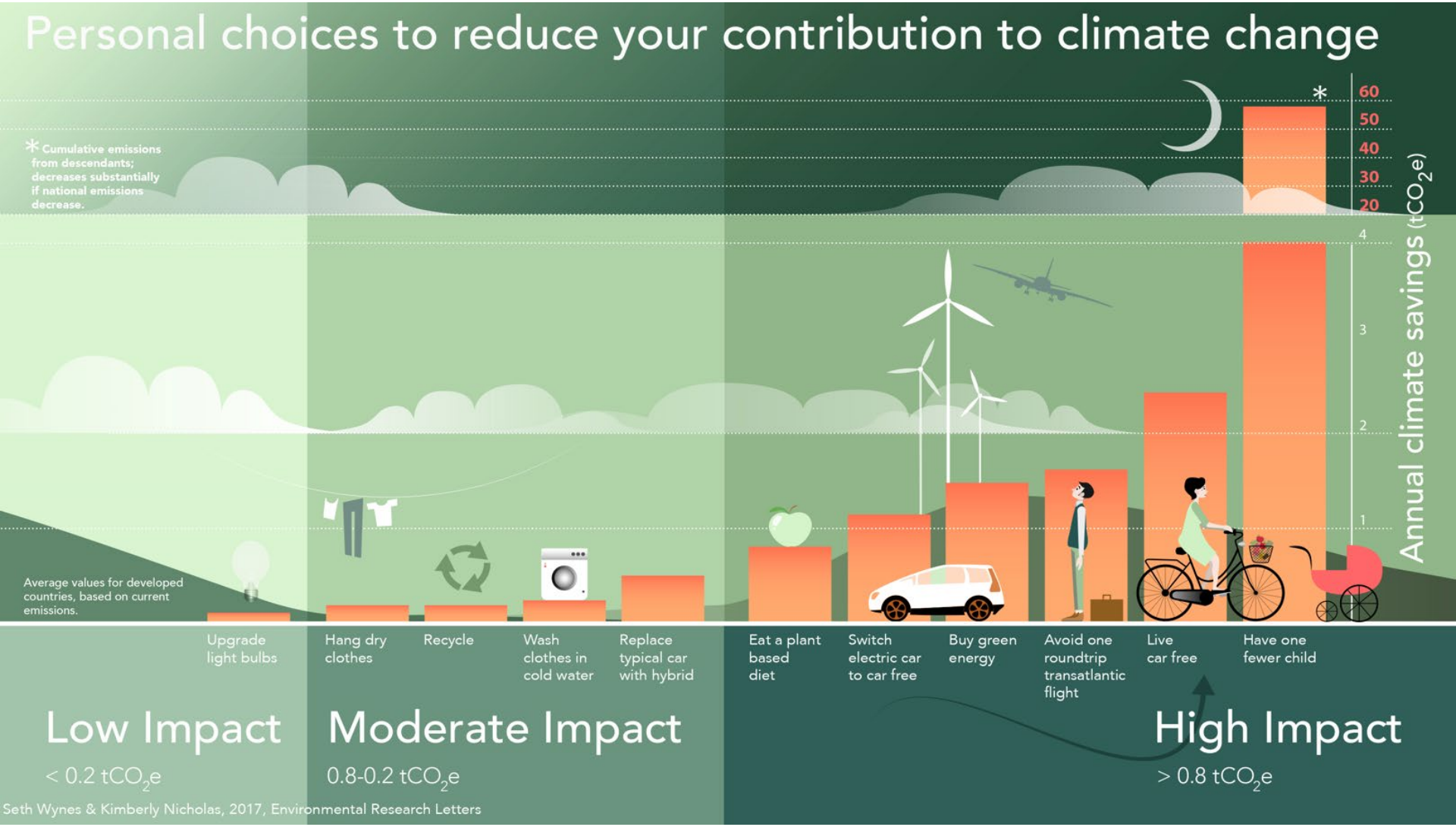
After implementation of EPR

69% of material recycled

4.65M tons

of projected recyclables on average will be recycled in California, Colorado, Maine, and Oregon annually.

Personal choices to reduce your contribution to climate change



Low Impact

< 0.2 tCO_2e

Moderate Impact

0.8-0.2 tCO_2e

High Impact

> 0.8 tCO_2e

Seth Wynes & Kimberly Nicholas, 2017, Environmental Research Letters

- **Government Action**: Encourage your local and national representatives to implement bans on single-use plastics and support the **Break Free From Plastic Act** and **Extended Producer Responsibility (EPR).** These policies can drastically reduce waste at the source.

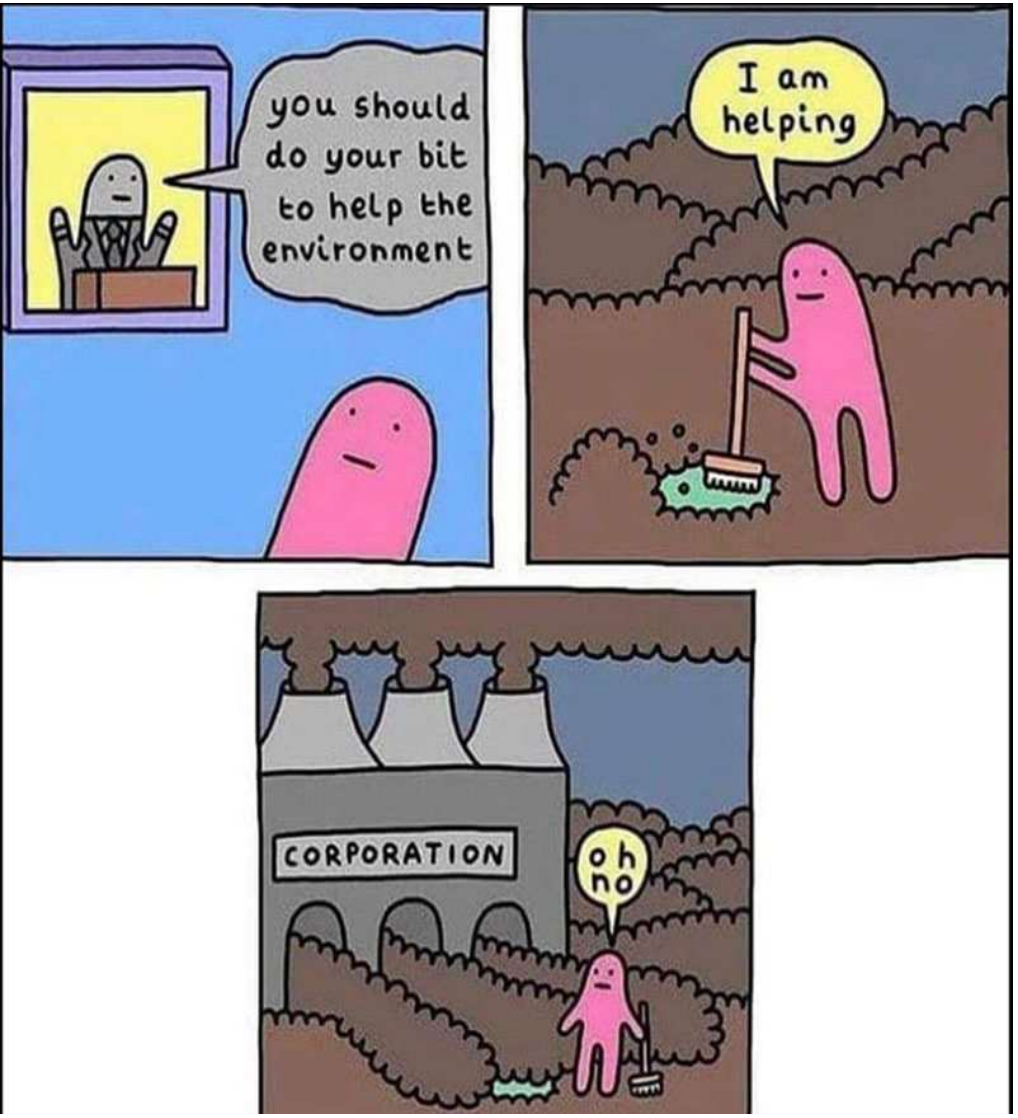
- **Business Practices**: Support companies who make a meaningful commitment to sustainability and use eco-friendly materials and sustainable packaging.

- **Community-Led Efforts**: Education and collective action are key in changing public attitudes towards waste.

- Each of us has a role to play. Together, we can move towards a future free of plastic pollution.

Environmentalism:

this crazy notion that we
ought to maybe clean
up after ourselves.



Healthy MONROE

RECYCLING & GREEN COMMUNITY PROGRAM

Dan Rock

Dan_Rock@monroemi.org

(734) 240-7909

www.greenmonroecounty.com

TREE STUMP &
HUMAN FINGERPRINT

WE ARE EARTH

Blue Nuns Go Green

Pollution of Air, Land, and Water

Ocean Fisheries Disappearing

Sustainability:
Mission for the Millennium

The IHM Commitment to Sustainability as a Moral Mandate

"Meeting the needs of the present generation without compromising the ability of future generations to meet their own needs."

The World Commission on Environment and Development

Vision Emerged of Sustainable Future

Reuse existing building

Vision Translated

- Reduce, reuse, recycle, rethink
- Choose passive natural energy systems
- Reduce dependence on non-renewable energy sources
- Design indoor and outdoor space that promotes sustainable community
- Use products that reduce footprint
- Restore site

Renovate Not Build New

376,000 Square Feet of Total Demo and Renovation

Mass Demolition

Completed Mass Demo
Metaphor for Holding Space Open for Deeper Transformation


DANGER
CONSTRUCTION
AREA
AUTHORIZED
PERSONNEL
ONLY
CHRISTMAN
HARD
HAT
REQUIRED
CHRISTMAN
SSHM Team Christman
NAGLE

Recycling

- Mass Demo 77% by weight
- New Construction 23% by weight
- Weighted average 73%

Doors, Wood Trim, Parquet Floors, Wainscoting

600 wood doors salvaged; 450 reused in renovation

Light Fixtures

Over 100 period light fixtures retrofitted and reinstalled

Over 800 Wood Windows Restored and Reused

Window Restoration Matrix

	Existing Single Glazed	Refurbished Double Glazed	Refurbished Double Glazed - Low e	Refurbished Double Glazed Heat Mirror	New Aluminum Clad Wood Double Glazed Low e	New Aluminum Clad Wood Double Glazed Heat Mirror	New Aluminum Double Glazed Low e	New Aluminum Double Glazed Heat Mirror
Criteria				Not Acceptable				
Thermal Performance				This window can not be				
U Value Winter	1.11	0.49	0.32	retrofit with heat mirror	0.29	0.18	0.29	0.18
U Value Summer	1.32	0.52	0.36		0.31	0.22	0.31	0.22
Shading coefficient	0.99	0.85	0.37		0.37	0.37	0.37	0.37
Amt of air infiltration	Great	Low-Moderate	Low-Moderate		low	low	low	low
Evaluation	Poor	Fair-Good	Very Good		Very Good	Excellent	Very Good	Excellent
Visual Health								
UV Transmittance	60%	50%	45%		45%	0.50%	45%	0.50%
Glare Reduction	poor	poor	slightly better		slightly better	Excellent	slightly better	Excellent
Function								
Ease of Operation	fair	Very Good	Very Good		poor	poor	good	good
Ease of Cleaning	good	Very Good	Very Good		good, but heavy	good, but heavy	good, but heavy	good, but heavy
Ease of Installation	Easy, original opng maintained	Easy, original opng maintained	Easy, original opng maintained		opng must be modified	opng must be modified	opng must be modified	opng must be modified
Maintenance	repaint every 7-10 years	repaint every 7-10 years	repaint every 7-10 years		repaint every 20-25 years	repaint every 20-25 years	repaint every 20-25 years	repaint every 20-25 years
Aesthetics								
Historical Accuracy	original product	original product, modified shadow line at mullion	original product, modified shadow line at mullion		moderate modification - not true divided lite	moderate modification - not true divided lite	moderate modification - not true divided lite	moderate modification - not true divided lite
SHPO Acceptance	Most Acceptable	Acceptable	Acceptable		SHPO reluctant to approve	SHPO reluctant to approve	SHPO reluctant to approve	SHPO reluctant to approve
Sustainability								
generated waste material	lead paint	Lead paint, old glass	Lead paint, old glass		lead paint, entire window	lead paint, entire window	lead paint, entire window	lead paint, entire window
manufacturing waste	none	new glass process	new glass process		wood, alum clad, glass	wood, alum clad, glass	aluminum, glass	aluminum, glass
transporation of product	local / regional repair	local / regional repair, truck in new glass	local / regional repair, truck in new glass		disposal of old unit, truck in new from MN	disposal of old unit, truck in new from MN	disposal of old unit, truck in new from MN	disposal of old unit, truck in new from MO
green material	no new material	recycled glass content?	recycled glass content?		all new materials	all new materials	mostly new materials (excl glass)	mostly new materials (excl glass)
Cost								
First cost (screen incl)	400	950	975		1,385.00	1,385.00	1385.00+	785.00+
Relative Energy Consumption	1	0.47	0.36		0.36	0.30	0.36	0.30
Relative Life Cycle Cost	higher	moderate	moderate		highest	highest	lowest	lowest
Estimated window life (years)	70	70	70		50	50	70	50
Estimated cost to repaint in field (2000$) are $45 per window opening								

Marble Saved and Reused

Gray Water Recycling

- Separate piping system collects sink, shower water
- This gray water routed to constructed wetlands
- 7,270 gallons/day diverted to wetlands
- 4,560 gallons/day recycled to flush toilets

Asphalt and Brick Salvage

Broken asphalt reused as gravel base

Removed brick saved for tooth-in and infill

Topsoil

Ann Arbor Reuse Center

- Sinks
- Toilets
- Cabinets
- Doors
- Hardware
- Radiators
- Guardrails
- Handrails
- Furniture
- Fire Alarms
- Light Fixtures

LEED Certified Renovation

The U.S. Green Building Council

hereby certifies that

Renovation of the Motherhouse

Monroe, Michigan

has successfully met the sustainable building design and performance standards required for the following level of certification under the Leadership in Energy and Environmental Design (LEED®) Green Building Rating System

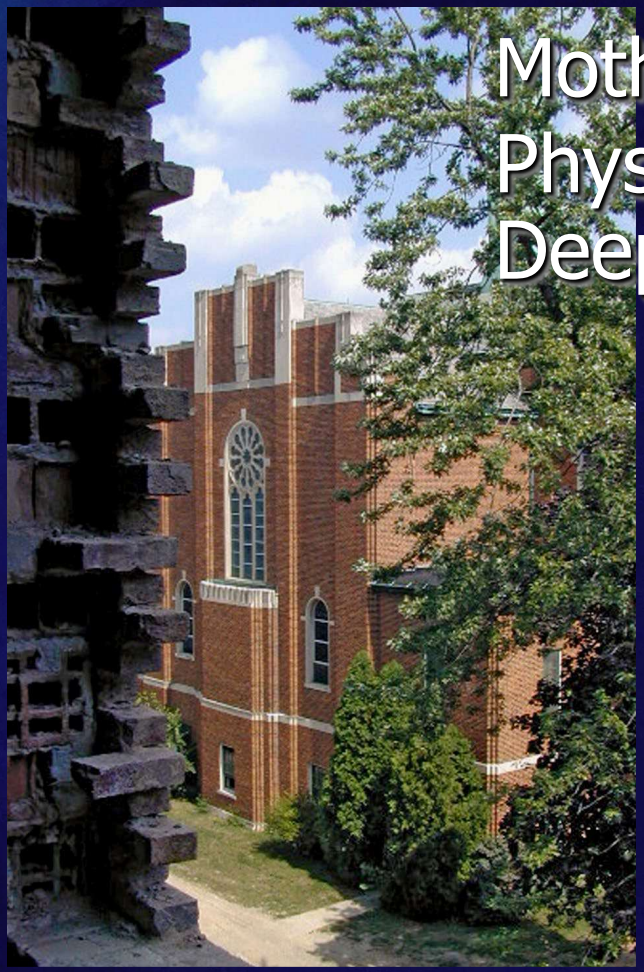
LEED®-NC v2 Certified

LEED

2006

Kevin Hydes, Chairman

S. Richard Fedrizzi, President, CEO and Founding Chairman



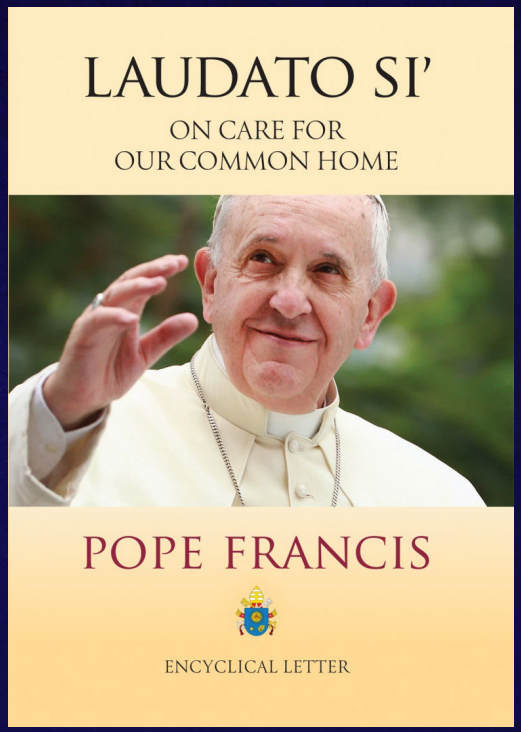
Motherhouse: Physical Symbol of Deeper Transformation

Campus Greening Committee

How to Live Green in Renovated Motherhouse

Campus Greening Programs

- Automotive
- Dining Service
- Energy Conservation
- Events
- Grounds
- Housekeeping
- Information Systems
- Medical Supplies
- Office Supplies
- Waste Management
- Water Conservation



“ I wish to address every person living on this planet. I would like to enter into dialogue with all people about our common home.”

How are we shaping the future of our planet?

Take Action Against Plastic Pollution

1. Ban Single-Use Plastic Foam Items in Your State
2. Tell Chick-Fil-A It's Time to Move Beyond Plastic
3. Tell Amazon It's Time to Move Beyond Single-Use Plastic Packaging
4. Tell Coca-Cola to Commit to Refillable Bottles
5. Tell Whole Foods to Stop Using Wasteful Plastic Packaging
6. Tell Target to Eliminate Plastic Bags
7. Protect the Planet from Plastic Pollution

UN environment programme

WORLD RESOURCES INSTITUTE

TACKLING PLASTIC POLLUTION:

Legislative Guide for the Regulation of Single-Use Plastic Products

Historic day in the campaign to beat plastic pollutionations commit to develop a legally binding agreement