



## Welcome to our Cheltenham Sustainability Education Centre PD Friday 19 April, 2024

We acknowledge Bunurong People of the Kulin Nation as traditional owners of this land.



SUSTAINABILITY • SCIENCE • GEOGRAPHY • STEM  
ECONOMICS & BUSINESS  
**Excursions & Incursions**  
Making learning fun and engaging since 1909



This presentation was delivered by Gould League General Manager Anne-Maree McInerney at a recent Teacher PD Day.

It is shared in the interest of helping to build capacity within the Education System. **We ask that you do not use it for commercial purposes or share it with others without our written permission.**

Should you require further information or wish for this to be delivered in your school as a PD for Teachers or built on it as a program for Students, please contact Gould League via [gould@gould.org.au](mailto:gould@gould.org.au) or Ph 9585 7860/0429 193 134.

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Celebrating 114 years of Environmental Education  
thanks to Victoria School Teacher Jessie McMichael







Our featured species for 2024 is the endangered Yellow Footed Rock Wallaby - *Petrogale xanthopus*, a much loved member of the Kangaroo and Wallaby family. They play a very important role as ecosystem engineers and contribute to the health of their local landscapes. By eating plants they control vegetation (important for preventing bushfires), spread the seeds of native grasses, and fertilise nutrient poor soils.



## 2024 KIDS CLUB MEMBERSHIP LEWIS MAXWELL

is a Member of the Gould League and has agreed to abide by the Gould League Wildlife Pledge.

I promise to:

- Care for and protect all wildlife, both plants and animals.
- Reduce, Reuse & Recycle to prevent waste and conserve natural resources.
- Show family and friends how to do these things.

Signed: \_\_\_\_\_

Date: \_\_\_\_\_

The Yellow Footed Rock Wallaby, can be found in rocky outcrops, boulder piles, cliffs, gorges and steep rocky slopes in semi-arid woodland in Eastern and Southern Australia. It is endangered due to competition for food and shelter from introduced herbivores such as goats, predation by introduced predators such as Foxes and Cats, habitat fragmentation, genetic risks of small, isolated colonies and catastrophic events such as wildfire and drought.

Gould League advocates for the protection of all species including the endangered Yellow Footed Rock Wallaby, so future generations can also enjoy them. Membership is but one way to show your support.

Thanks for being an Eco Warrior and supporting our work in 2024!

*Blair Odum*  
Blair Odum  
Gould League Chair



*Anna-Maree McInerney*  
Anna-Maree McInerney  
General Manager



# TEACHER 2023 MEMBERSHIP CERTIFICATE

## TEGAN RUSSELL

is a Teacher Member of the Gould League and Guardian of the Natural World  
committed to conservation and environmental education and protection.

2023 is the UN International Year of Millets, and to celebrate this amazing plant, we are featuring one of the many species that enjoy its seeds - the Eastern Ground Parrot (*Pezoporus wallicus*). Millets are incredible plants that not only withstand hot and dry climates but also suppress weeds and encourage healthy soil biota and microbes.

The Eastern Ground Parrot inhabits south-eastern Australia from southern Queensland through NSW to western Victoria. It also previously lived in South Australia, but has not been recorded since 1945. In NSW populations have declined due to land clearing and predation by foxes and cats. It's now contracted to islands of coastal or sub-coastal heathland and sedge land habitats.

The Eastern Ground Parrot is one of only five ground-dwelling parrots in the world. The others are the western ground parrot, the extremely rare Night Parrot, the Antipodes parakeet, and the highly endangered Kakapo from New Zealand.

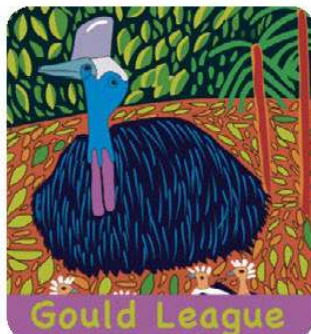
Thank you for your ongoing commitment to student environmental education and support of Gould League so we can continue to advocate for ALL native flora and fauna species, so future generations can also enjoy them!



BLAIR ODOM  
GOULD LEAGUE CHAIR



2023 celebrates the UN Year of Millets  
and the Eastern Ground Parrot



The Gould League was one of the first environmental organisations and was established in Australia in 1909. Originally called the "Gould League of Bird Lovers", it aimed to protect birds and their eggs. It was named after the famous naturalist and artist, John Gould who, together with his wife Elizabeth, an artist in her own right, illustrated the birds and mammals of Australia, a heritage treasured all over the world.

The Gould League now aims to encourage the protection and care of ALL native wildlife, including plants, where ever they are found. It does this through its wide range of environmental education programs, tools and publications. These contain fascinating information about the natural world and also provide a huge range of exciting, hands on activities for schools and community groups.

One of the most important commitments individuals, families, businesses, schools and communities can make for current and future generations, is to commit to environmental conservation and protection by following the Gould League Conservation Code. It will help to protect the plants and animals where ever you work, live and play.

### GOULD LEAGUE CONSERVATION CODE

Nature has many health benefits, so we encourage you to walk and play outdoors and visit your local parks, beaches and forests. And when you do, here are some guidelines that will help keep you and native wildlife safe.

#### 1. Tread carefully and watch the ground beneath your feet.

This is for both your safety as well as for the plants and animals well-being. Many can be crushed under your heavy feet, whilst some animals may be dangerous if disturbed suddenly (especially snakes).

#### 2. Do not pollute the environment. Use bio-degradable products and avoid plastics especially plastic straws and bags.

Do not put toxic materials on the land or into our waterways - they kill wildlife. Bottles, tins, plastic bags, straws, fishing line and other rubbish should be put in the nearest litter or recycling bin. Fishing lines can tangle around the legs and wings of many seabirds and marine life causing a painful death. Plastic bags and straws can also cause the death of native wildlife. By 2050, it is forecast more plastic in the ocean than fish - let's stop this prediction from becoming a reality!

#### 3. Avoid touching living things with your hands.

Some may be poisonous. Others may suffer from shock if handled. Touching a bird's nest can result in the parent bird abandoning it altogether. The best way to remember is: if you are not sure what will happen if you pick it up, leave it alone.

#### 4. If an animal is found outside its natural environment, return it quickly.

Most animals cannot survive outside of their special habitat for very long. Many (like lizards) have special territories and should be put back as close as possible to where they were found in the first place.

#### 5. If you have to look under rocks or logs, put them back.

These are special hiding, feeding and sheltering places for lots of small animals and plants which won't survive if exposed to sunlight for a long time. It's a bit like someone taking the roof off your house!

#### 6. Explore in small numbers.

Not only will you see much more, but your impact on the environment will be much less. Large groups of people will usually be noisier and will scare away all but the bravest animals.

#### 7. Check the legs and wings of any dead animals for bands and identification tags.

Scientists are trying to study the movement of many animals to work out how to best protect them. Send the tag to the return address indicated and you could be helping ensure the survival of a species.

#### 8. Control your pets to take care of wildlife.

If you have a pet dog or cat not only should you be kind to it and look after it well, you should also take responsibility for its behaviour. Dogs and cats cause serious problems for wildlife if allowed to run loose. Many ground-dwelling animals have no protection and their nests, homes or the animals themselves can be quickly harmed, damaged or destroyed.

When out walking dogs, keep them on a leash unless they are in a specially designed off lead park. Cats should wear a bell and be kept inside during dawn and dusk. If you own a rabbit, ensure they cannot escape their enclosure as they can breed very quickly with wild rabbits and create significant damage to native ecosystems.

#### 9. Help others to understand by your example

Showing and telling other people that you care for and respect the environment will help them to understand its importance.

#### 10. Tread lightly.

Take nothing but photographs and leave nothing but footprints (and even try to not leave these!)





# 2023 GOULD LEAGUE EXCURSION CERTIFICATE

SCHOOL NAME CLASS

Visited Ricketts Point Marine Sanctuary

17th April, 2022

**WE LEARNT ABOUT**  
The impacts of humans on our marine animals and plants and  
the importance of protecting our natural world.

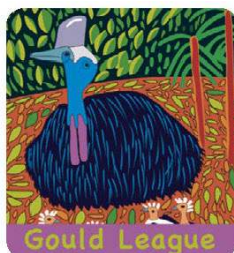
**WE PROMISE TO**  
Care for and protect our wildlife, beaches and oceans and  
show family and friends how to do these things

SIGNED

2023 is the UN International Year of Millets, and to celebrate this amazing plant, we are featuring Parrots who enjoy and are sustained by Millet seeds - in particular the Eastern Ground Parrot (*Pezoporus wallicus*). The Eastern Ground Parrot inhabits south-eastern Australia from southern Queensland through NSW to western Victoria. **The Eastern Ground Parrot is one of only 5 ground parrots in the world!** Thank you for your interest in the environment and for visiting us in 2023. We thank you for supporting ALL native flora and fauna so future generations can also enjoy them!



- The Gould League was one of the first environmental organisations and was established in Australia in 1938. It was the "Gould League of the World" - it aimed to protect birds and their eggs. It was named after the famous naturalist and artist, John Gould who, together with his wife Elizabeth, collected in his own right. Watch the birds and mammals of Australia, a heritage treasure all over the world.
- The Gould League now aims to encourage the public to care of ALL native wildlife, including plants, where ever they are found. It does this through its wide range of environmental education programs, trails and publications. These contain fascinating information about the natural world and also provide a huge range of useful, hands-on activities for schools and community groups.
- One of the most important environmental issues today is the loss of native wildlife. This can be caused by many factors, including habitat loss, climate change, and human activities. The Gould League Conservation Code is a set of guidelines to help protect the plants and animals which are our wildlife, and to help us to do this.
1. **Don't disturb the environment.** Use biodegradable products and avoid plastics especially plastic dishes and bags.
  2. **Do not pollute the environment.** Use biodegradable products and avoid plastics especially plastic dishes and bags.
  3. **Don't touch the animals.** Use biodegradable products and avoid plastics especially plastic dishes and bags.
  4. **Control your pets to take care of wildlife.**
  5. **Check the legs and wings of any dead animals for bands and identification tags.**
  6. **Report in small numbers.**
  7. **Check the legs and wings of any dead animals for bands and identification tags.**
  8. **Control your pets to take care of wildlife.**
  9. **Help others to understand by your example.**
  10. **Keep lights.**









Programs are engaging, hands on, explorative,  
FUN & year round-  
connecting students with the natural world, and  
helping them to reduce negative impacts such as  
waste – opening the door to new career pathways.  
and provides essential field work for VCE.





The more society are connected with the natural world, the more they want to fight to protect it. It's important to start them young!





# Being in nature and understanding nature can help to reduce Eco Anxiety

over half of young people

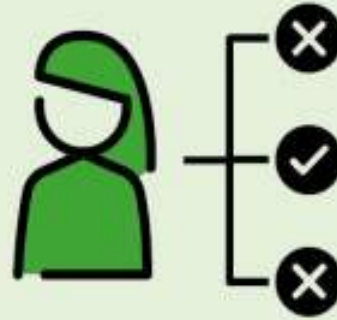


feel fearful of the future due to climate change (53%)

1 in 5



say climate change is affecting their daily lives (22%)



Many are worried they won't have access to the same opportunities their parents had due to climate change (42%)

One third



say climate change is the reason they are hesitant to have children (34%)



Almost half are worried whether they're personally doing enough to have an impact on climate change (46%) - while many feel their actions won't be enough to make a difference anyway (50%)





Ecosystem services delivered by biodiversity, such as crop pollination, water purification, flood protection and carbon sequestration, are vital to human well-being.

Globally, **these services are worth an estimated USD 125-140 trillion (US dollars) per year, i.e. more than 1.5 times the size of global GDP.**

More than half of the world's GDP (\$44 trillion) is highly or moderately dependent on nature.

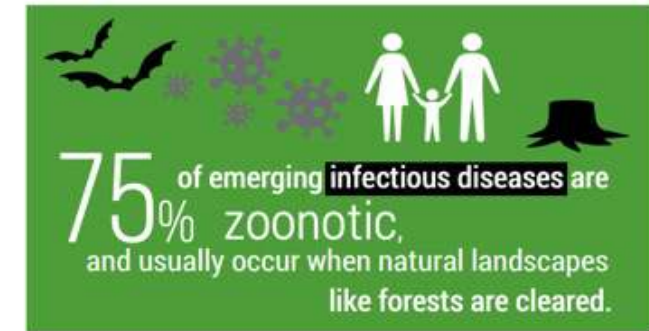


# Trees and Forests addresses 7 of the 17 SDG's

## Forests support sustainable livelihoods



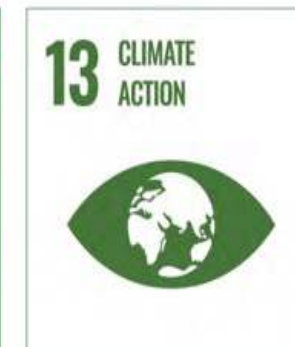
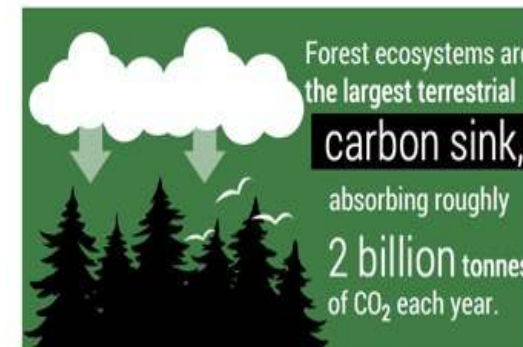
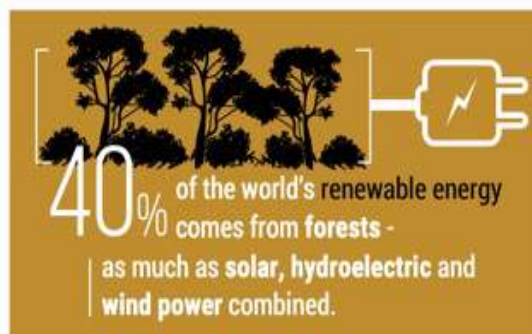
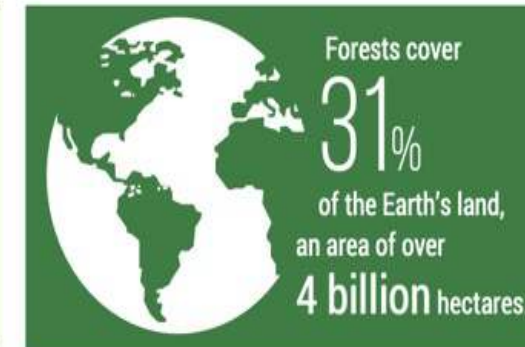
## Healthy forests mean healthy people





## Sustainably managed forests are resilient and renewable ecosystems

## All trees count







The ocean is our **planet's life support and regulates the global climate system.** It is the world's largest ecosystem, home to nearly a million known species and containing vast untapped potential for scientific discovery.

The ocean covers 71% of the Earth's surface.

Overall, the value of key **ocean assets** is estimated at \$24 trillion, equivalent to 3% to 5% of global GDP, while the value of derived goods and services generated by the ocean is estimated at \$2.5 trillion annually, **equivalent to the 7<sup>th</sup> largest economy globally.**



# MAPPING OCEAN WEALTH

## COASTAL PROTECTION

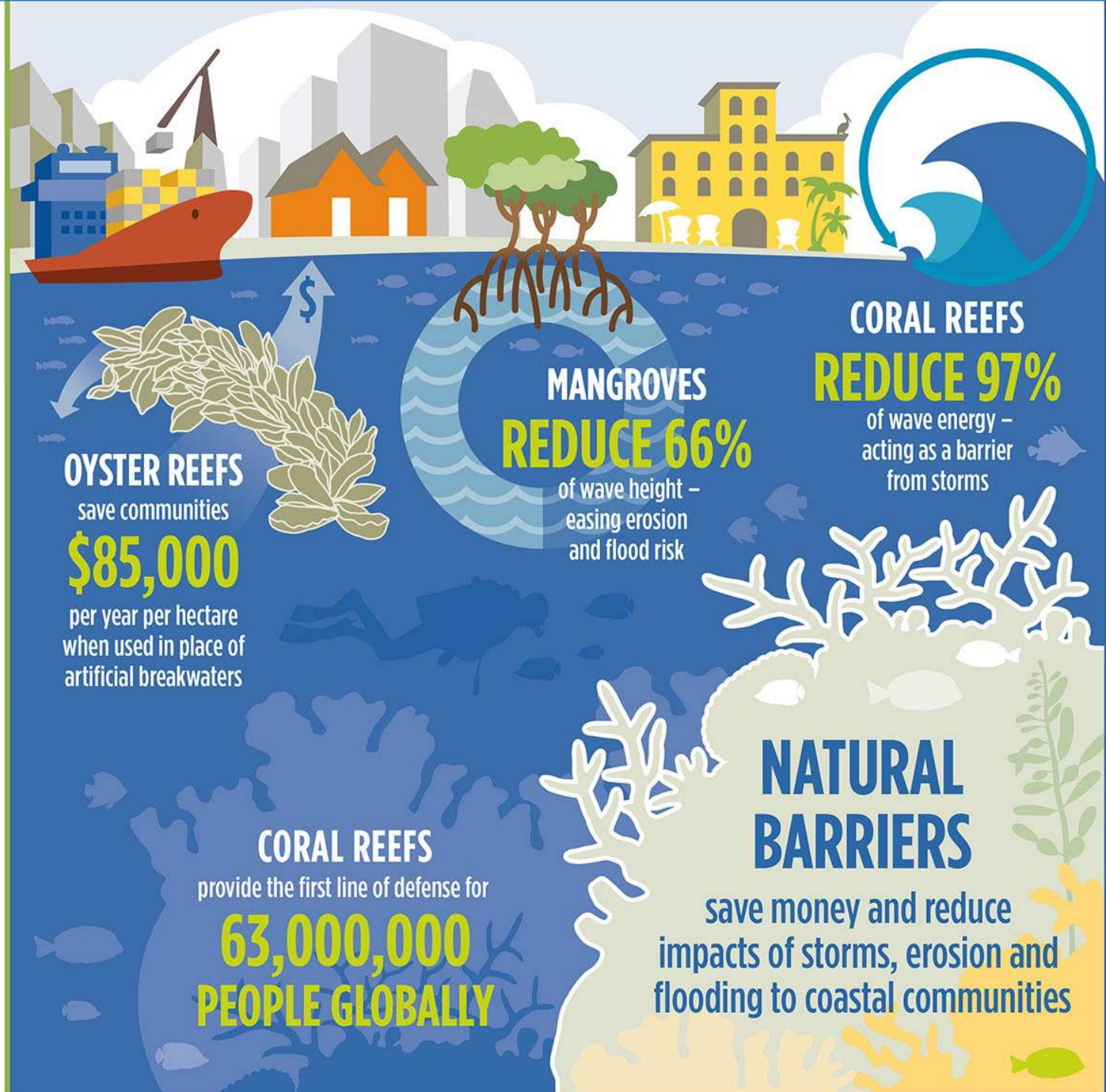
Nature is the first line of defense for coastal communities.

**Coastal communities, planners, engineers and investors**

should integrate natural solutions into coastal infrastructure projects.

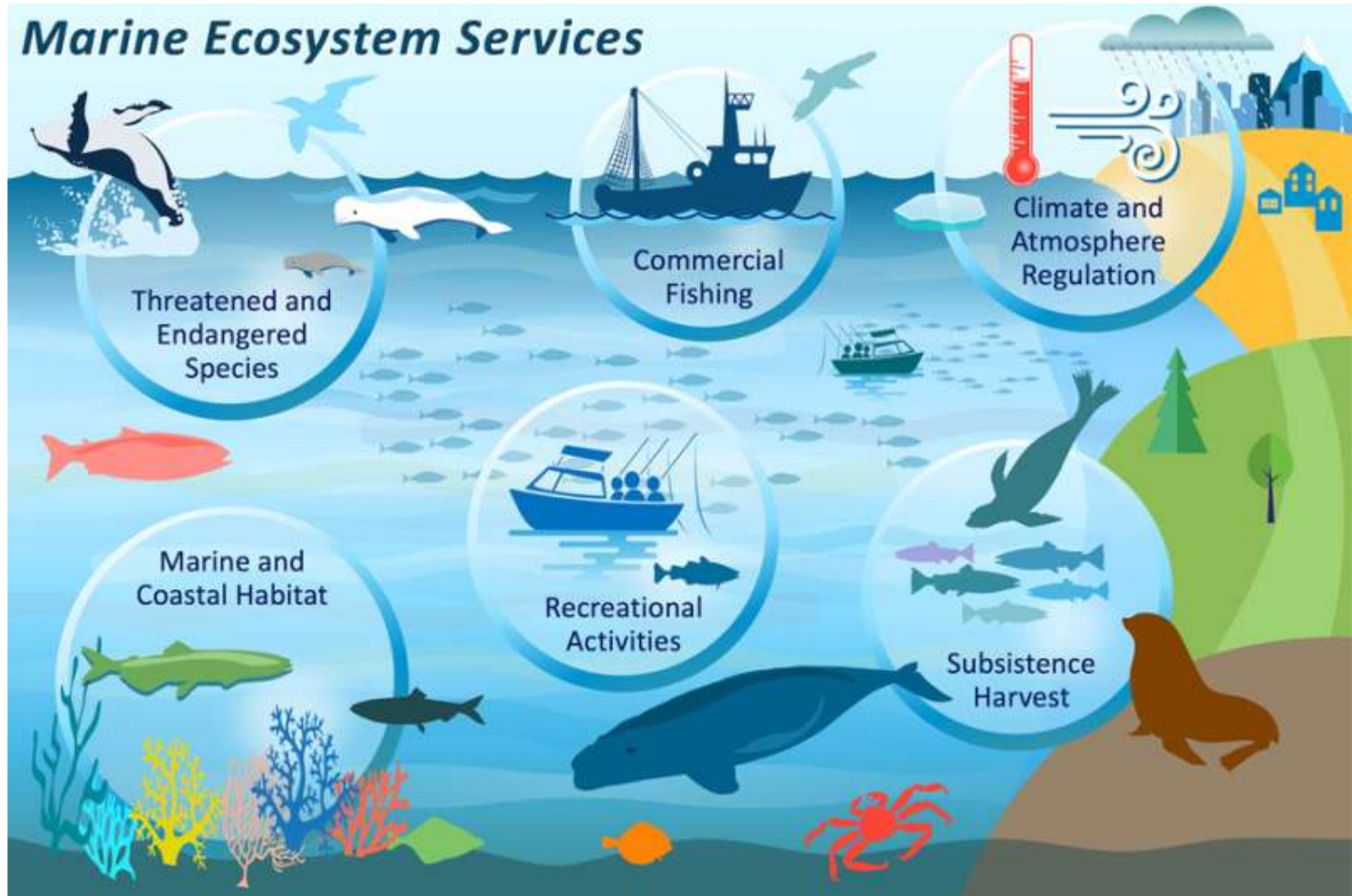
Mapping Ocean Wealth demonstrates what the ocean does for us today so that we maximize what the ocean can do for us tomorrow.

[oceanwealth.org](http://oceanwealth.org) @ocean\_wealth





# Marine Ecosystem Services





Nature provides the most significant blueprint for success. It has nurtured mother earth and all her inhabitants since the beginning of time!





# The GOOD the BAD and the UGLY of PLASTICS

Year 5 – 6 Incursion



**PLASTIC** is a word that originally meant “*pliable and easily shaped.*”

It only recently became a name for a category of materials called **polymers**.

The word polymer *means “of many parts.”*

Polymers are made of long chains of molecules.

Synthetic polymers are made up of long chains of atoms, arranged in repeating units, *often much longer than those found in nature.*

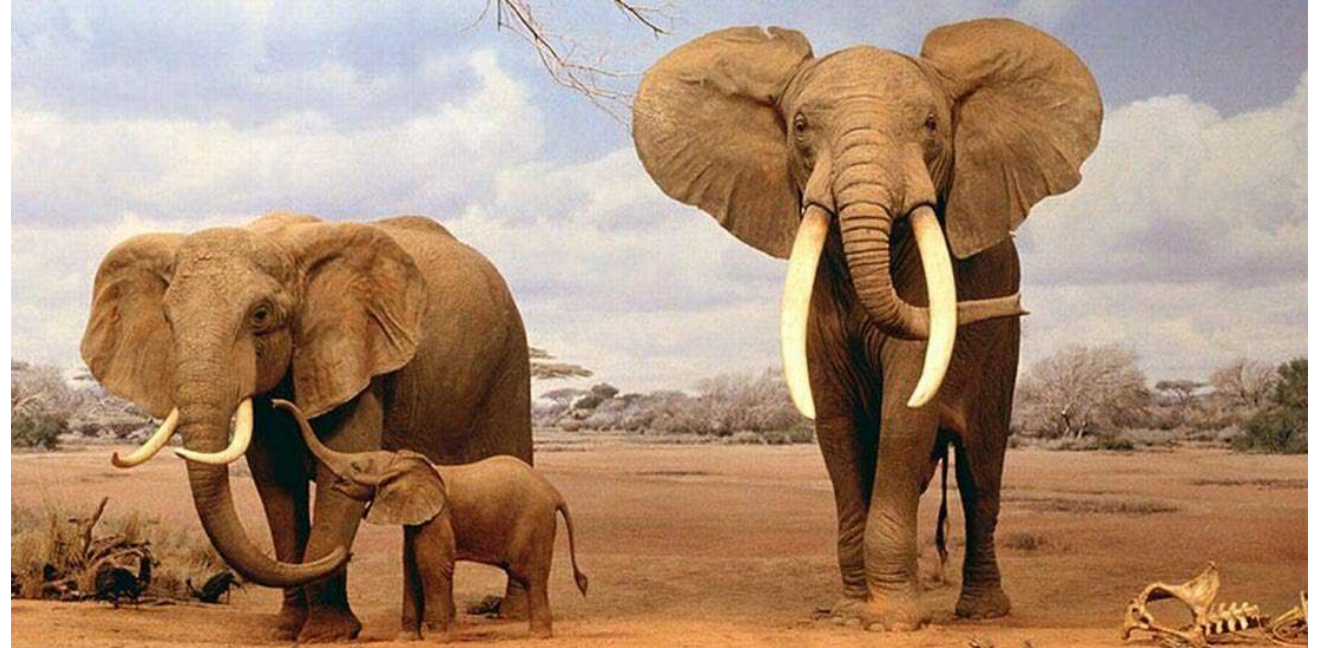
It is the length of these chains, and the patterns in which they are arrayed, that make polymers strong, lightweight, and flexible. In other words, it’s what makes them so *plastic.*

Polymers abound in nature. Cellulose, the material that makes up the cell walls of plants, is a very common natural polymer. Carbon atoms provided by petroleum and other fossil fuels also popular natural polymers.

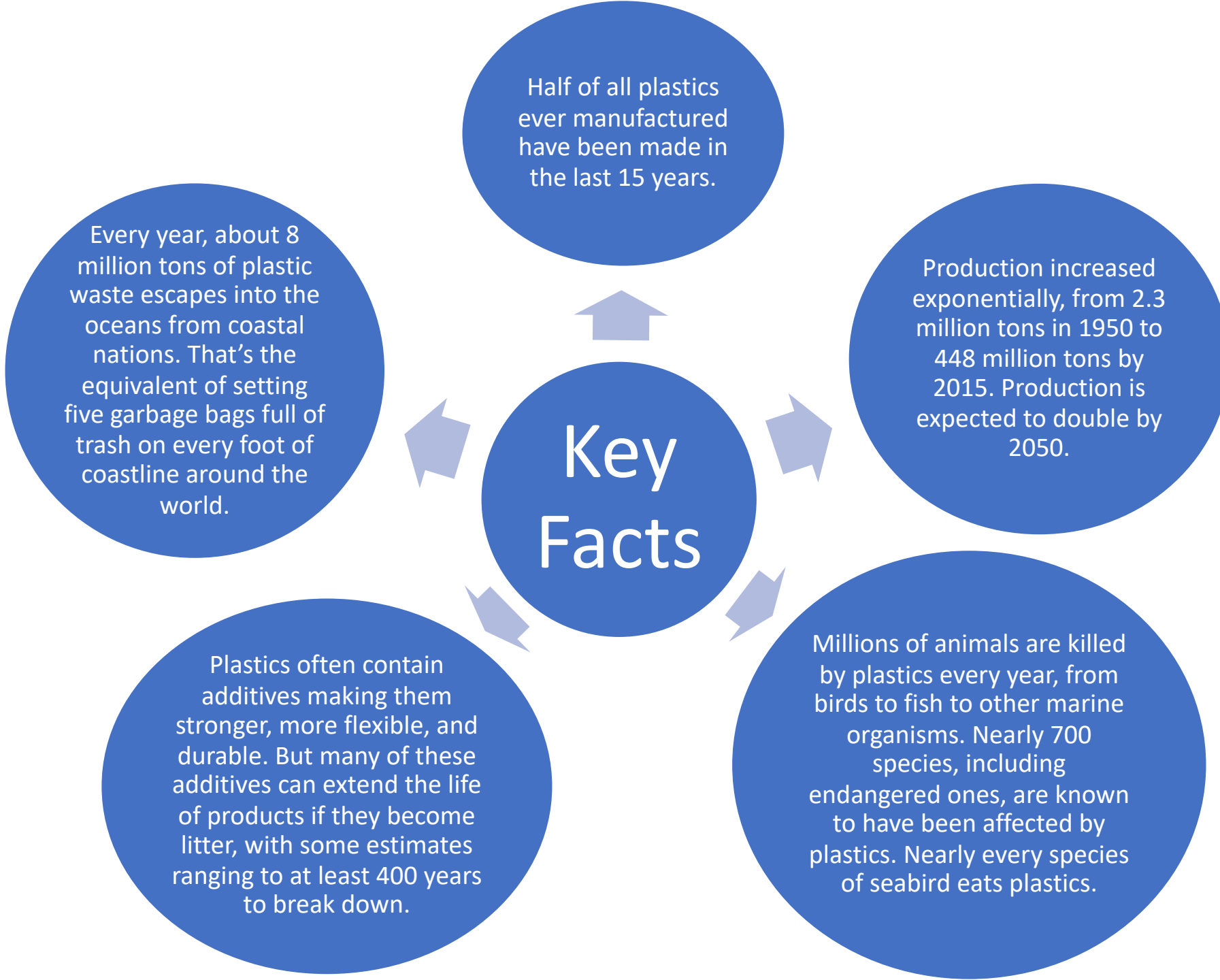
Polymers have become an essential part of our lives - for last 50 years plastics have saturated our world and changed the way that we live.



# What's the connection?









# The GOOD

**Plastic supports our lives each and every day.**

Plastic packaging helps protect and preserve goods, while reducing weight in transportation, which saves fuel and reduces greenhouse gas emissions.

Plastics revolutionized medicine with life-saving devices, made space travel possible, lightened cars and jet—saving fuel and saves lives with helmets, medical incubators, and equipment for clean drinking water.

## Pros

- Plastics are convenient
- Plastics are cheap
- Variety of different uses
- Hygienic packaging material
- Other packaging materials would increase product prices
- Products have a long durability with plastic wrappings
- It is durable
- Plastics are lightweight
- Odorless in most cases
- Plastic products could be used multiple times
- Plastics are not fragile
- Plastic has a long lifespan
- Many industries rely on plastics
- Processes around plastics have been optimized
- Potential eco-friendly plastics in the future
- There are even worse materials out there



# The BAD

## Cons

- Plastics hurt the environment
- Environmental dumping
- Non-renewable resource
- Not sustainable in the long run
- Water pollution
- Air pollution
- Acid rain
- Land pollution
- Littering
- Resource depletion
- Visual pollution
- Global warming
- Ocean pollution
- Soil pollution
- Endangerment and extinction of species
- Public health problems

A tube of exfoliating facewash or whitening toothpaste can contain 300,000 microbeads.

By 2050 scientists believe there will be more plastic in the oceans than fish.



“While only an estimated 3% of global plastic waste enters the ocean, plastic waste makes up 80% of all marine pollution, with 8-10 million metric tons ending up in the ocean every year.”

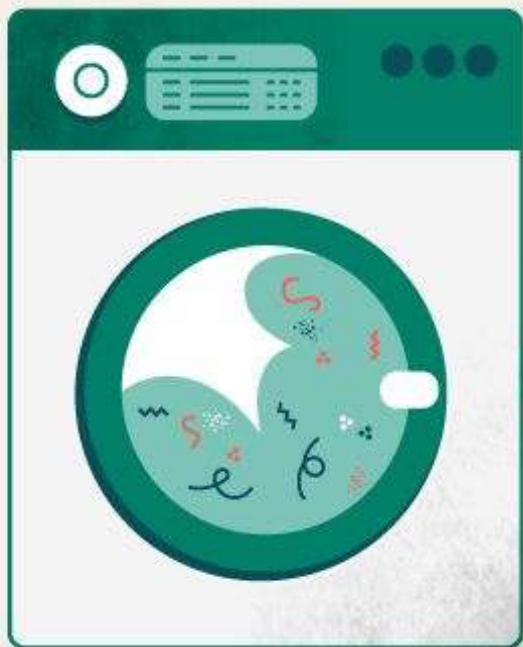
World Economic Forum - What Ocean Sustainability Means for Business Report



# Plastic Microfibers Polluting Our Planet

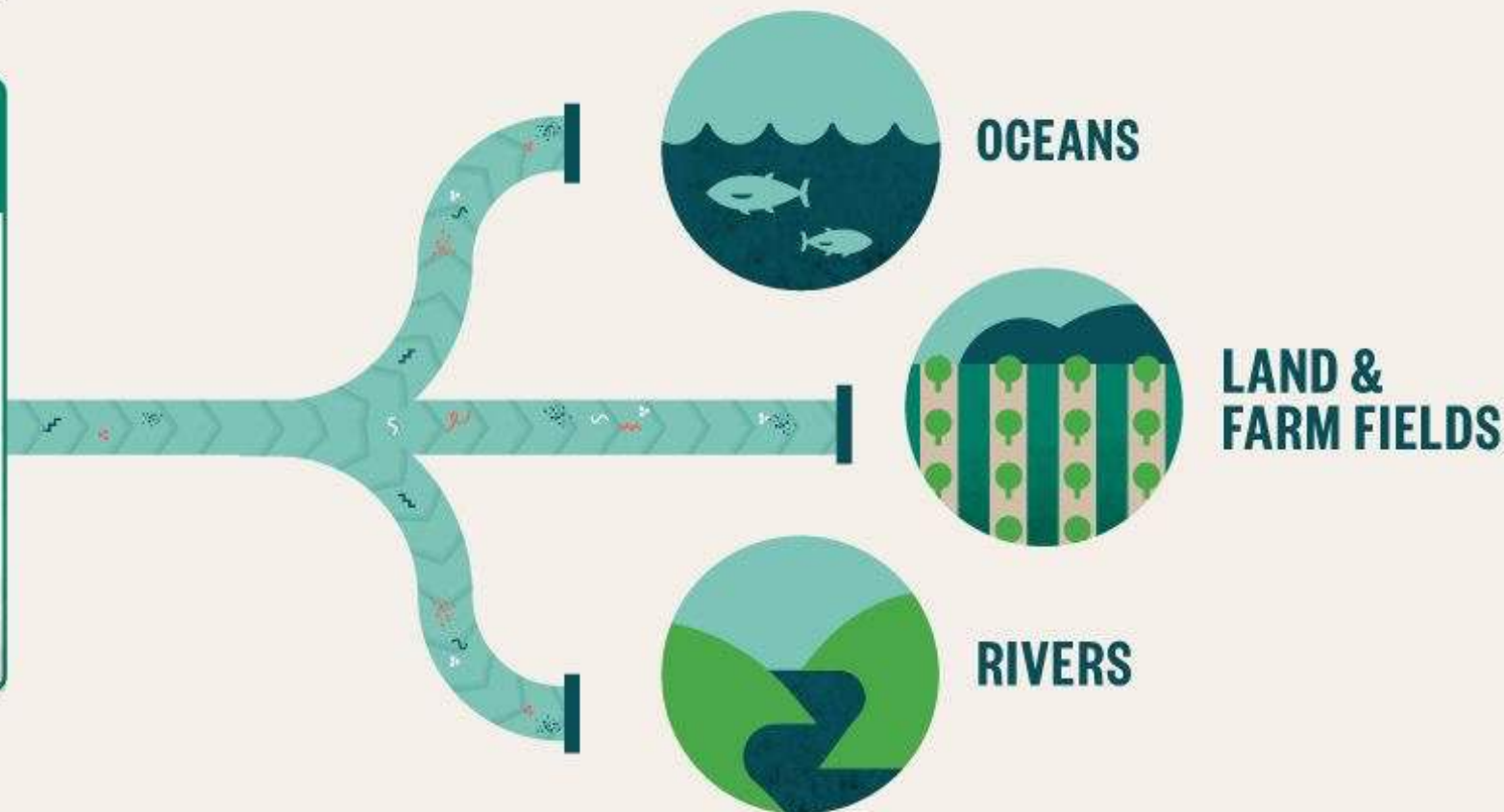
## OUR LAUNDRY

A single load of laundry can release  
**700,000** plastic microfibers



## POLLUTES

These plastic microfibers then contaminate our:





# Pew Centre research 2022 found **PAINT** was leading source of Microplastics worldwide



Accounting for 1.9 million metric tons of leakage globally into oceans and waterways occurs during painting—of buildings, ships, roadways and a huge range of other applications—and from wear and tear, paint removal and disposal of unused paint.

**The second largest source is tyre particles**, which were responsible for nearly 1 million metric tons of microplastic leakage in 2016. Vehicle tyres shed tiny particles during normal use.

**Pellets and textiles are the third and fourth largest sources, respectively.**

# Plastic in our oceans is causing the Water Cycle to rain microplastics



*Image credit: Krystal Greenwood/The Plastic Collective*



# The UGLY





# There is HOPE

Leadership + Innovation + Education + Investment



## Our plastic goals

By 2025 we will:

- Halve the amount of virgin plastic we use in our packaging and achieve an absolute reduction of more than 100,000 tonnes
- Collect and process more plastic packaging than we sell
- Ensure that 100% of our plastic packaging is designed to be fully reusable, recyclable or compostable
- Use 25% recycled plastic in our packaging







## Dove's beauty refillution

Buy once, refill for life. Dove has started a deodorant revolution with its first refillable stainless steel case. The refills use far less plastic, and the small amount used is 98% recycled. With a lifetime guarantee on the case, it's designed to be bought once and used for life.



## A world-first: Magnum's recycled plastic ice cream tubs

Magnum collaborated with supplier SABIC, to develop recycled plastic ice cream tubs in Europe that are food-grade and able to withstand freezing temperatures. This new technology uses low quality, mixed plastic waste that wouldn't otherwise be recycled. Magnum's new tubs – more than 7 million of them – are now going global.



## Tackling the black plastic problem

Most black plastic ends up in landfill because the colour pigments are very tricky for waste sorting systems to detect. In the US we partnered with plastics recyclers to develop new pigments that make black plastic recyclable. We've switched all our Axe, Lynx and TRESemmé black plastic bottles to the new technology.

# More innovation – Better Results





# Container Deposit Scheme (CDS) now underway

## What can I return?

Most aluminium, glass, plastic and liquid paperboard (carton) drink containers between 150mL and 3 litres are eligible. You can keep the lids on, we recycle them too.



## Check for the 10c mark

Look for the 10c mark on the drink container label. It is often located near the barcode.



There are some drink containers that are not eligible for a refund. Generally excluded containers are those that are less than 150mL and greater than 3 litres. Many of these containers can still be recycled in your kerbside bins.





# Replas REDcycle Program – Soft Plastics partnership with Woolies and Coles

how to REDcycle

1. collect



2. drop



3. recycle





# Innovation in supply chains to use recycled materials



Positive impact since 2012



224

METRIC TONS OF WASTE  
FISHING NETS COLLECTED



2,200

FAMILIES NOW HAVE  
ACCESS TO FINANCE



64,000

PEOPLE ENJOYING A  
HEALTHIER ENVIRONMENT







We can make recycling FUN – VW Fun Theory







## **A circular economy for plastic**

The circular economy considers every stage of a product's journey – before and after it reaches the customer. This approach is not only vital to stop plastic pollution, it also offers strong economic, social, and climate benefits. By 2040 a circular economy has the potential to:

- reduce the annual volume of plastics entering our oceans by 80%
- reduce greenhouse gas emissions by 25%
- generate savings of USD 200 bn per year
- create 700,000 net additional jobs

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The circular economy considers every stage of a product's journey – before and after it reaches the customer.



# **To create a circular economy for plastic we must take three actions:**

## **Eliminate**

Eliminate all problematic and unnecessary plastic items

## **Innovate**

Innovate to ensure that the plastics we do need are reusable, recyclable, or compostable.

## **Circulate**

Circulate all the plastic items we use to keep them in the economy and out of the environment

The transition to a circular economy where all materials are able to be collected and recycled/upcycled - is dependent on how individuals and organisations learn to innovate and apply what they've learned in the real world.

**The education sector, from K to postgraduate study, plays a vital role in ensuring students of all ages are equipped with the key skills and knowledge to apply circular thinking in their chosen careers.**





# Incursion Activities

**Module 1**  
OCEAN OF THE FUTURE  
Virtual Reality Experience and  
Poster Design

- Students will use the virtual reality experience to gain an insight into the problems caused by plastic waste entering our oceans and will develop a Call to Action in the form of a Poster in terms of steps they and their fellow students can follow to prevent this.

**Module 2**  
Preventing waste in our  
Oceans incorporating Marine  
**Timeline Activity**

- Students will discover how waste enters the oceans and explore what happens to it when it gets there and the impact it has on the marine environment. They will also learn actions that can be taken by individuals and communities to prevent this.

**Module 3**  
How we can upcycle  
waste before it gets into  
our oceans

- In this module students will explore the use of waste materials as a resource for design and production of alternate products and have an understanding of the negative and positive impact that human actions can have on the marine environment.

**Call to Action**

- Students are empowered to create positive change that will benefit our shared environment. Visitation certificate/poster available for classroom.



# Curriculum Links

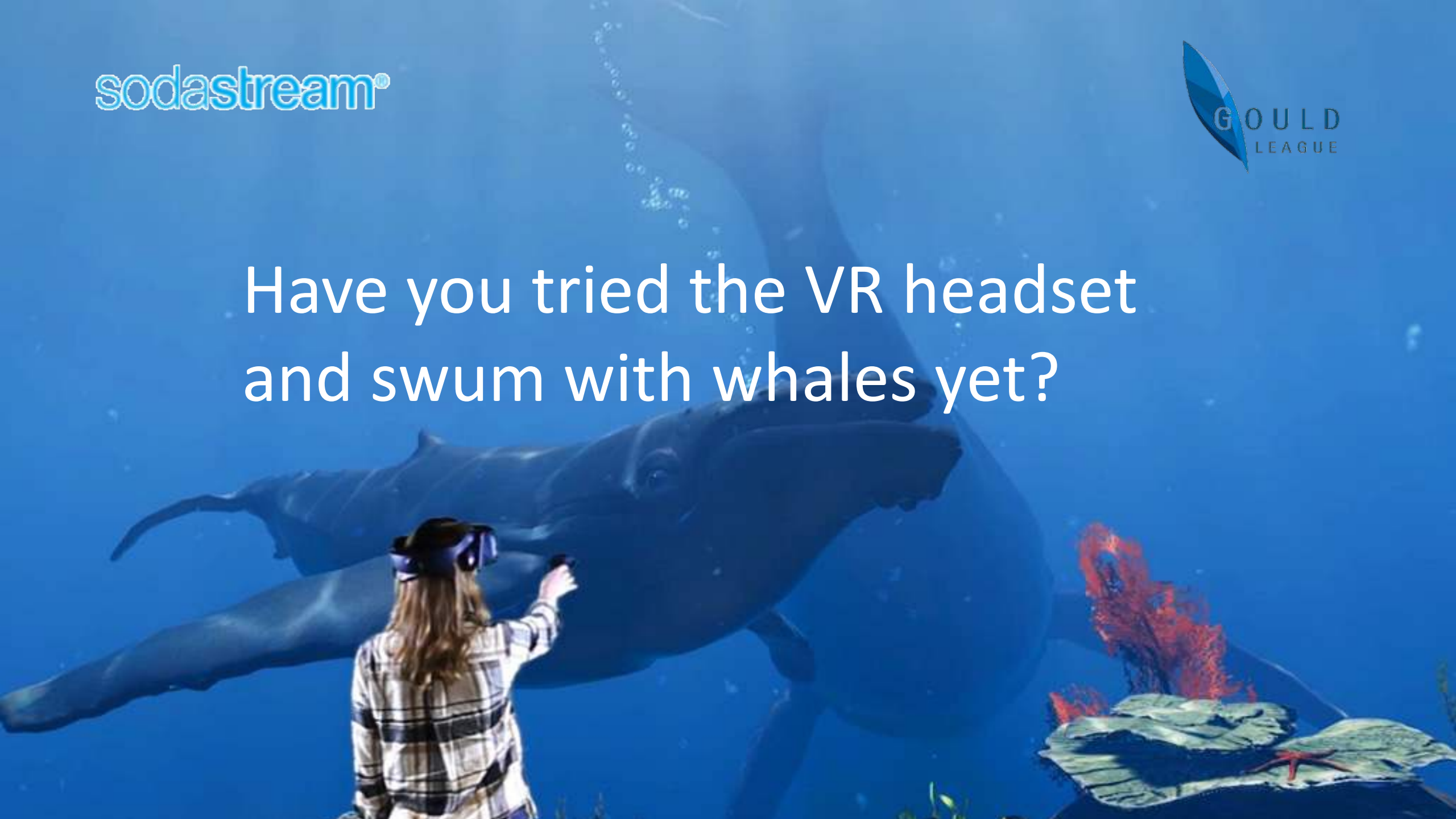
- **Civics and Citizenship: Citizenship, Diversity and Identity**
  - Investigate how people with shared beliefs and values work together to achieve their goals and plan for action (9VCCC016)
  - Examine the concept of global citizenship (VCCC017)
- **Design and Technologies: Technologies and Society**
  - Investigate how people in design and technologies occupations address competing considerations, including sustainability, in the design of solutions for current and future use (VCDSTS033)
- **Design and Technologies: Creating Designed Solutions**
  - Negotiate criteria for success that include consideration of environmental and social sustainability to evaluate design ideas, processes and solutions (VCDSCD041)
- **Economics and Business: Consumer and Financial Literacy**
  - Consider the effect that the consumer and financial decisions of individuals may have on themselves, their family, the broader community and the natural, economic and business environment (VCEBC005)
- **Geography: Geographical Concepts and Skills**
  - Describe and explain interconnections within places and between places, and the effects of these interconnections (VCGGC087)
- **Geography: Geographical Knowledge**
  - Factors that influence people's awareness and opinion of places (VCGGK097)
- **Science: Science Understanding**
  - The growth and survival of living things are affected by the physical conditions of their environment (VCSSU075)
- **Science Understanding: Chemical Sciences**
  - Changes in materials can be reversible, including melting, freezing, evaporating, or irreversible, including burning and rusting (VSSCU077)
- **Science: Science Inquiry Skills**
  - Communicate ideas and processes using evidence to develop explanations of events and phenomena and to identify simple cause-and-effect relationships (VCSIS088)



sodastream®



Have you tried the VR headset  
and swum with whales yet?



# thank you!

For further information contact

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**[www.gould.org.au](http://www.gould.org.au)**

