

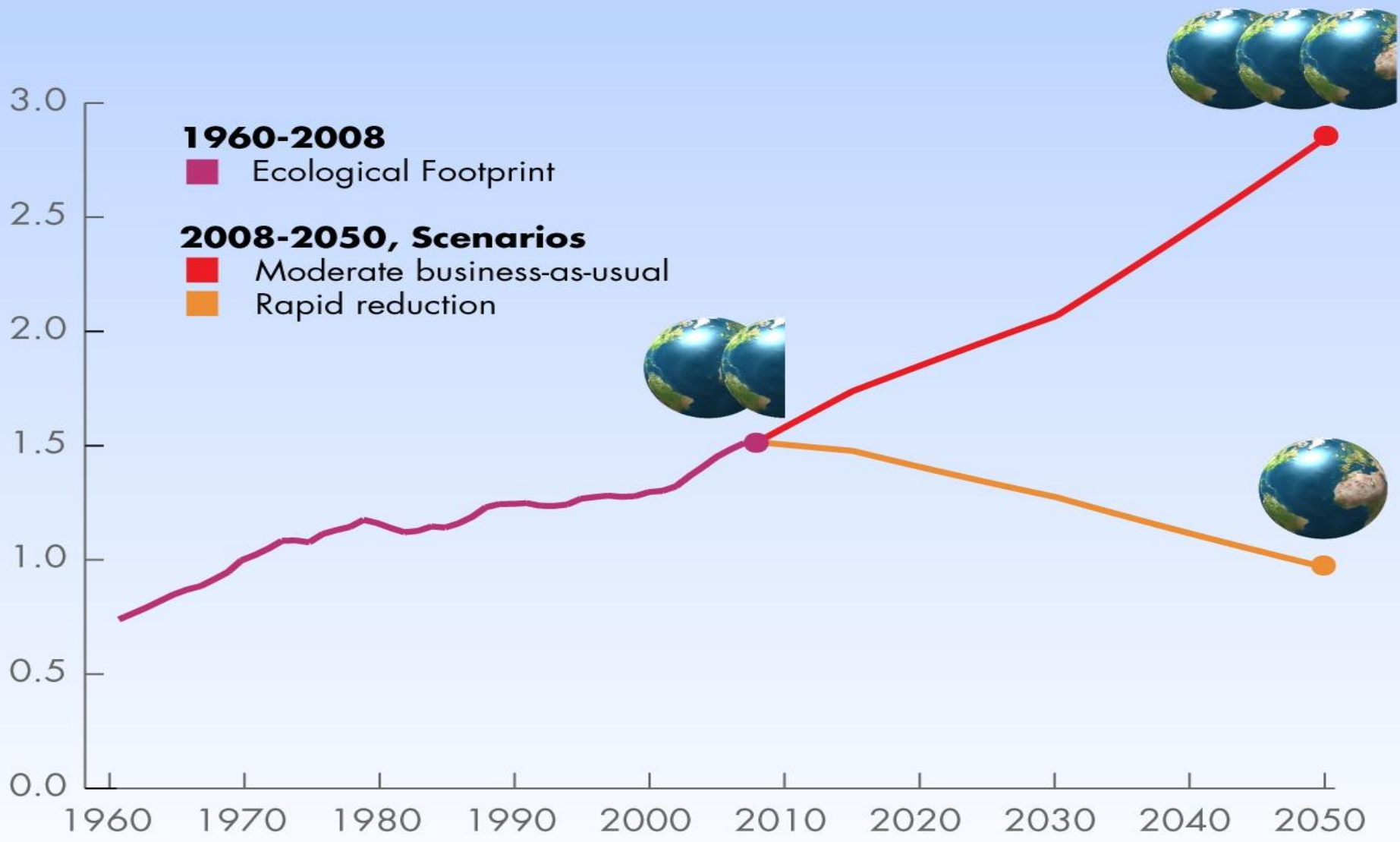


Topic of Discussion

“Restoring the Earth”

Presented by
Plan B Project Team

Plan B 4.0: Mobilizing to Save Civilization
by Lester R. Brown



y-axis: number of planet earths, x-axis: years

Source: Global Footprint Network



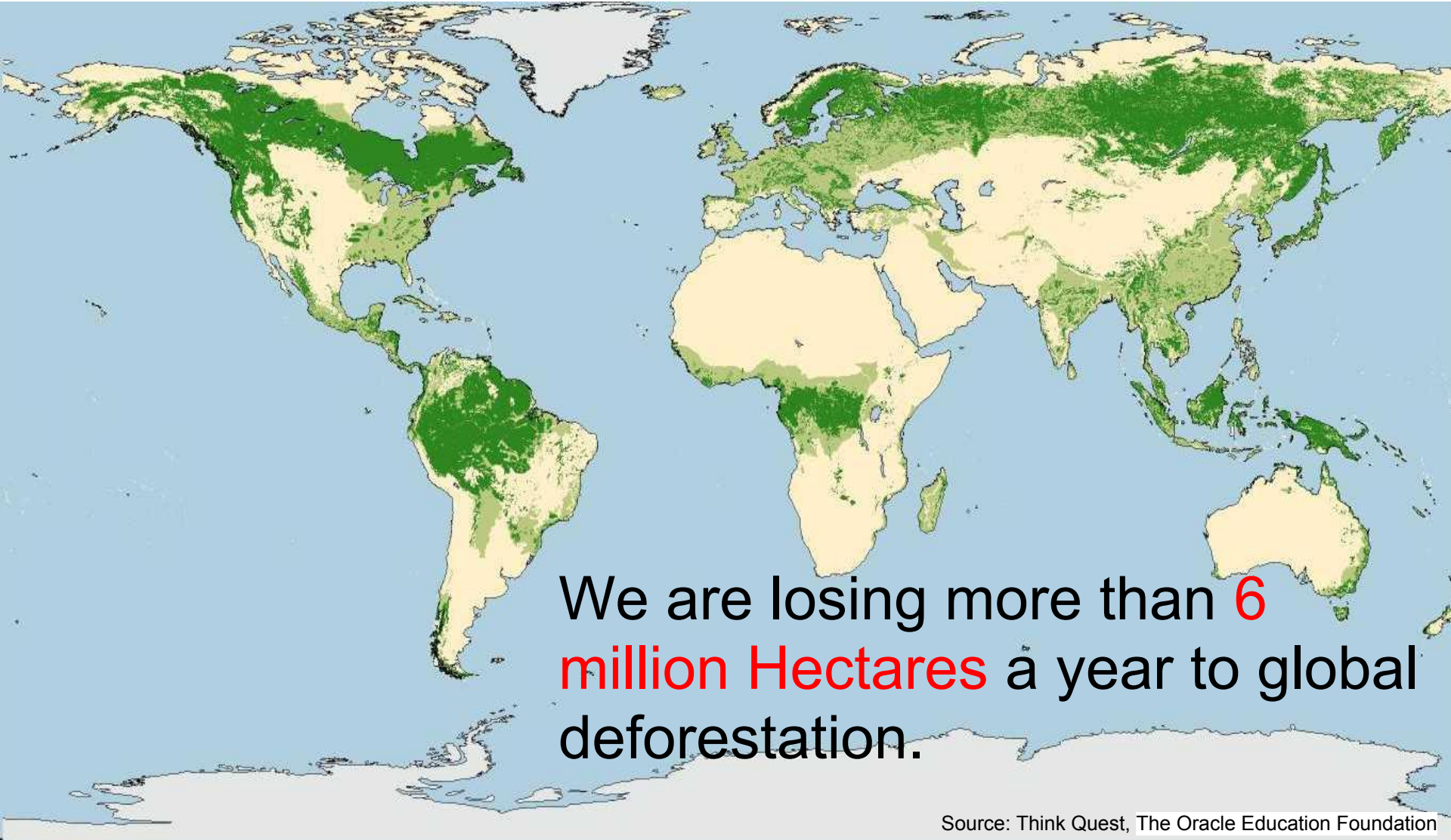
Deforestation at Its Worst



Source:NASA



Protecting the Trees



We are losing more than **6 million Hectares** a year to global deforestation.

Source: Think Quest, The Oracle Education Foundation



Facts About Trees

27%

Property
Value
Increase

Benefits of Trees

A healthy tree can increase your property value by as much as 27 percent.

The net cooling effect of a young, healthy tree is equivalent to ten room-size air conditioners operating 20 hours a day.



23,000

There are over 23,000 different kinds of trees in the world.

Source: Trees of Strength, NC State University, 2001



Trees and the Environment



We all know trees benefit the environment, but did you know just how large of a role they play in keeping Mother Earth clean?

Over the course its life, a single tree can absorb one ton of carbon dioxide.

Trees help our soil remain healthy by reducing soil erosion and by creating a soil climate suitable for microorganism to grow.

A single tree produces approximately 260 pounds of oxygen per year.

Disasters that can be avoided thanks to trees



Mudslides



Dust Bowls



Flooding

Source: Trees of Strength, NC State University, 2001



What We Are Doing with Our Trees

Use of wood extracted from the world's forests:

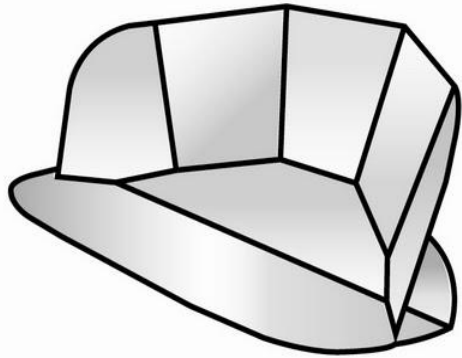


Source: Do You Know The Facts?

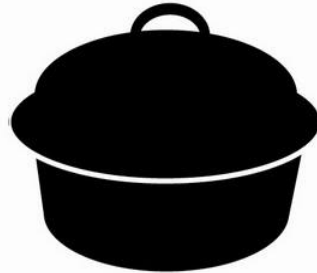


Substitutes to Firewood: Solar Cookers

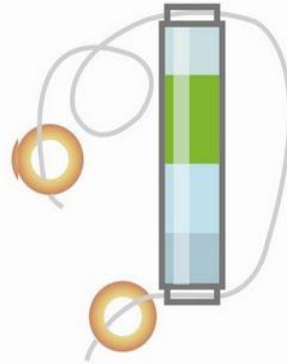
HOW IT WORKS



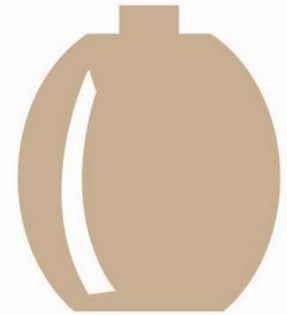
Lightweight, portable reflective cooker



Cooking pot



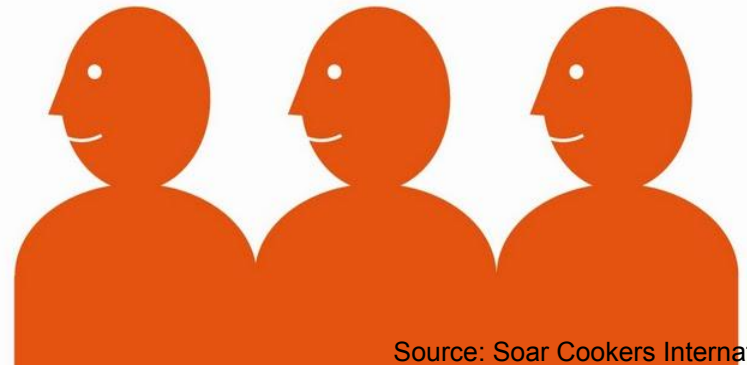
Water Pasteurization Indicator (WAPI)



Ceramic container for pasteurized water



Teacher/Trainer to instruct and inform users



Source: Soar Cookers International



LOGGING PRACTICES



CLEAR CUT



SLASH AND BURN



CONVENTIONAL



REDUCED - IMPACT

Source: University of Connecticut



milliontreesNYC™

A PLANYC INITIATIVE WITH NYC PARKS AND NEW YORK RESTORATION PROJECT

Three steps:

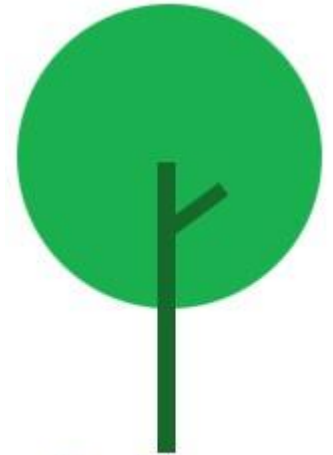
Planning, **Procurement**, and **Planting**

60% of the initiative's million trees along city streets are planted by the **New York City Parks Department and partners**

40% is planted by MillionTreesNYC lead co-partner **NYRP**

Plant 10,000-14,000 trees a year,
increasing the urban forest by 20% in the end.

Trees typically cost from \$100 to \$1,500 each due to the need of maturity and resilience, this includes ground excavation and preparation.



milliontreesNYC
A PLANYC INITIATIVE WITH NYC PARKS AND NEW YORK RESTORATION PROJECT

0	7	5	7	3	8	6
TREES PLANTED						

Source: Million Trees NYC



Soil Erosion



The first meter of soil
contains over 1700

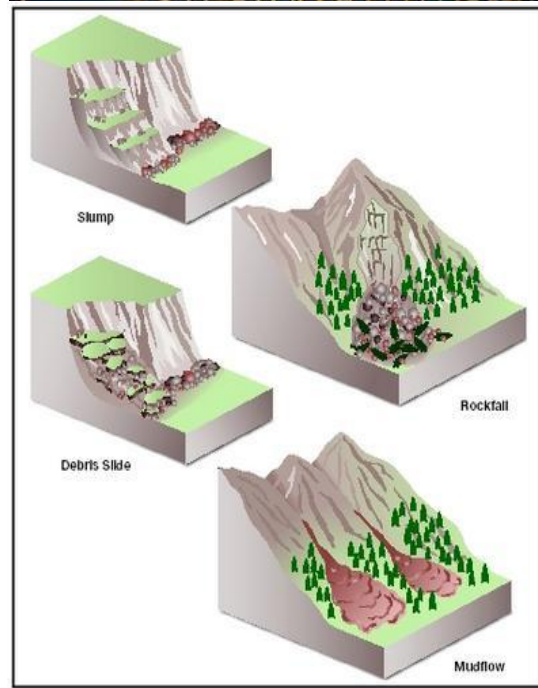
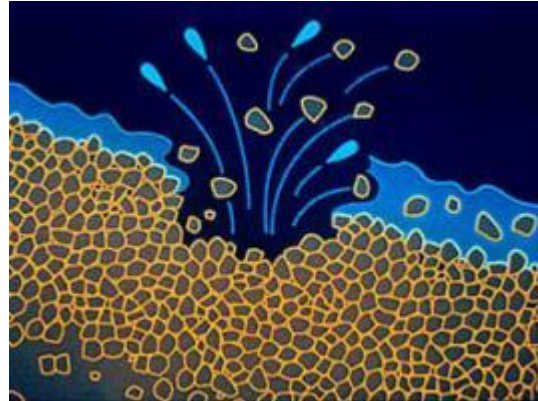
Gigatons of Carbon

Source Wordpress.com



Current Causes of Soil Erosion

- **Surface Erosion**
Caused by overgrazing of animals, rain, or wind strip the surface of soil.
- **Fluvial Erosion**
Erosion caused by rushing waters
- **Mass-movement Erosion**
Erosion caused by gravity and earthquakes/heavy rain and hail
- **Streambank Erosion**
Erosion caused by the edges of bodies of water



Source: The New Zealand Encyclopedia



No-Tilling Methods

No tilling (I.E. no plowing) methods use seed drills to **precisely place a seed** into a hole, without overturning excess soil to do it

Benefits include:

- **More nutrients** are retained in the soil
- **Less energy/labor** used to create the same number of crops
- **Keeps protective vegetation** alive to fixate nitrogen and sequester carbon
- **Retains more soil water** and can increase crop size/yield



Source: Motherearthnews.com



Native Plant Projects

Different organizations are re-foresting the land by **returning native plant life** to the soil.

Native plants help keep the ecosystem in balance, by not choking out other life and causing more problems than it solves.

Places that have these projects include the Lower Rio Grande Valley and Housatonic, Massachusetts



Source:Project Native



Great Green Wall Project

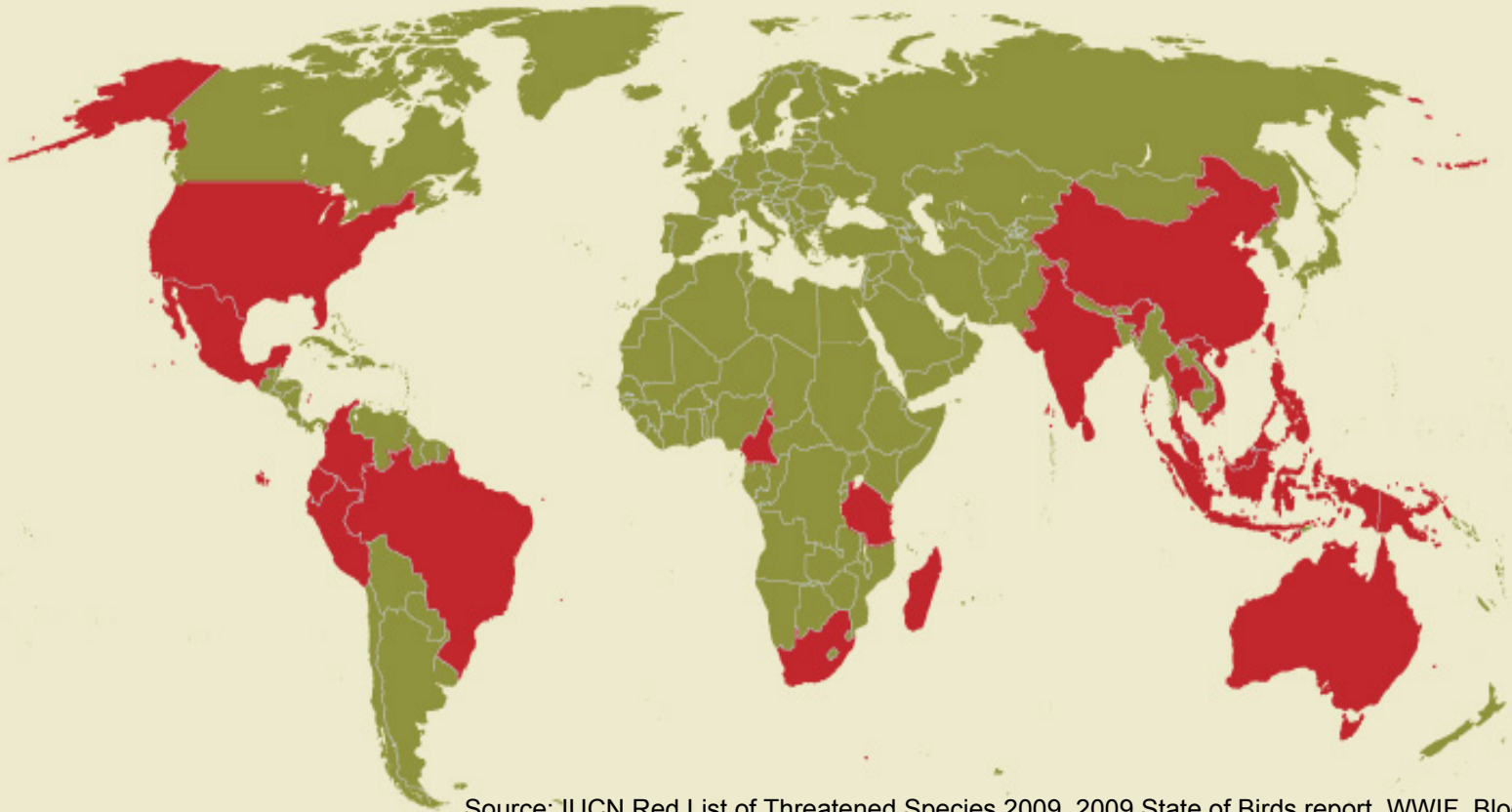


Source: NASA



ENDANGERED SPECIES

About 900 species of plants and animals have gone extinct in the last five centuries, and more than 10,000 others are now on the verge of joining them. Many will go extinct in a **DECADE.**



Source: IUCN Red List of Threatened Species 2009, 2009 State of Birds report, WWF, Bloomberg, PBS



Global Biodiversity Hotspots

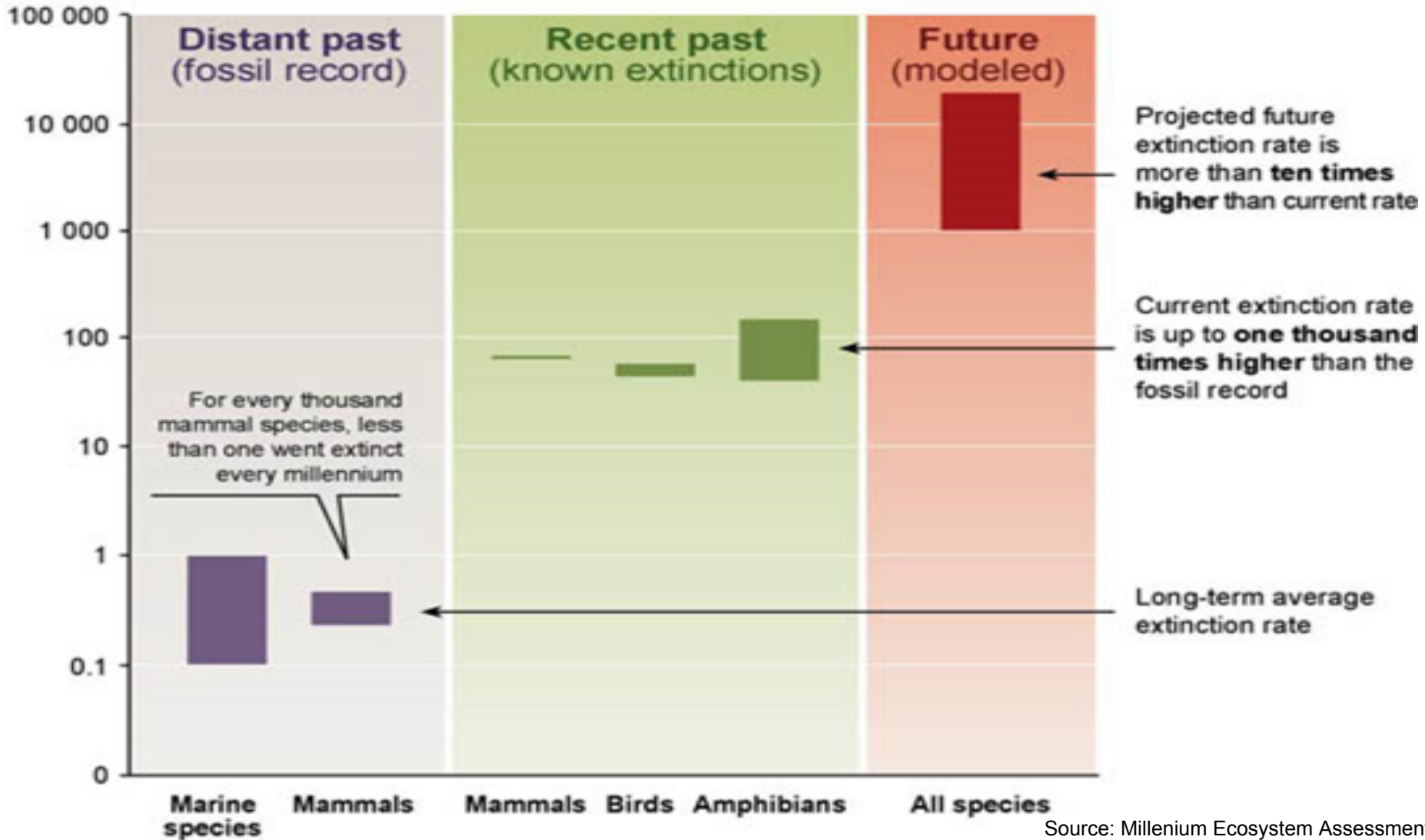


Source: Pearson Education



Human Induced Extinctions

Extinctions per thousand species per millennium



Africa's Western Black Rhino Declared Extinct June 2013

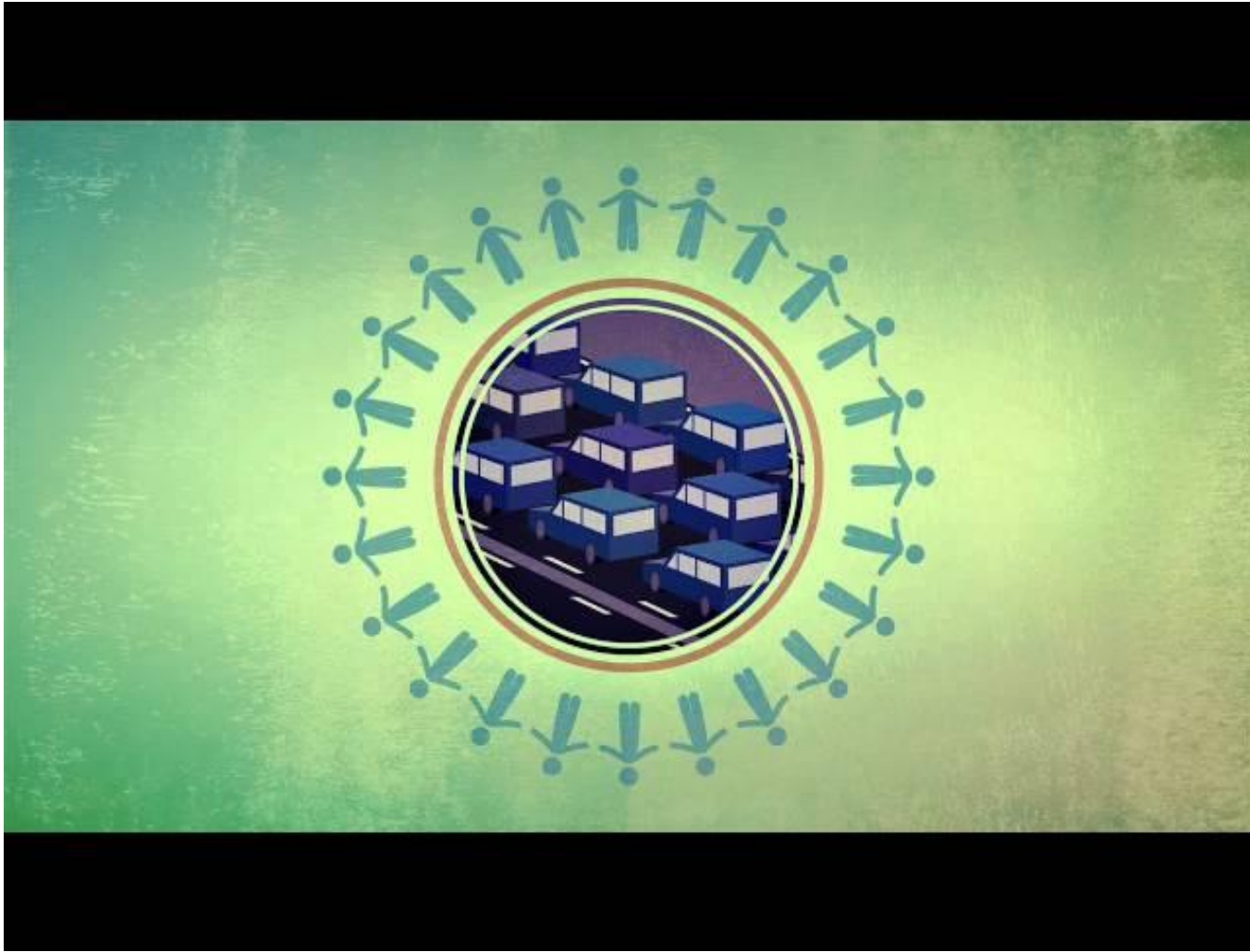


Source: IUCN



United Nations

Bringing Education and Environment to All



Source:
UNESCO



National Wildlife Federation

Adopt an Animal



Through a one time donation, the National Wildlife Foundation provides **food, protection, and care** for endangered species all over the world.

Source: National Wildlife Federation

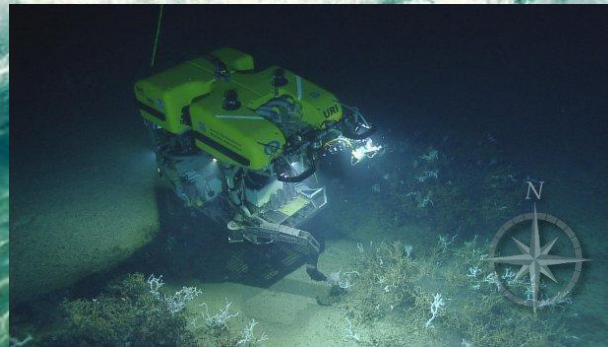


Oceans: Our Biggest Source of Biodiversity



50-80% of the world's animal life is found in the ocean (A potential of over 50 Million)

Less than 10% of the oceans have been explored by humans



There are over 1 million species of marine plant life known, contributing 50-85% of the world's oxygen supply

Source: Marine Bio.org and EarthSky.org





MARINE TOURISM

Tourism is the world's largest industry

The marine tourism industry provides **200 million jobs** worldwide

LIVELIHOODS

90%

of people who derive livelihoods from fishing live in developing countries

about **350 million jobs** are linked to the oceans globally

COASTAL PROTECTION

Wetlands seagrass beds, mangroves and coral reefs are a natural defense to protected coastline



BENEFITS OF HEALTHY OCEANS GLOBALLY

FOOD



1 Billion people depend on fish for their primary source of protein

CLIMATE

5X more carbon is stored by coastal habitats than by tropical forests

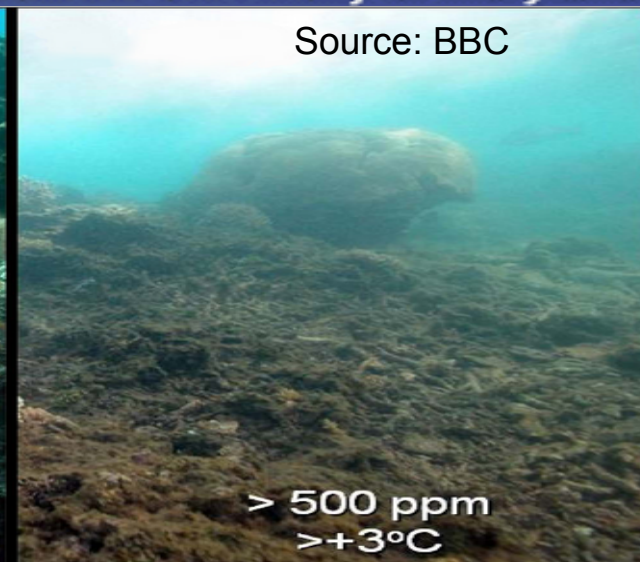
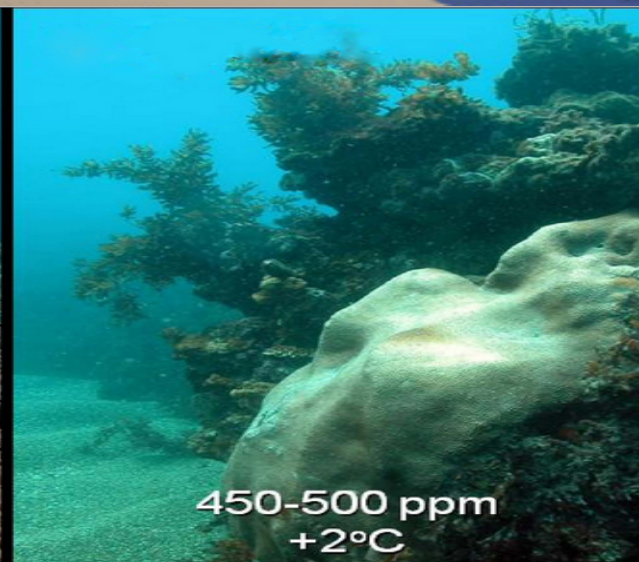
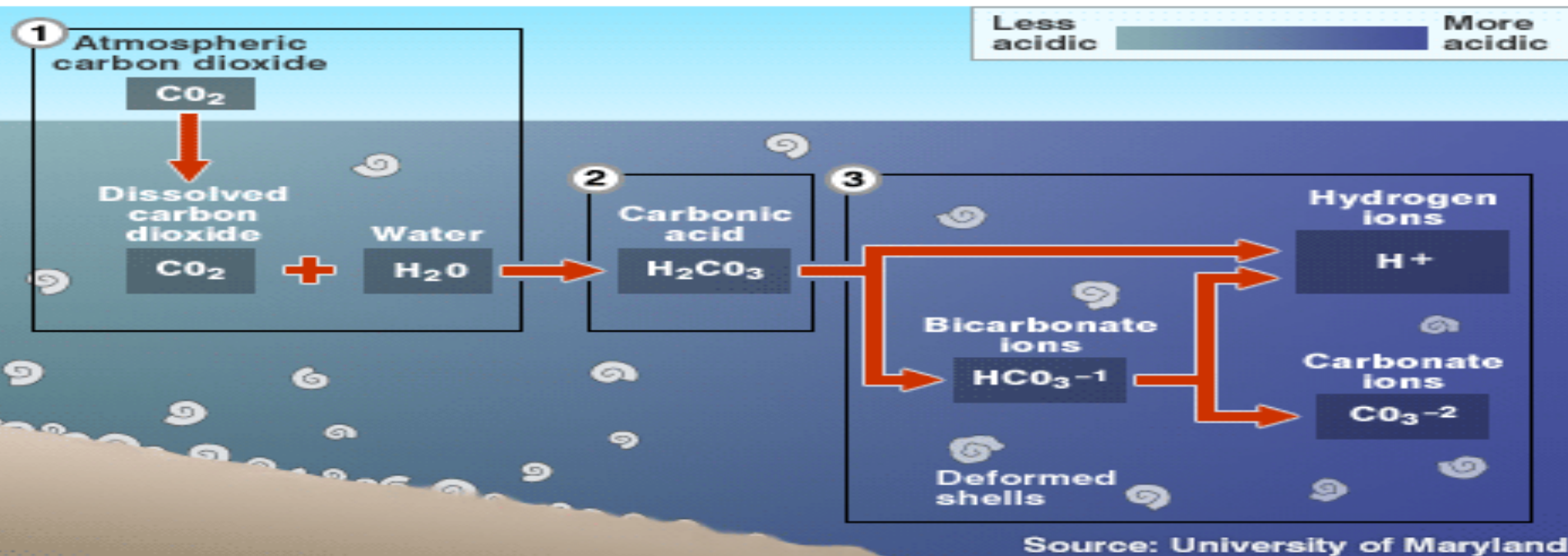


RESILIENCE

Healthy oceans will better be able to cope with negative impact



OCEAN ACIDIFICATION



Restoring Fish Reserves



MORE THAN JUST A DROP IN THE OCEAN

- Already dead
- Areas of concern

Dead zones are rapidly increasing as oceans warm

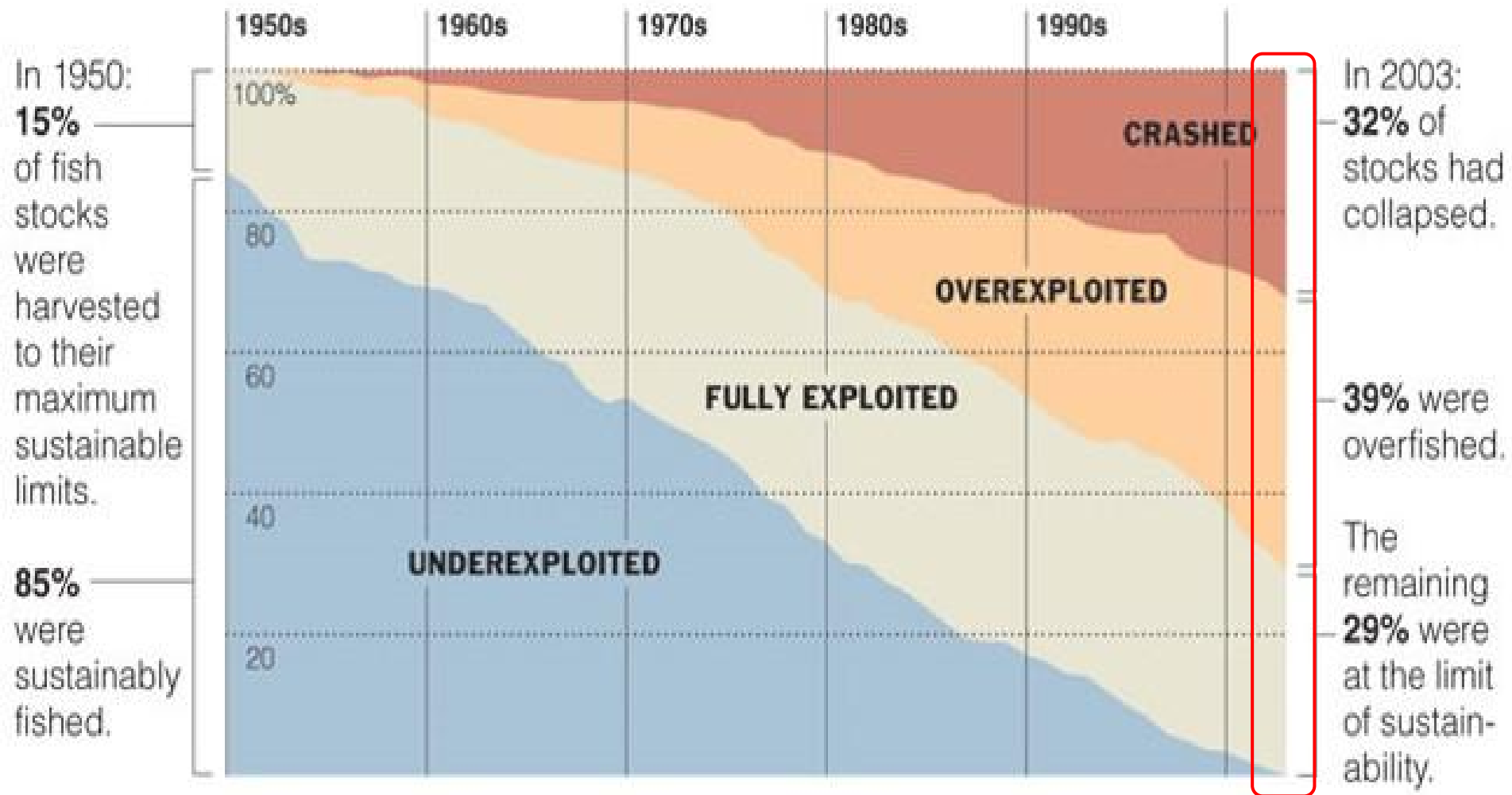
- They are caused by excess nutrients and warming waters.
- The zones can suffocate fish, squid and other marine life.
- There are more than 400 ocean dead zones in the world's seas.
- Waters around Tasmania and near Perth were recently included on the list.

Source: Youngstown State University



At the Breaking Point

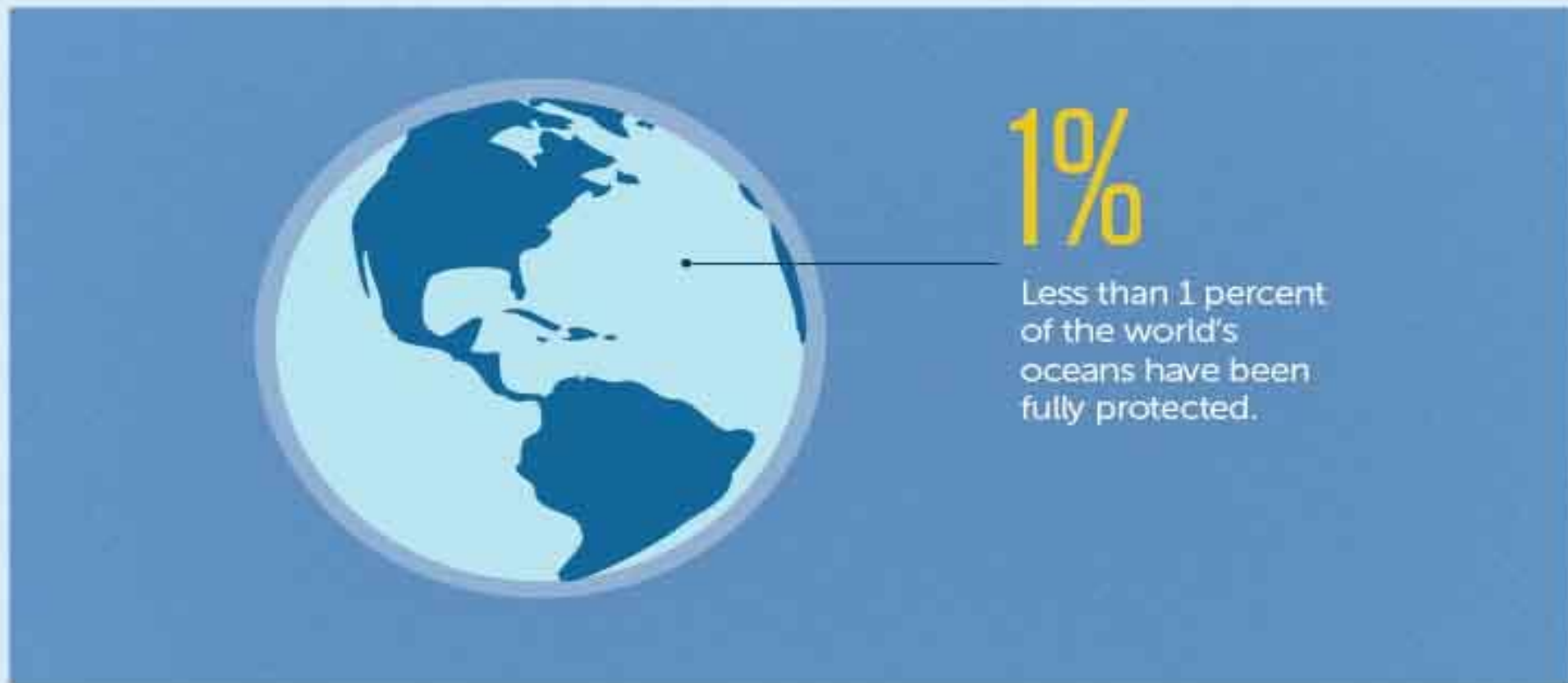
The condition of the world's fisheries has declined drastically because of overfishing.



Source: Sea Around Us Project



Marine Protected Areas



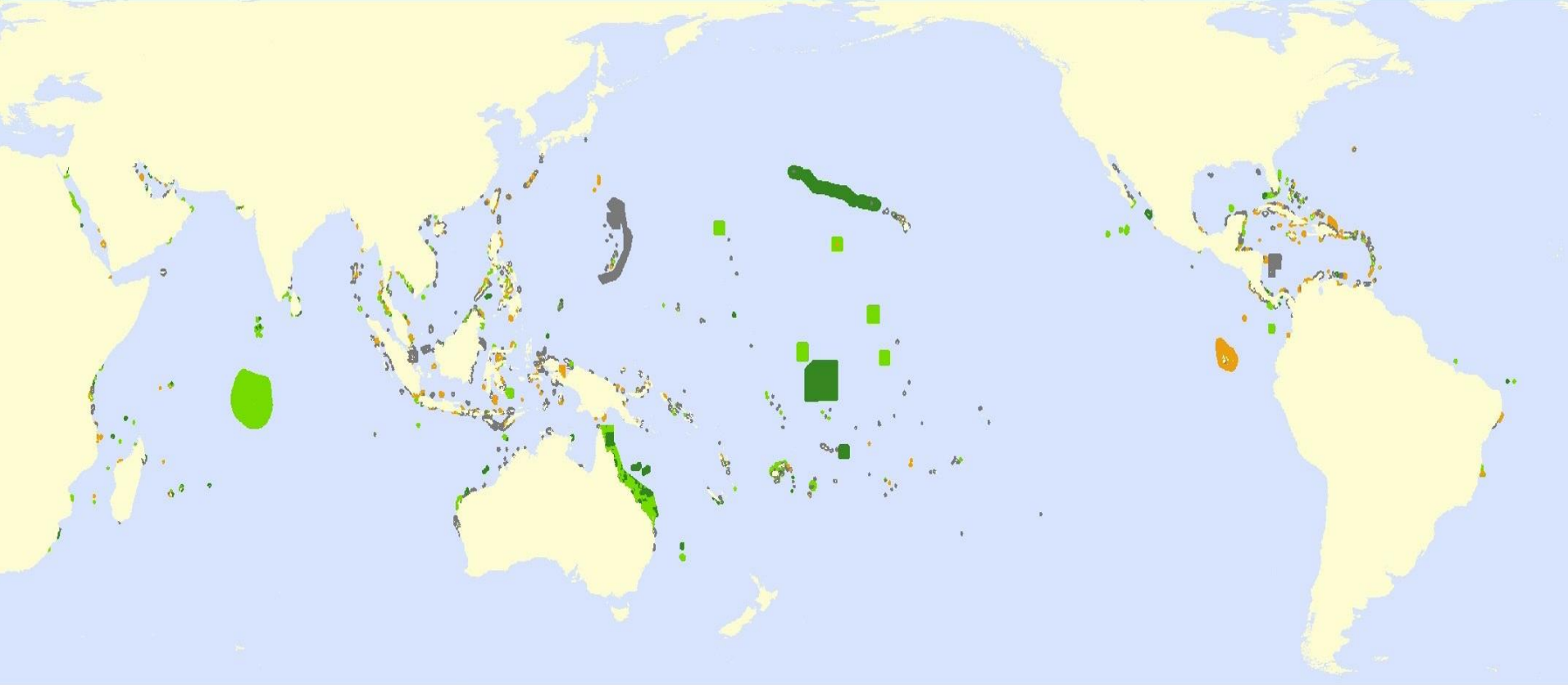
- 1%, 2.2 million km² ocean protected
- 12%, 17.9 million km² land protected

Source: The Pew Charitable Trusts



Marine Protected Areas

MARINE PROTECTED AREAS IN CORAL REEF REGIONS CLASSIFIED ACCORDING TO MANAGEMENT EFFECTIVENESS RATING



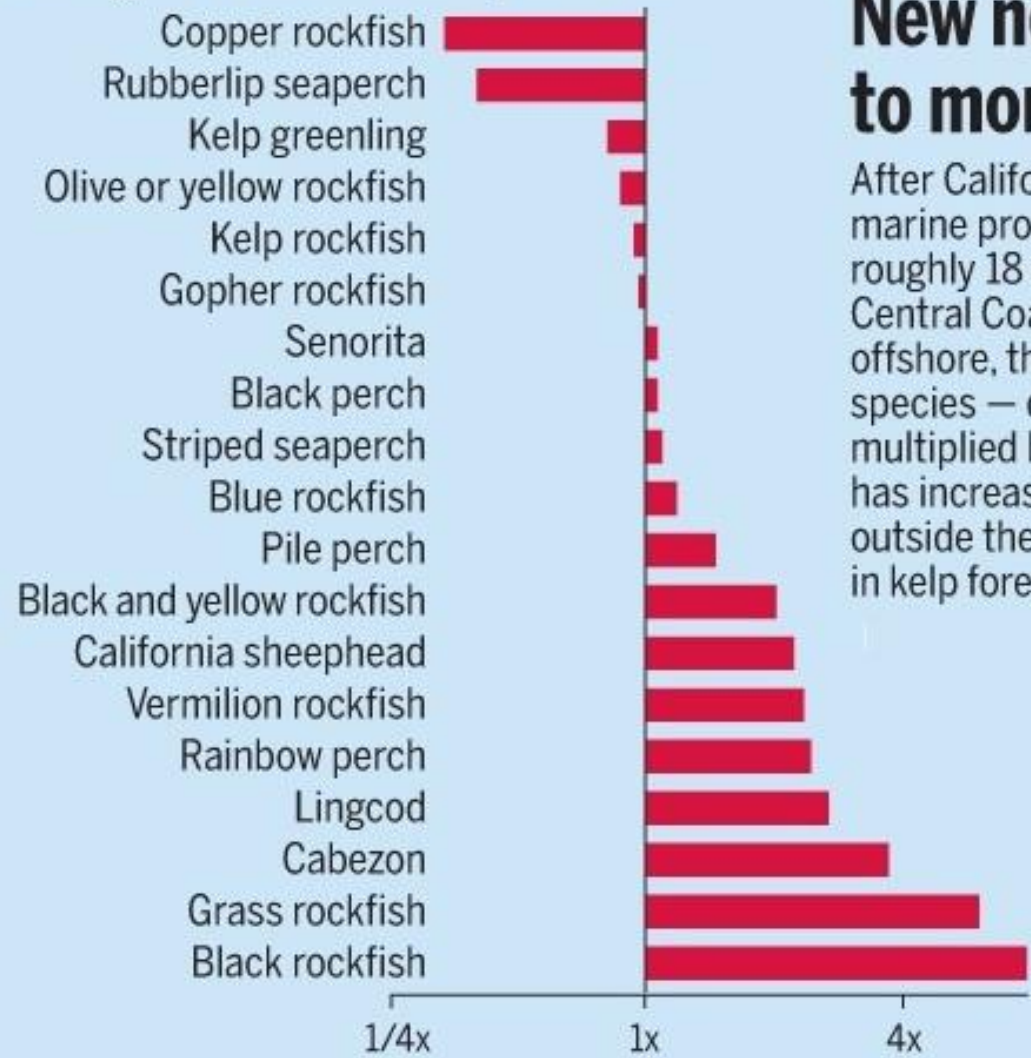
Effective Partially Effective Not Effective Unrated

Source: World Resources Institute, 2011



Reserves Show Marine Life Improvement

Changes in fish biomass, 2007-11



New no-fishing zones lead to more and bigger fish

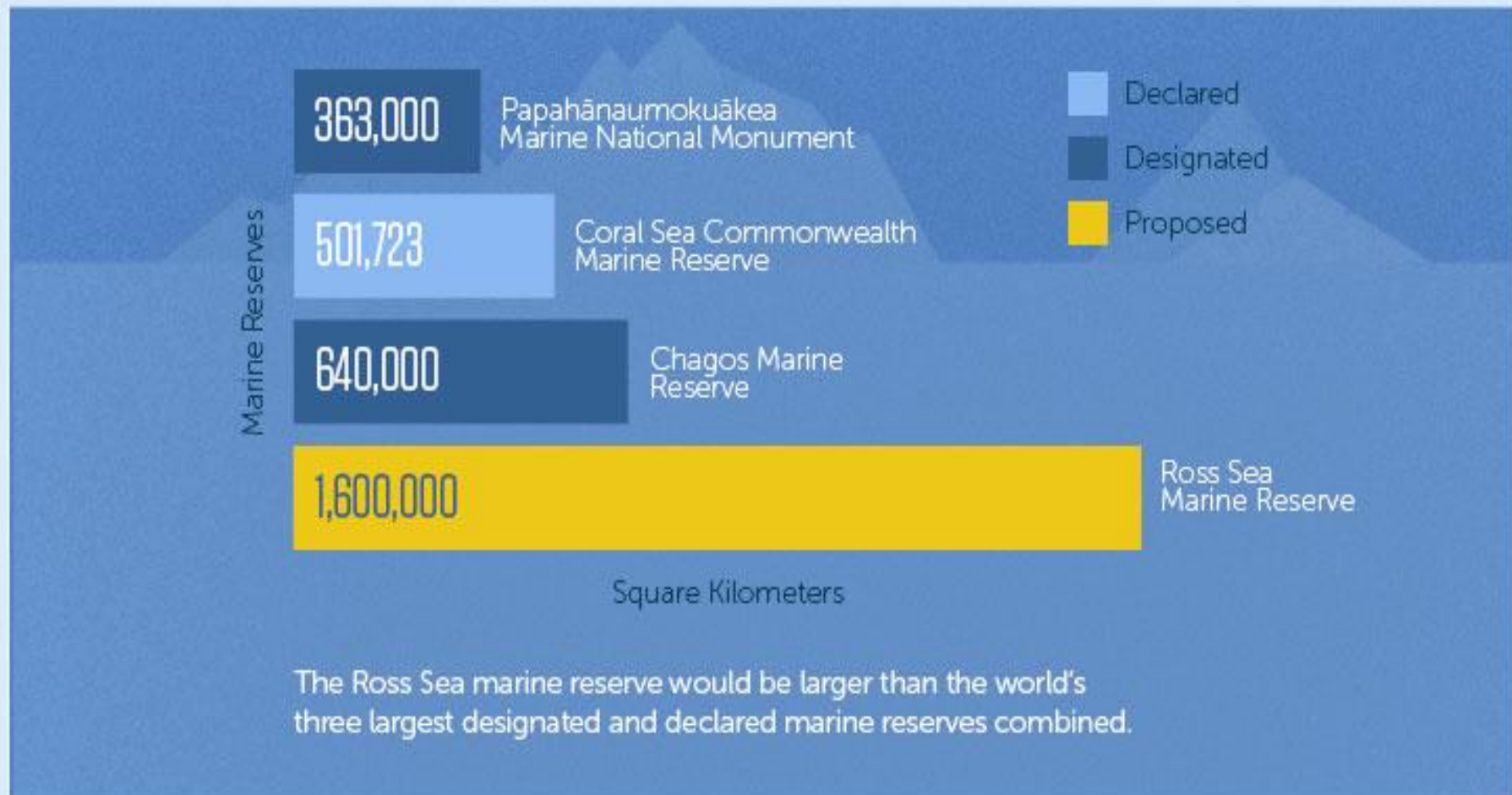
After California established marine protected areas along roughly 18 percent of the Central Coast out to three miles offshore, the biomass of many species — defined as population multiplied by the size of each fish — has increased compared to areas outside the zones. Measurements taken in kelp forests:



Source: Bay Area News Group



Ross Sea Marine Reserve Proposal



Source: The Pew Charitable Trusts



Other Initiatives

All trying to increase the amount of marine protected area

Nat Geo's Ocean Initiative

Global Ocean Biodiversity Initiative - GOBI

Marine Life Protection Act Initiative

Global Ocean Legacy

Protect Planet Ocean

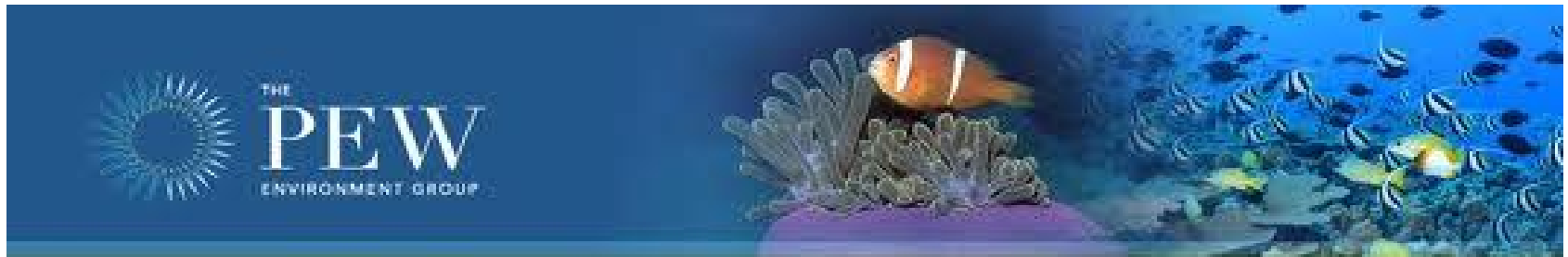









Table 8–1. *Plan B Budget:
Additional Annual Funding Needed to Restore the Earth*

Activity	Funding
	(billion dollars)
 Planting trees to reduce flooding and conserve soil	6
 Planting trees to sequester carbon	17
 Protecting topsoil on cropland	24
 Restoring rangelands	9
 Restoring fisheries	13
 Protecting biological diversity	31
 Stabilizing water tables	10
Total	110

3% of the US Spending Budget in
2013



Just Imagine...

What Implementing These Ideas Will Do



When one tugs at *a single thing* in nature,



he finds *it* attached
to the **rest of the world.**

- John Muir



Schedule of presentations: 5:30 pm - 7:30 pm

Date:Thursday	Topics
June 20	Selling our Future
June 27	Population Pressure: Land & Water
July 11	Climate Change & the Energy Transition
July 18	Stabilizing Climate:An Energy Efficiency Revolution
July 25	Stabilizing Climate:Shifting to Renewable Energy
August 1	Designing Cities for People
August 8	Eradicating Poverty & Stabilizing Population
August 15	Restoring the Earth
August 22	Feeding Eight billion People Well
August 29	Can We Mobilize Fast Enough
September 5	Summary & Priorities