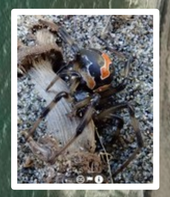
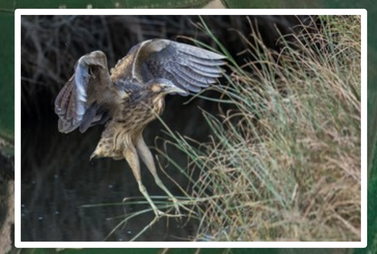
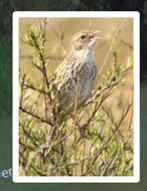
Manawatu Estuary Ramsar Site Intro



satmap view, high tide, Sept. 2025





0) Definitions

1) Ramsar site:
- what, why, how

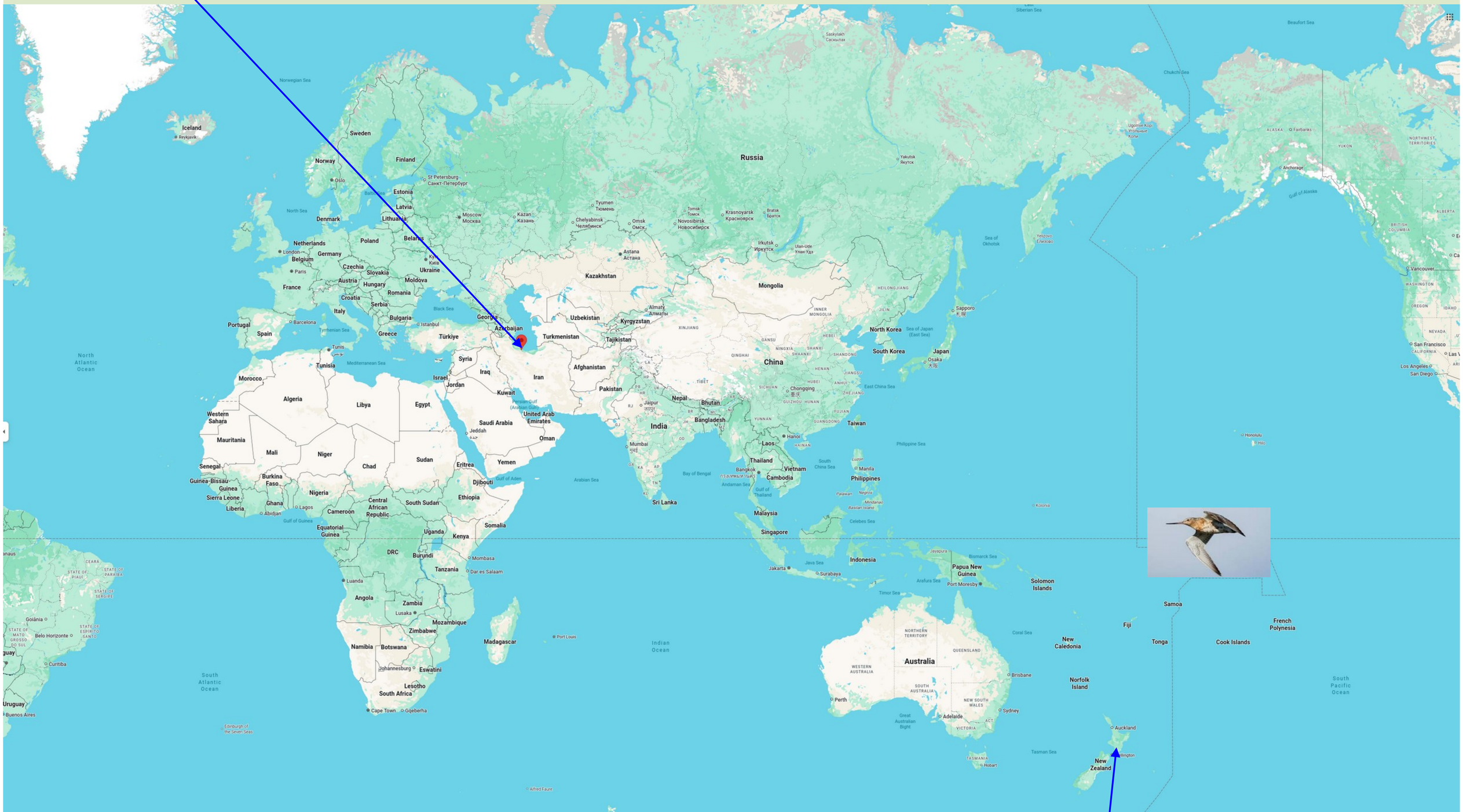
2) Birds as the high profile face of this Ramsar site

3) Threatened species in this Ramsar site

4) How can *you* help us?

5) Bibliography/Links

Ramsar is a small city in Iran, on the Caspian Sea



What's the connection to the Manawatu estuary?

https://www.ramsar.org/

The Convention on Wetlands is the intergovernmental treaty that provides the framework for the conservation and wise use of wetlands and their resources.

The Convention was adopted in the Iranian city of Ramsar in 1971 and came into force in 1975. Since then, almost 90% of UN member states, from all the world's geographic regions, have acceded to become "Contracting Parties".

Number of contracting parties:
172

Number of wetlands:
2.546

Total surface of designated sites:
257.994.728 ha

In your country

New Zealand

Since
1976

Ramsar sites
7

Surface area of
67.586 ha

https://www.doc.govt.nz/about-us/international-agreements/ecosystems/ramsar-convention-on-wetlands/

New Zealand Wetlands of International Importance

New Zealand has listed seven sites covering almost 68,000 hectares for inclusion in the List of Wetlands of International Importance (Ramsar sites). They are:

- Whangamarino, Waikato
- Kopuatai Peat Dome, Waikato
- Firth of Thames, Waikato
- Manawatu River Estuary, Manawatu
- Wairarapa Moana, Wairarapa
- Farewell Spit, Nelson
- Awarua Wetland/Waituna Lagoon, Southland

More about these New Zealand Ramsar sites from Ramsar.

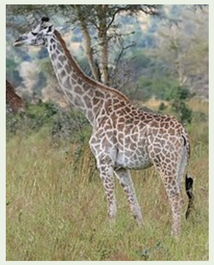
Wetlands selected for the list are internationally significant in terms of ecology, botany, zoology, limnology or hydrology. They also must meet criteria outlined in the Ramsar Convention on Wetlands.

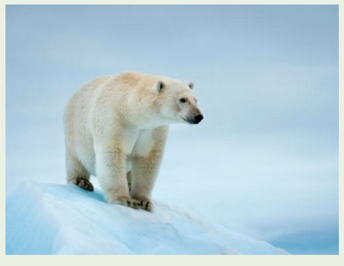
Nominations for the List can be generated by agencies or individuals. DOC, as New Zealand's administering authority, is required to provide advice to the Minister of Conservation on the suitability of any proposed Ramsar site nomination.

DOC can provide further advice on procedures for nominating sites for listing wetlands of international importance.

Definitions:

Biodiversity is about species where they evolved and occur 'naturally'





all species

all NZ species incl. exotics

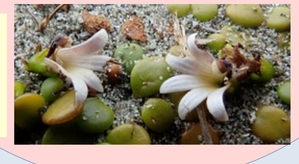
native

endemic

Pimelea actea

Endemic to Manawatu coast

Goodenia heenanii



Key Facts on Biodiversity

- More than 75% of global food crops rely on pollinators, contributing US$ 235–577 billion annually to global agricultural output. Species: birds, bees, wasps, thrips, other insects, small mammals....

- Over 50% of modern medicines are derived from natural sources. Many more are synthetics derived from nature's examples

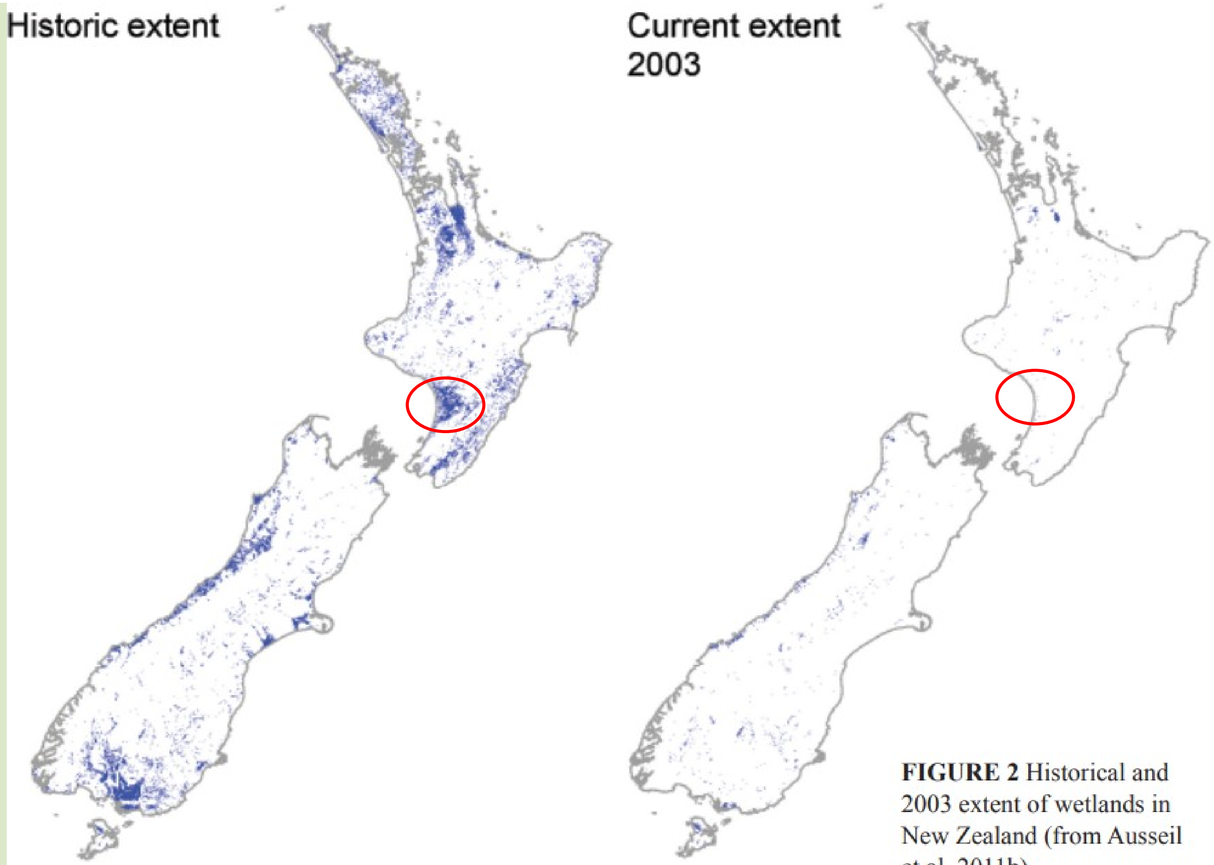


FIGURE 2 Historical and 2003 extent of wetlands in New Zealand (from Ausseil et al. 2011b).

- Forests store 80% of terrestrial biodiversity, absorbing approximately 2.6 billion tonnes of carbon dioxide annually, helping mitigate climate change. Wetlands are 3% of Aotearoa's land area, harbour 25% of native species, and are significantly more effective carbon sinks than forest.

- Invasive alien species (aka exotics) contribute to 60% of species extinctions, causing US$ 423 billion in global economic damage each year.

- Healthy ecosystems provide 75% of global freshwater resources, with wetlands playing a key role in water purification. However, since 1970, 35% of wetlands have been lost.

Further losses predicted for wetlands in future

An international report, led by a DOC scientist, warns the world is on track to lose even more of its wetlands – but solutions exist.

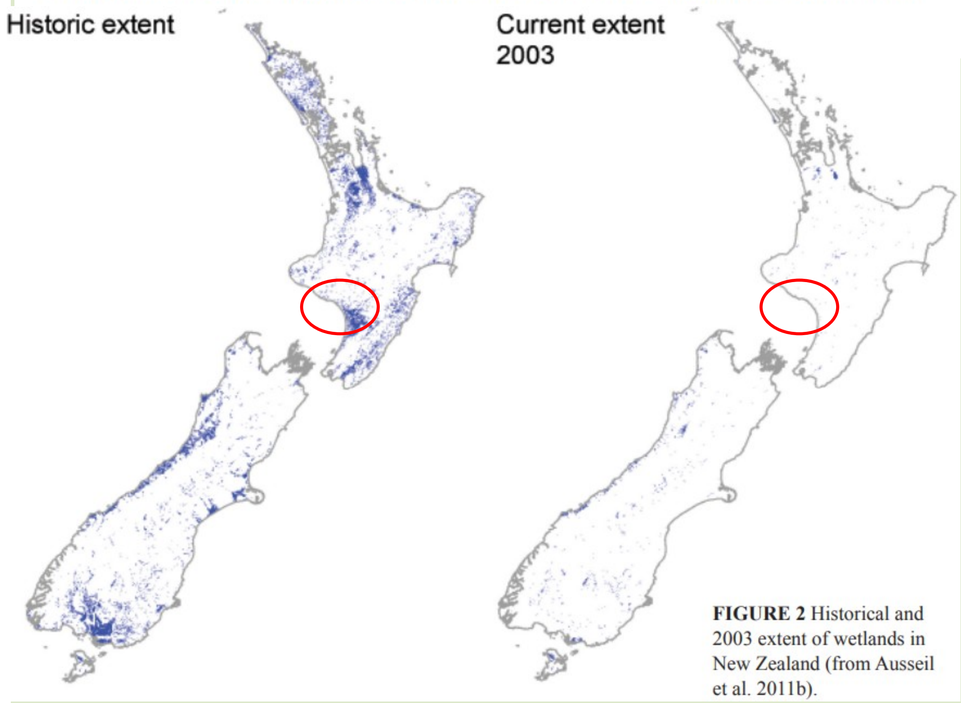


FIGURE 2 Historical and 2003 extent of wetlands in New Zealand (from Ausseil et al. 2011b).

Wetlands offer unparalleled benefits to biodiversity, the climate, water resources and human health. They regulate floods, store carbon, purify water and support food security for billions of people.

When managed effectively, the remaining 1.4 billion hectares of wetlands deliver ecosystem services worth up to $39 trillion annually — more than any other type of ecosystem. Investing in wetlands is investing in our shared future.

Despite covering only 1.5% of the Earth's surface, wetlands provide a disproportionately high 40% of global ecosystem services (Zedler and Kercher 2005)

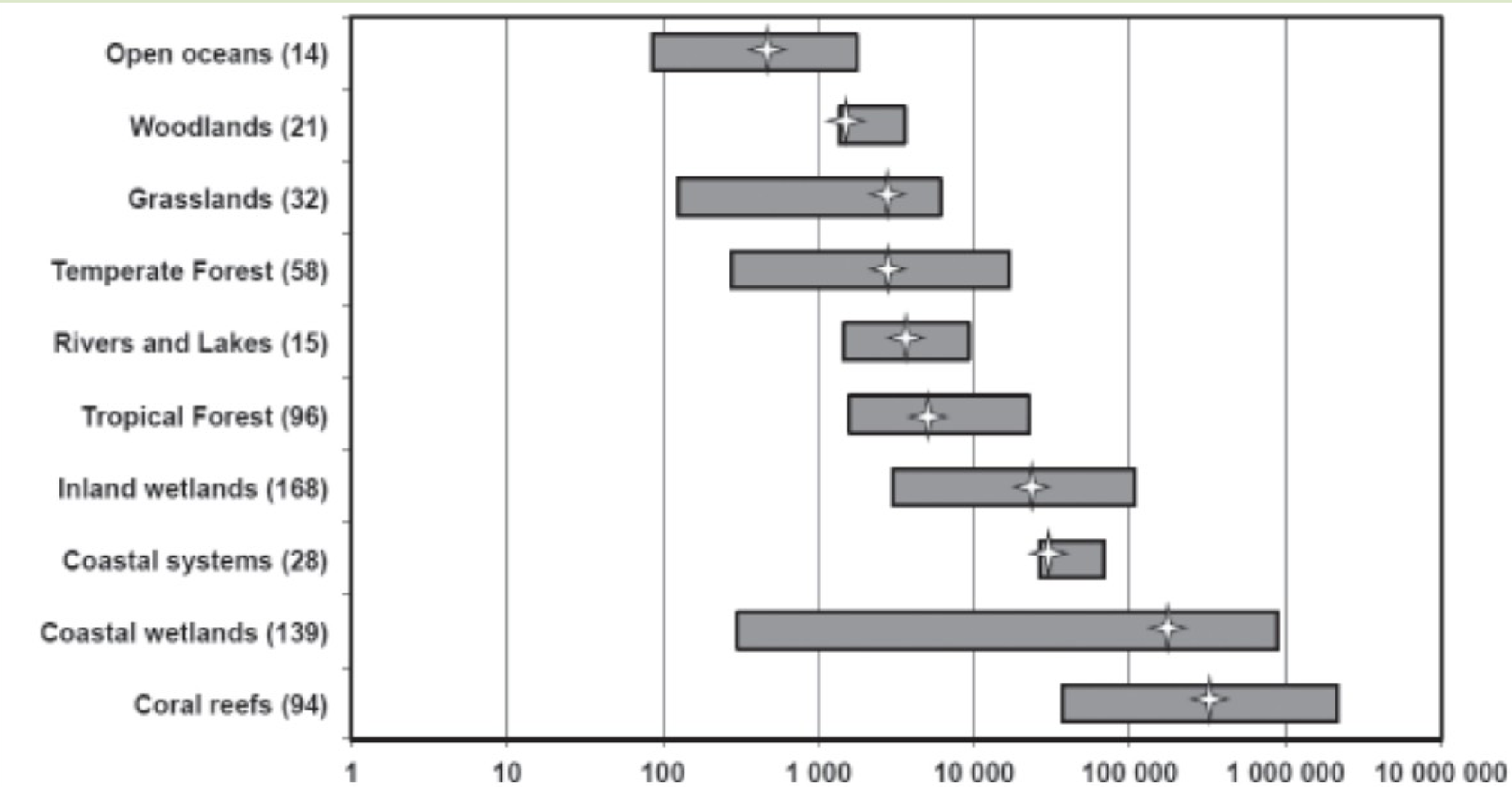
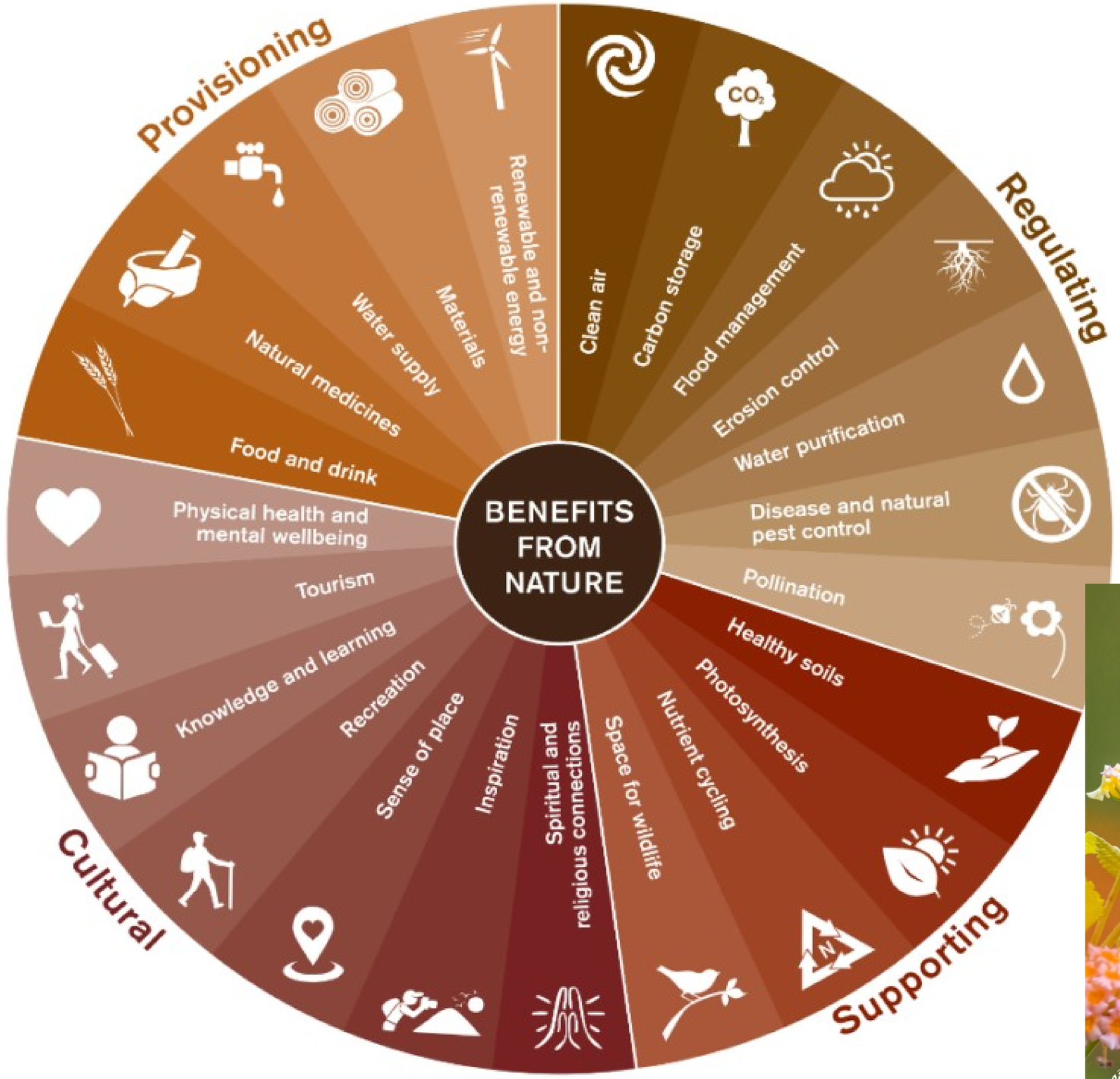


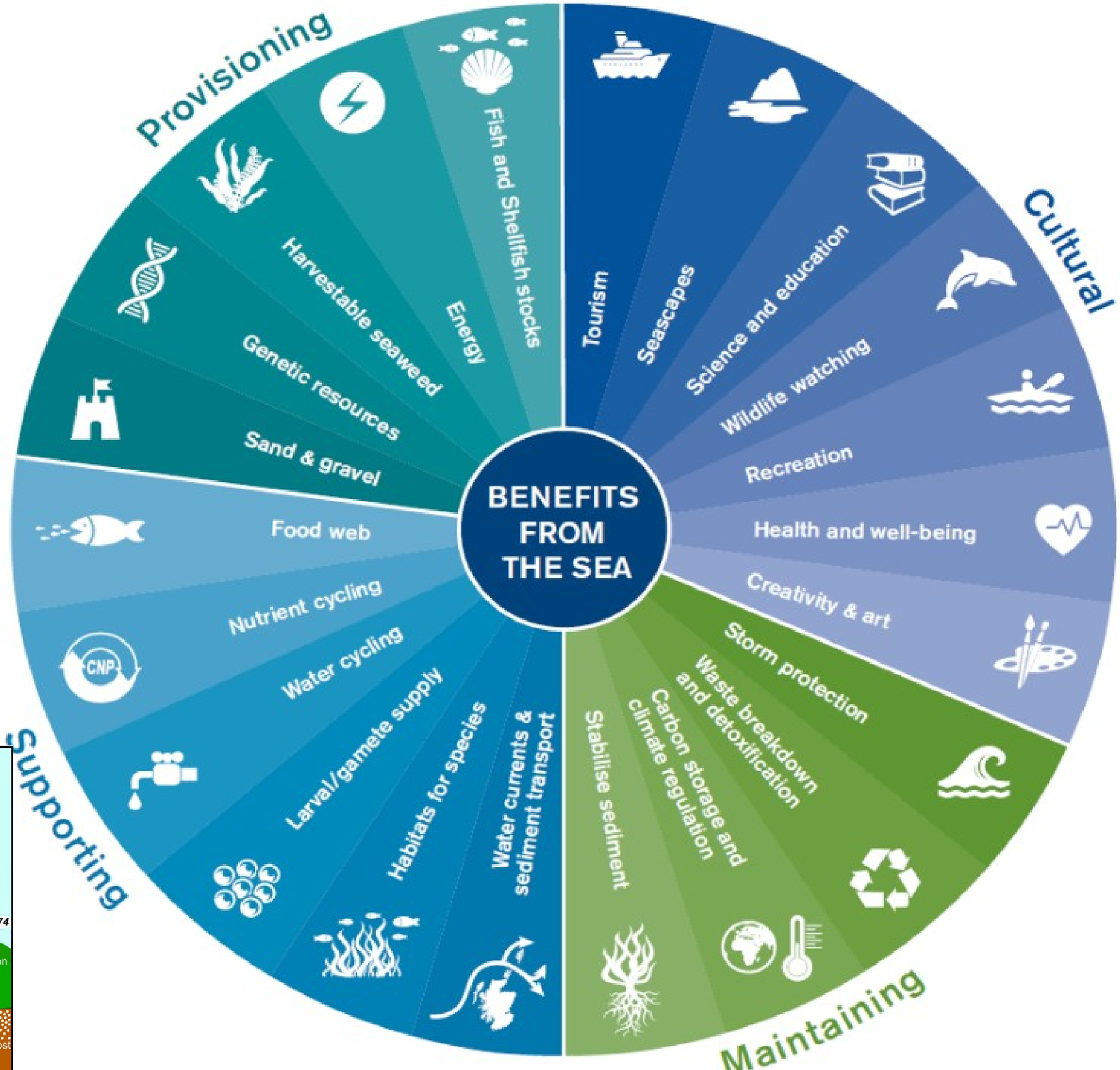
FIGURE 1 Range and average of total monetary value of bundle of ecosystem services per biome: total number in brackets, average as a star (from de Groot et al. (2012), redrawn in TEEB (2013)).

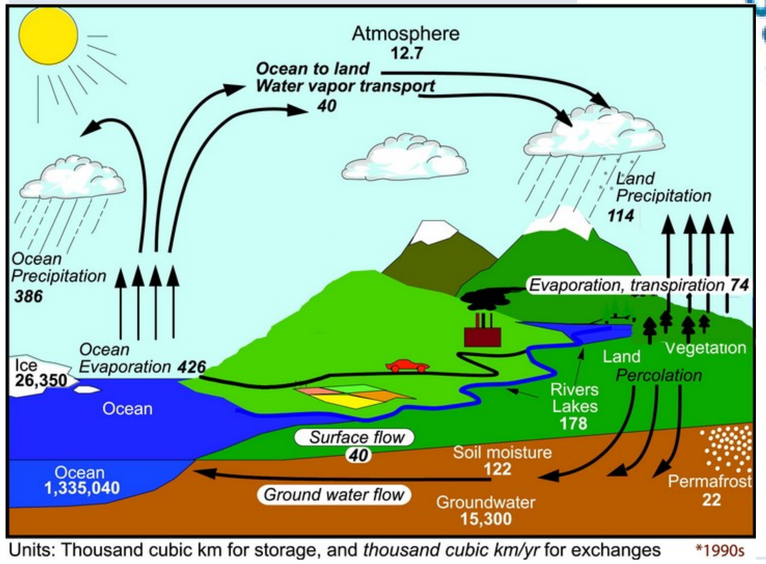
So, what are ecosystem services then?

terrestrial ecosystem services



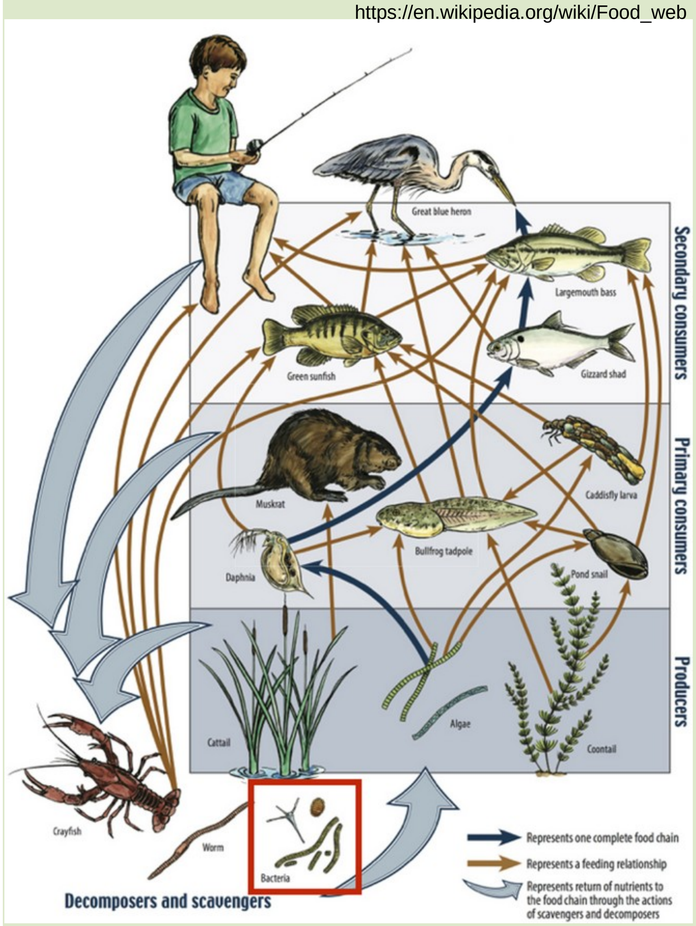
marine ecosystem services





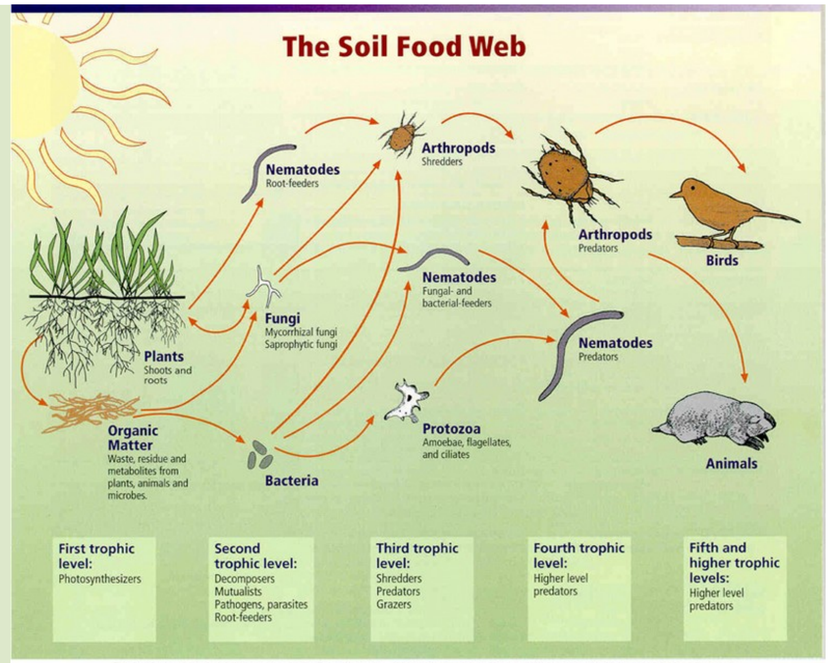
Units: Thousand cubic km for storage, and *thousand cubic km/yr* for exchanges *1990s

https://en.wikipedia.org/wiki/Food_web



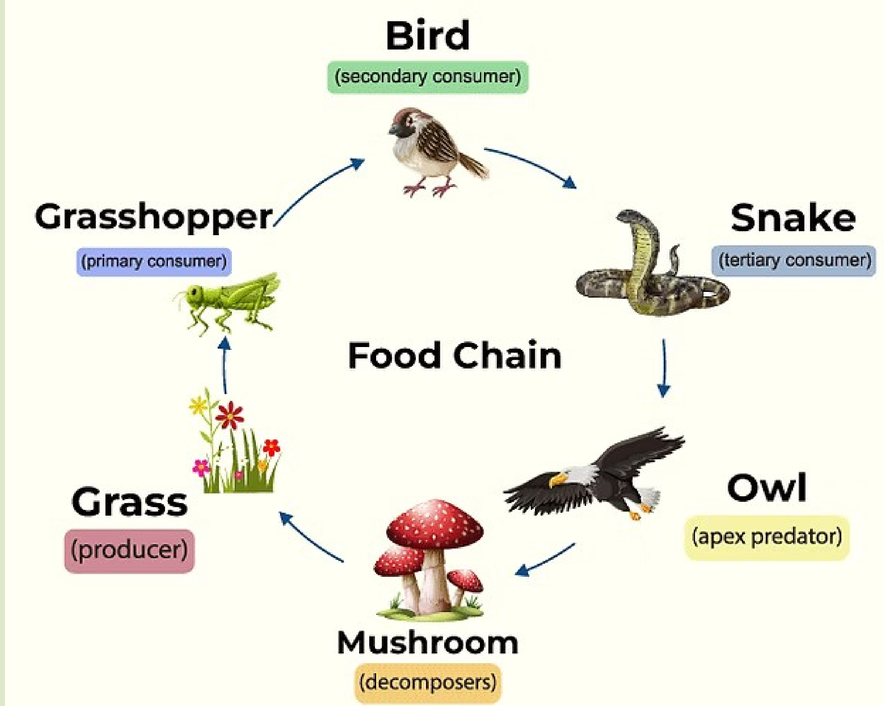
The web of life has many names and high complexity, including symbiosis, cannibalism, parasitism, etc.

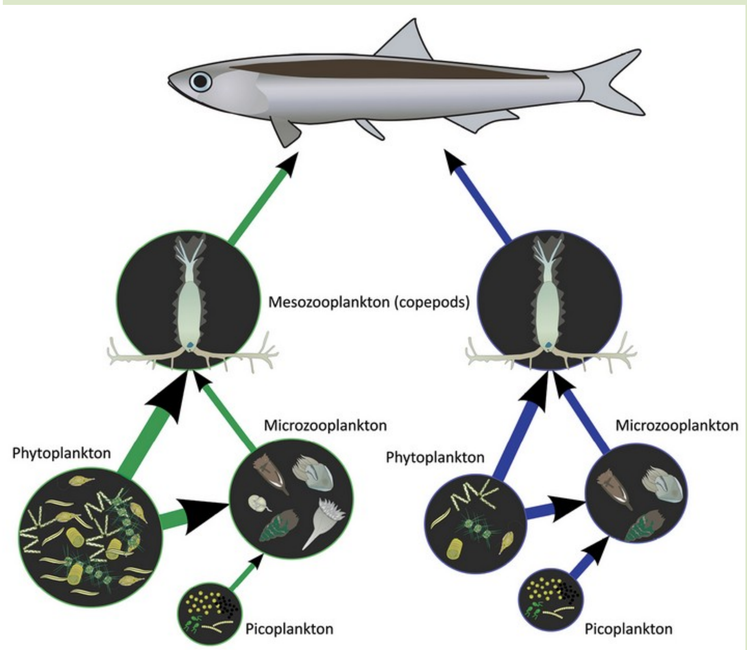
Humanity is inextricably interwoven into that complexity



Relationships between soil food web, plants, organic matter, and birds and mammals
Image courtesy of USDA Natural Resources Conservation Service
http://soils.usda.gov/sqi/soil_quality/soil_biology/soil_food_web.html.

https://www.uyir.at/explore/ayana-ashok/food-chains-food-webs





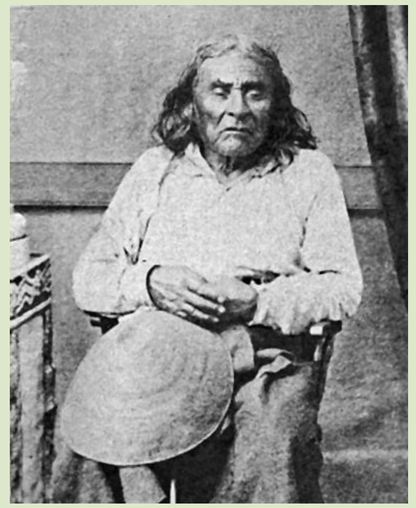
By Zingone A, D'Alelio D, Mazzocchi MG, Montresor M, Sarno D, LTER-MC team (2019) - Fig. 9 fromZingone A, D'Alelio D, Mazzocchi MG, Montresor M, Sarno D, LTER-MC team (2019) Time series and beyond: multifaceted plankton research at a marine Mediterranean LTER site. In: Mazzocchi MG, Capotondi L, Freppaz M, Lugliè A, Campanaro A (Eds) Italian Long-Term Ecological Research for understanding ecosystem diversity and functioning. Case studies from aquatic, terrestrial and transitional domains. Nature Conservation 34: 273-310.

https://earthhow.com/food-chain-predators-herbivores-producers-decomposers/

Biodiversity + ecosystem services are essential to the entire web of life. Mankind is an integral part of this web, so conserving the web of life is essential to human life

Humankind has not woven the web of life. We are but one thread within it. Whatever we do to the web, we do to ourselves. All things are bound together. All things connect.

Chief Seattle

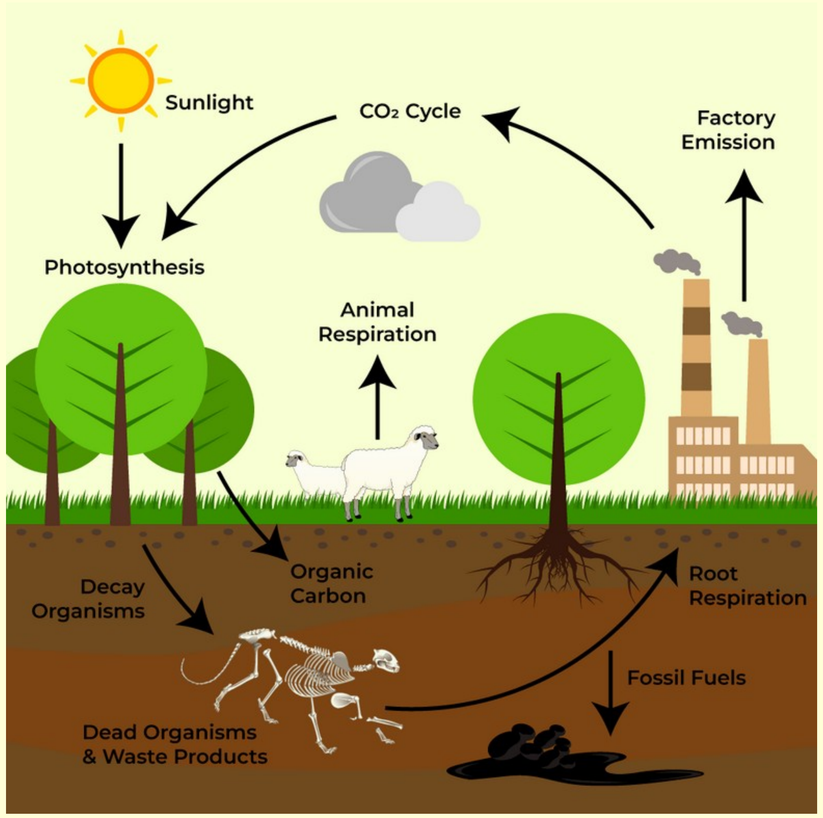


https://millstonenews.com/humans-one-thread-in-the-web-of-life/

The evidence is clear: wetlands are the highest priority to conserve for planetary sustainability

That covers a lot of definitions. The following slides are depressing, indicating we must be more proactive than we are. Fasten your seatbelt, it's a rough ride.

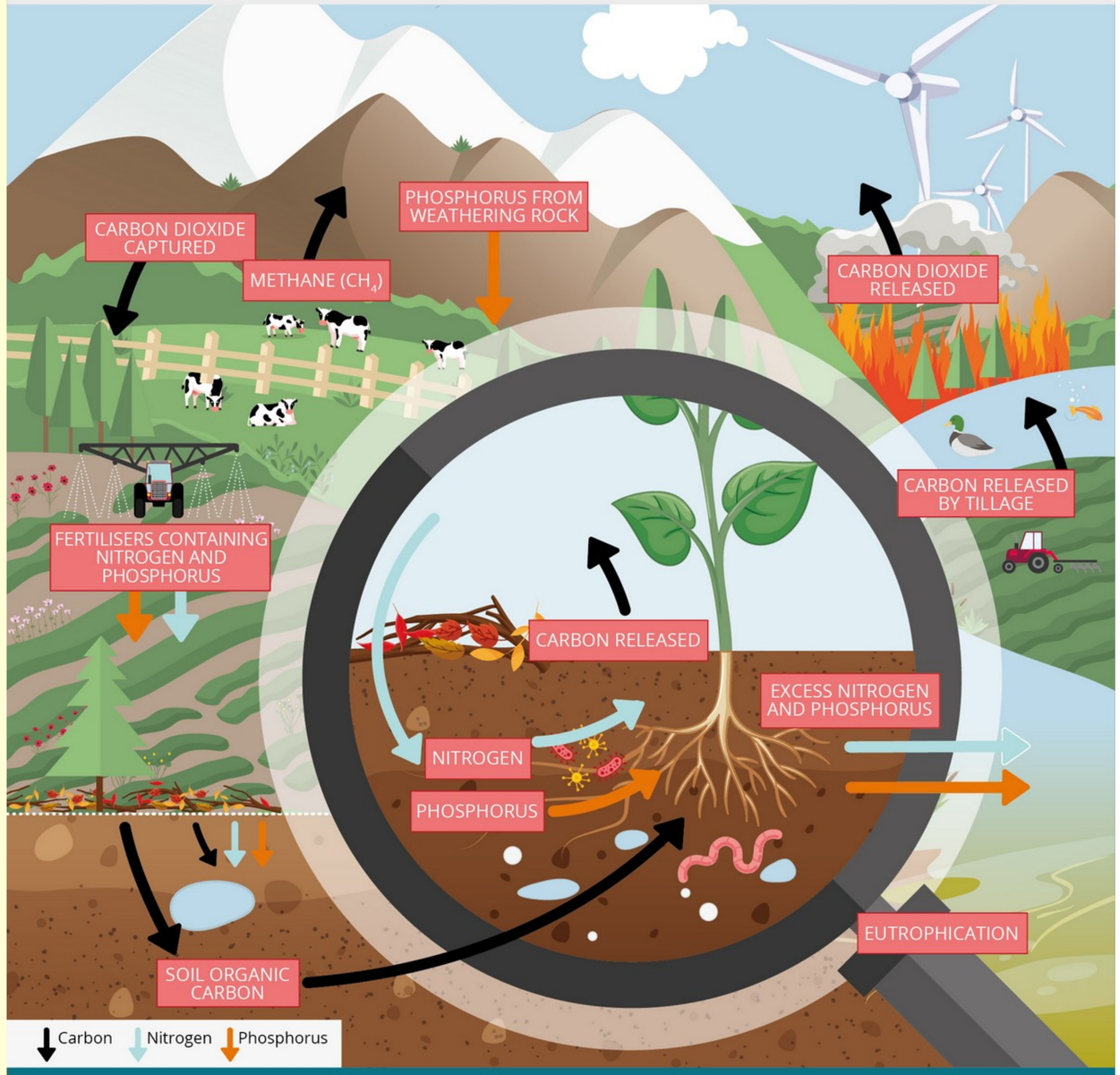
The carbon cycle and mankind's impact on the generation of CO_2 forms part of the global balance.



Note also the relation to water quality!

Nature's nutrient cycle

Soil plays a crucial role in nature's cycles, including the nutrient cycle, which involves how much soil organic matter — i.e. carbon, nitrogen and phosphorus — is taken up and stored in soil. Organic compounds, such as leaves and root tips, are broken down to simpler compounds by organisms living in soil before they can be used by plants. Some soil bacteria convert atmospheric nitrogen into mineral nitrogen, which is essential for plant growth. Fertilisers introduce nitrogen and phosphates to induce plant growth but not all amounts are taken up by plants. The excess can enter rivers and lakes and affect life in these water ecosystems.

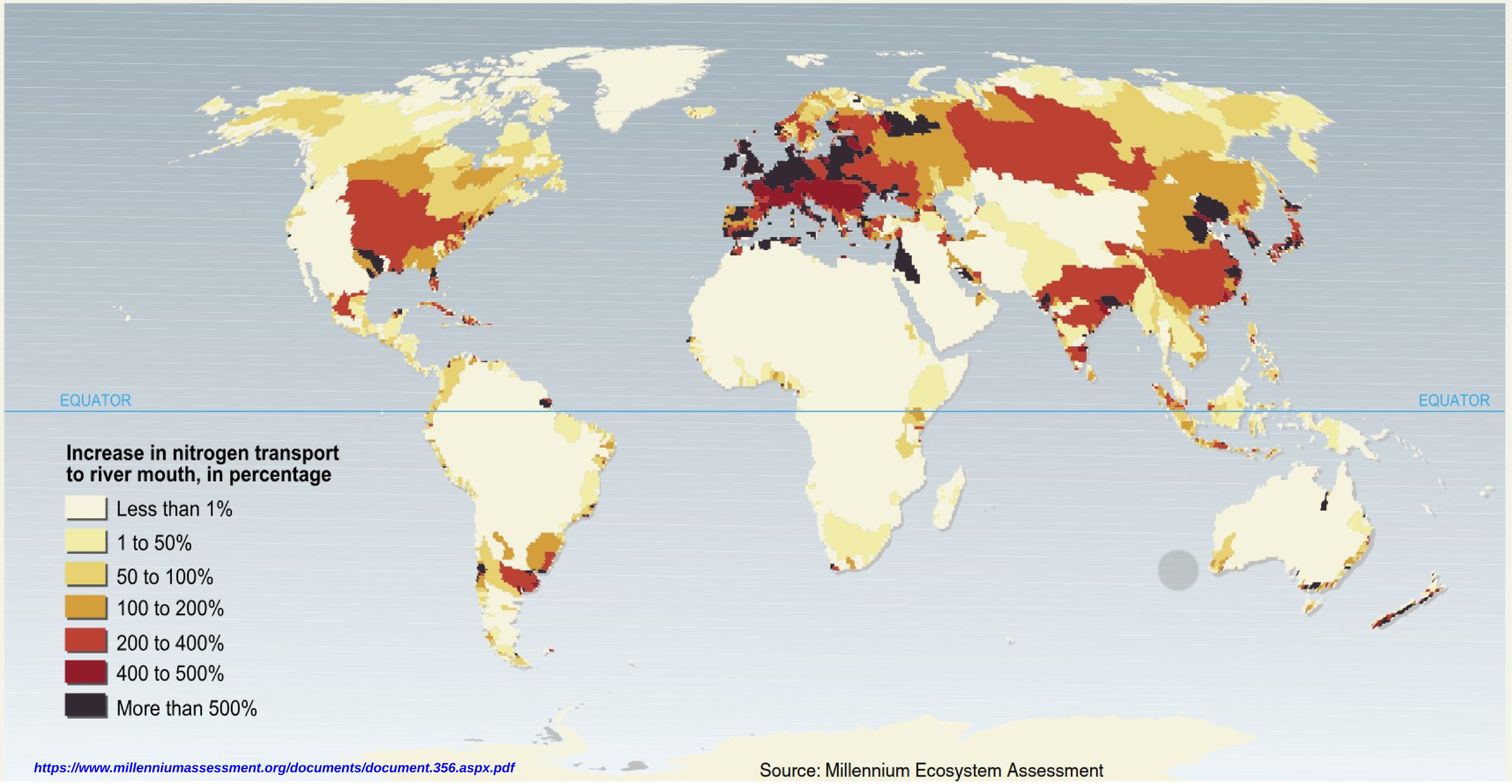


Source: EEA Signals 2019.

https://www.eea.europa.eu/en/analysis/maps-and-charts/agriculture

Appendix Figure A.9. Contrast between Contemporary and Pre-disturbance Transports of Total Nitrogen through Inland Aquatic Systems Resulting from Anthropogenic Acceleration of This Nutrient Cycle (C7 Fig 7.5)

While the peculiarities of individual pollutants, rivers, and governance define the specific character of water pollution, the general patterns observed for nitrogen are representative of anthropogenic changes to the transport of waterborne constituents. Elevated contemporary loadings to one part of the system (such as croplands) often reverberate to other parts of the system (to coastal zones, for example), exceeding the capacity of natural systems to assimilate additional constituents.



https://www.millenniumassessment.org/documents/document.356.aspx.pdf

Source: Millennium Ecosystem Assessment

https://www.swissre.com/media/press-release/nr-20200923-biodiversity-and-ecosystems-services.html

The Swiss Re index is built on 10 key ecosystem services identified by the world's scientists and uses scientific data to map the state of these services at a resolution of one square kilometre across the world's land. The services include provision of clean water and air, food, timber, pollination, fertile soil, erosion control, and coastal protection, as well as a measure of habitat intactness.

Big green patch, but life is not easy there. I was born there.

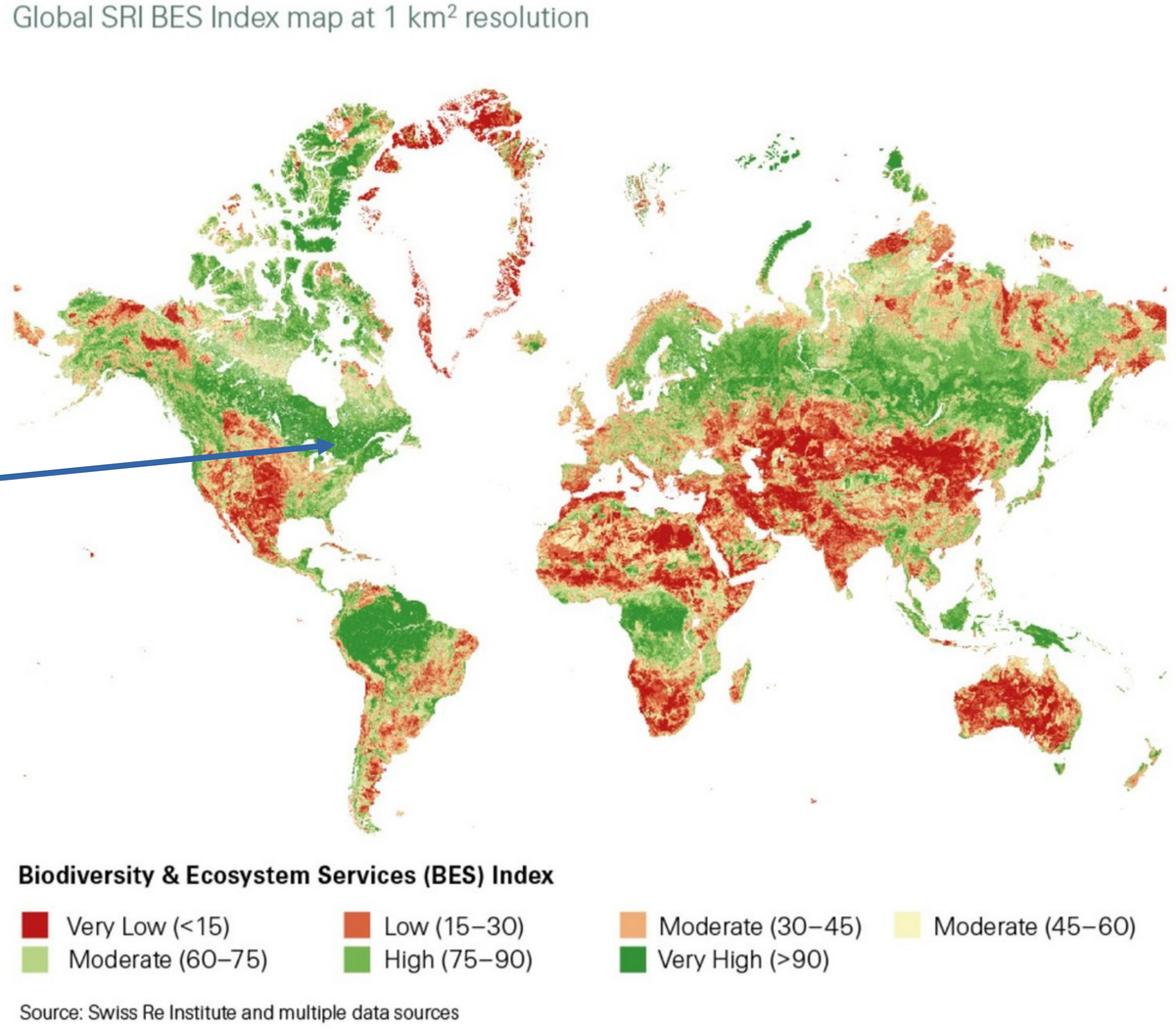
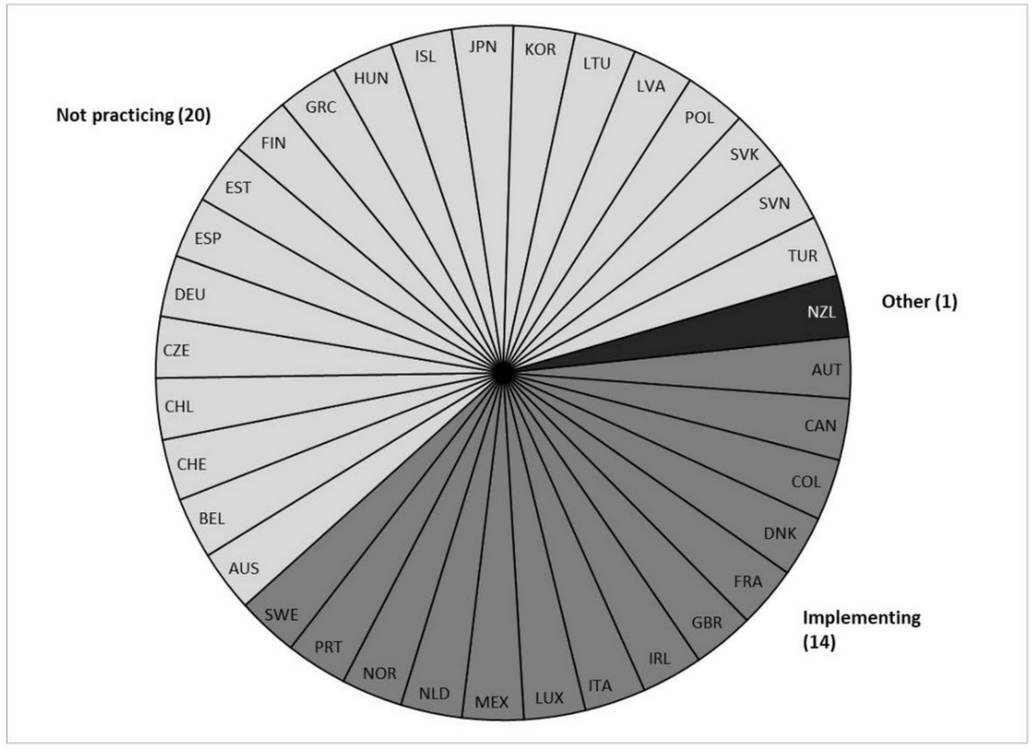


Figure 2.1. Status of Green Budgeting in OECD countries



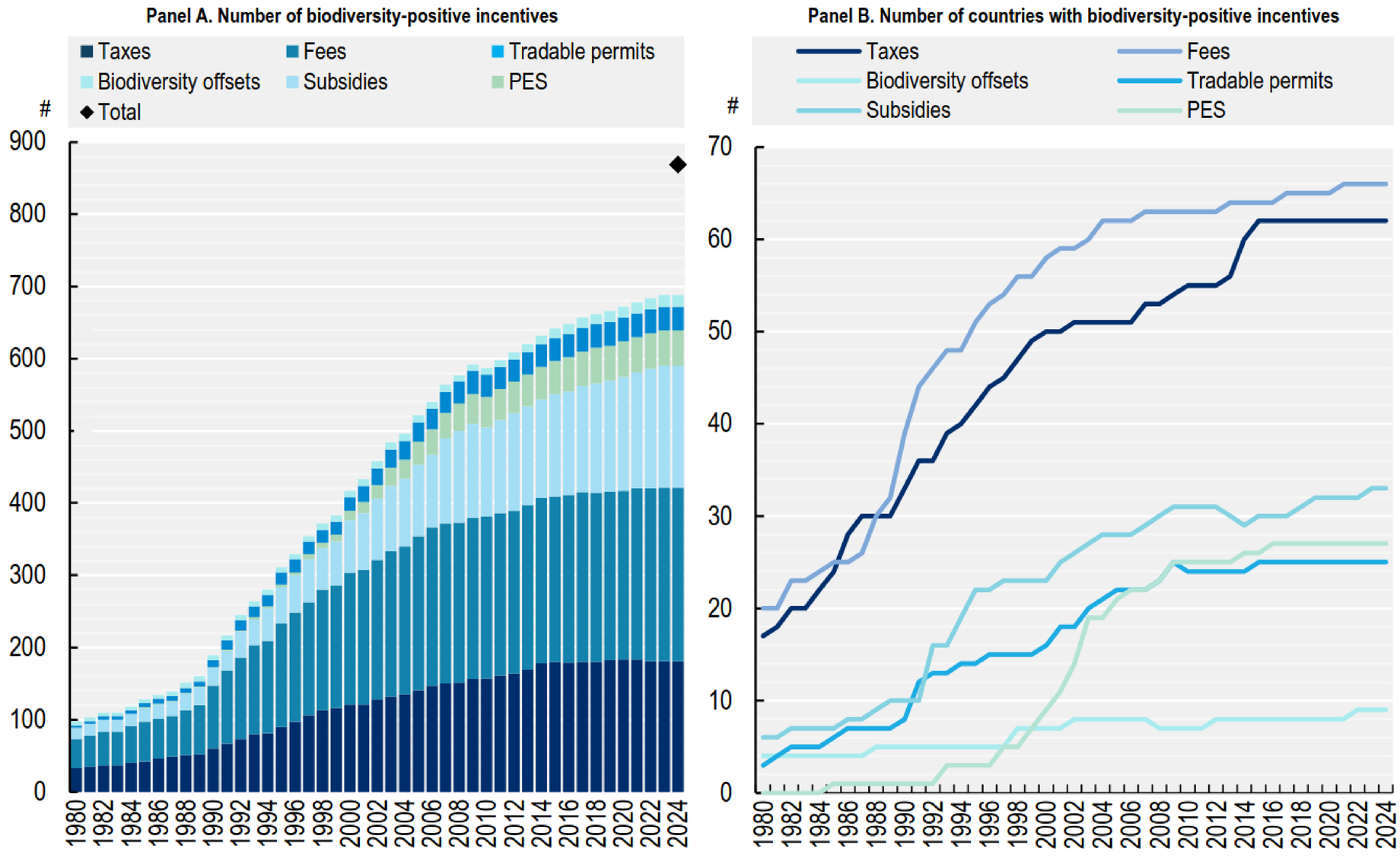
Note: Data not available for Israel and the United States. New Zealand practices "Wellbeing budgeting" where the Environment is categorised as a natural capital as part of the country's wellbeing approach.

Does that cover 'Why'? Questions?

https://www.oecd.org/content/dam/oecd/en/publications/reports/2021/08/green-budgeting-in-oecd-countries_01618d8b/acf5d047-en.pdf

At this point, we're desperate for good news. Here's something....

Figure 1.1. Trends in the use of biodiversity-positive incentives



Note: Panel A: An additional 46 taxes, 61 fees, 1 biodiversity offset, 1 tradable permit, 2 payments for ecosystem services, and 71 biodiversity-positive subsidies are in force but are not shown here as their start date is unavailable (referred to as "Total"). 16 inactive instruments with unknown start date are not reflected in the figure. Panel B: An additional 8 countries have taxes, 9 have fees, 1 has a payment for ecosystem service and 1 has biodiversity-positive subsidies but these are not shown in this figure as starting dates for these instruments are unknown.
Source: (OECD, 2024[23]), OECD PINE database accessed 27 August 2024.

https://www.oecd.org/en/publications/scaling-up-biodiversity-positive-incentives_19b859ce-en/full-report/biodiversity-positive-subsidies-and-payments-for-ecosystem-services_b571702b.html


Foxton Beach Skate Park
Dawick Street Reserve
Seabury Ave
Andrew St
Chaffey St
Linklater Ave
Shortt St
Norton St
Foxton Beach Rd
Heartland Cottage
Ferry Reserve
Manawatu Estuary Bird Sanctuary
Foxton Beach
Manawatu River
Foxton Beach Passage
Manawatu Estuary
2) Birds as the high profile face of this Ramsar site

2) Birds as the high profile face of this Ramsar site

Bird List

114	56	48
All Years	This Year 2025	This Month Oct 2025

eBird

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Change Region

Foxton Beach--Manawatu estuary (general)

Horowhenua District, Manawatu-Wanganui, New Zealand

114	1147	251
Species	Checklists	eBirders

- Overview
- Bird List
- Recent Checklists
- eBirders
- Illustrated Checklist

EXPLORE...

- Hotspot Map
- Bar Charts
- Media
- Rare Bird Alerts
- Printable Checklist

eBirding This Month Oct 2025

Updated ~2 minutes ago

48	4	2
Species	Checklists	eBirders

New Species

Ring-necked Pheasant *Phasianus colchicus*	# 2	5 Oct 2025	Neill Haggarty	Foxton Beach--Manawatu estuary (general)
Double-banded Plover *Anarhynchus bicinctus*	# 2	5 Oct 2025	Neill Haggarty	Foxton Beach--Manawatu estuary (general)
Little Egret *Egretta garzetta*	# 1	5 Oct 2025	Neill Haggarty	Foxton Beach--Manawatu estuary (general)
Swamp Harrier *Circus approximans*	# 1	5 Oct 2025	Neill Haggarty	Foxton Beach--Manawatu estuary (general)
Shining Bronze-Cuckoo *Chalcites lucidus*	# 1	4 Oct 2025	Neill Haggarty	Foxton Beach--Manawatu estuary (general)

All New Species

eBird

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Change Region

Foxton Beach--Manawatu estuary (general) Horowhenua District, Manawatu-Wanganui, New Zealand

Overview

Bird List

Recent Checklists

eBirders

Illustrated Checklist

EXPLORE...

Hotspot Map

Bar Charts

Media

Rare Bird Alerts

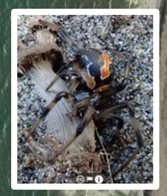
Printable Checklist

Bird List

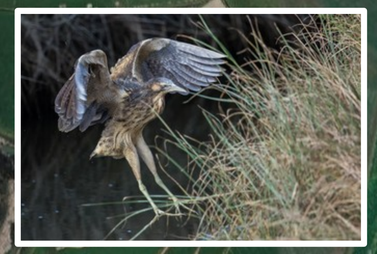
114 All Years	56 This Year 2025	48 This Month Oct 2025

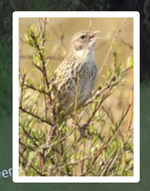
Last Observed | First Observed | High Count | Custom

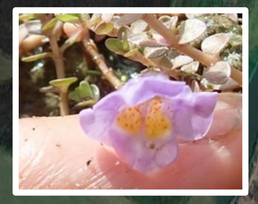
	SPECIES NAME		COUNT	DATE	OBSERVER	LOCATION
1.	Ring-necked Pheasant *Phasianus colchicus*	*	2	5 Oct 2025	Neill Haggarty	Foxton Beach--Manawatu estuary (general)
2.	Double-banded Plover *Anarhynchus bicinctus*		2	5 Oct 2025	Neill Haggarty	Foxton Beach--Manawatu estuary (general)
3.	Little Egret *Egretta garzetta*		1	5 Oct 2025	Neill Haggarty	Foxton Beach--Manawatu estuary (general)
4.	Swamp Harrier *Circus approximans*		1	5 Oct 2025	Neill Haggarty	Foxton Beach--Manawatu estuary (general)
5.	Shining Bronze-Cuckoo *Chalcites lucidus*		1	4 Oct 2025	Neill Haggarty	Foxton Beach--Manawatu estuary (general)
6.	Great Cormorant *Phalacrocorax carbo*		2	4 Oct 2025	Neill Haggarty	Foxton Beach--Manawatu estuary (general)
7.	Tui *Prosthemadera novaeseelandiae*		1	4 Oct 2025	Neill Haggarty	Foxton Beach--Manawatu estuary (general)
8.	Redpoll *Acanthis flammea*	*	4	4 Oct 2025	Neill Haggarty	Foxton Beach--Manawatu estuary (general)
9.	Canada Goose *Branta canadensis*	*	4	3 Oct 2025	Neill Haggarty	Foxton Beach--Manawatu estuary (general)
10.	Black Swan *Cygnus atratus*	*	9	3 Oct 2025	Neill Haggarty	Foxton Beach--Manawatu estuary (general)
11.	Paradise Shelduck *Tadorna variegata*		1	3 Oct 2025	Neill Haggarty	Foxton Beach--Manawatu estuary (general)
12.	Australasian Shoveler *Spatula rhynchotis*		2	3 Oct 2025	Neill Haggarty	Foxton Beach--Manawatu estuary (general)
13.	Mallard *Anas platyrhynchos*	*	28	3 Oct 2025	Neill Haggarty	Foxton Beach--Manawatu estuary (general)
14.	Gray Teal *Anas gracilis*		7	3 Oct 2025	Neill Haggarty	Foxton Beach--Manawatu estuary (general)
15.	New Zealand Scaup *Aythya novaeseelandiae*		1	3 Oct 2025	Neill Haggarty	Foxton Beach--Manawatu estuary (general)
16.	Rock Pigeon *Columba livia*	*	6	3 Oct 2025	Neill Haggarty	Foxton Beach--Manawatu estuary (general)
17.	Australasian Swamphen *Porphyrio melanotus*		8	3 Oct 2025	Neill Haggarty	Foxton Beach--Manawatu estuary (general)
18.	Pied Stilt *Himantopus leucocephalus*		5	3 Oct 2025	Neill Haggarty	Foxton Beach--Manawatu estuary (general)
19.	South Island Oystercatcher *Haematopus finschi*		8	3 Oct 2025	Neill Haggarty	Foxton Beach--Manawatu estuary (general)
20.	Pacific Golden-Plover *Pluvialis fulva*		3	3 Oct 2025	Neill Haggarty	Foxton Beach--Manawatu estuary (general)
21.	Masked Lapwing *Vanellus miles*		11	3 Oct 2025	Neill Haggarty	Foxton Beach--Manawatu estuary (general)
22.	Bar-tailed Godwit *Limosa lapponica*		131	3 Oct 2025	Neill Haggarty	Foxton Beach--Manawatu estuary (general)
23.	Red Knot *Calidris canutus*		3	3 Oct 2025	Neill Haggarty	Foxton Beach--Manawatu estuary (general)
24.	Caspian Tern *Hydroprogne caspia*		3	3 Oct 2025	Neill Haggarty	Foxton Beach--Manawatu estuary (general)
25.	Little Pied Cormorant *Microcarbo melanoleucos*		1	3 Oct 2025	Neill Haggarty	Foxton Beach--Manawatu estuary (general)
26.	Pied Cormorant *Phalacrocorax varius*		7	3 Oct 2025	Neill Haggarty	Foxton Beach--Manawatu estuary (general)
27.	Royal Spoonbill *Platalea regia*		18	3 Oct 2025	Neill Haggarty	Foxton Beach--Manawatu estuary (general)
28.	White-faced Heron *Egretta novaehollandiae*		4	3 Oct 2025	Neill Haggarty	Foxton Beach--Manawatu estuary (general)
29.	Sacred Kingfisher *Todiramphus sanctus*		1	3 Oct 2025	Neill Haggarty	Foxton Beach--Manawatu estuary (general)
30.	Gray Gerygone *Gerygone igata*		1	3 Oct 2025	Neill Haggarty	Foxton Beach--Manawatu estuary (general)
31.	New Zealand Fantail *Rhipidura fuliginosa*		2	3 Oct 2025	Neill Haggarty	Foxton Beach--Manawatu estuary (general)
32.	Welcome Swallow *Hirundo neoxena*		6	3 Oct 2025	Neill Haggarty	Foxton Beach--Manawatu estuary (general)
33.	Silvereye *Zosterops lateralis*		5	3 Oct 2025	Neill Haggarty	Foxton Beach--Manawatu estuary (general)
34.	European Starling *Sturnus vulgaris*	*	26	3 Oct 2025	Neill Haggarty	Foxton Beach--Manawatu estuary (general)
35.	Song Thrush *Turdus philomelos*	*	4	3 Oct 2025	Neill Haggarty	Foxton Beach--Manawatu estuary (general)
36.	Eurasian Blackbird *Turdus merula*	*	7	3 Oct 2025	Neill Haggarty	Foxton Beach--Manawatu estuary (general)
37.	House Sparrow *Passer domesticus*	*	37	3 Oct 2025	Neill Haggarty	Foxton Beach--Manawatu estuary (general)
38.	Common Chaffinch *Fringilla coelebs*	*	10	3 Oct 2025	Neill Haggarty	Foxton Beach--Manawatu estuary (general)
39.	European Greenfinch *Chloris chloris*	*	8	3 Oct 2025	Neill Haggarty	Foxton Beach--Manawatu estuary (general)
40.	European Goldfinch *Carduelis carduelis*	*	3	3 Oct 2025	Neill Haggarty	Foxton Beach--Manawatu estuary (general)
41.	Yellowhammer *Emberiza citrinella*	*	2	3 Oct 2025	Neill Haggarty	Foxton Beach--Manawatu estuary (general)
42.	Variable Oystercatcher *Haematopus unicolor*		3	3 Oct 2025	Josiah Ensing	Foxton Beach--Manawatu estuary (general)
43.	Silver Gull *Chroicocephalus novaehollandiae*		3	3 Oct 2025	Josiah Ensing	Foxton Beach--Manawatu estuary (general)
44.	Black-billed Gull *Chroicocephalus bulleri*		4	3 Oct 2025	Josiah Ensing	Foxton Beach--Manawatu estuary (general)
45.	Kelp Gull *Larus dominicanus*		18	3 Oct 2025	Josiah Ensing	Foxton Beach--Manawatu estuary (general)
46.	White-fronted Tern *Sterna striata*		4	3 Oct 2025	Josiah Ensing	Foxton Beach--Manawatu estuary (general)
47.	Australian Magpie *Gymnorhina tibicen*	*	1	3 Oct 2025	Josiah Ensing	Foxton Beach--Manawatu estuary (general)
48.	Eurasian Skylark *Alauda arvensis*	*	1	3 Oct 2025	Josiah Ensing	Foxton Beach--Manawatu estuary (general)



satmap view, high tide, Sept. 2025







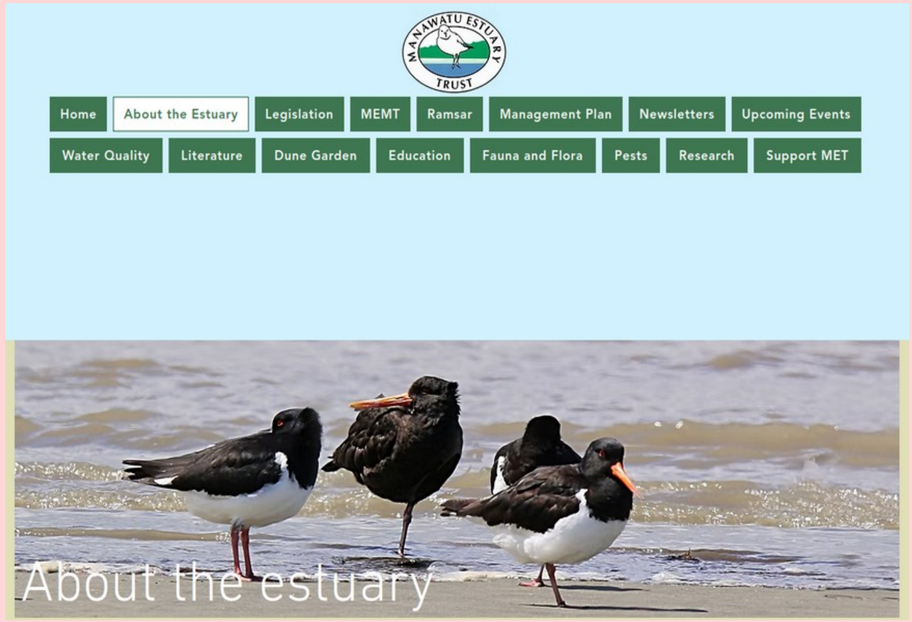
3) Threatened species in this Ramsar site

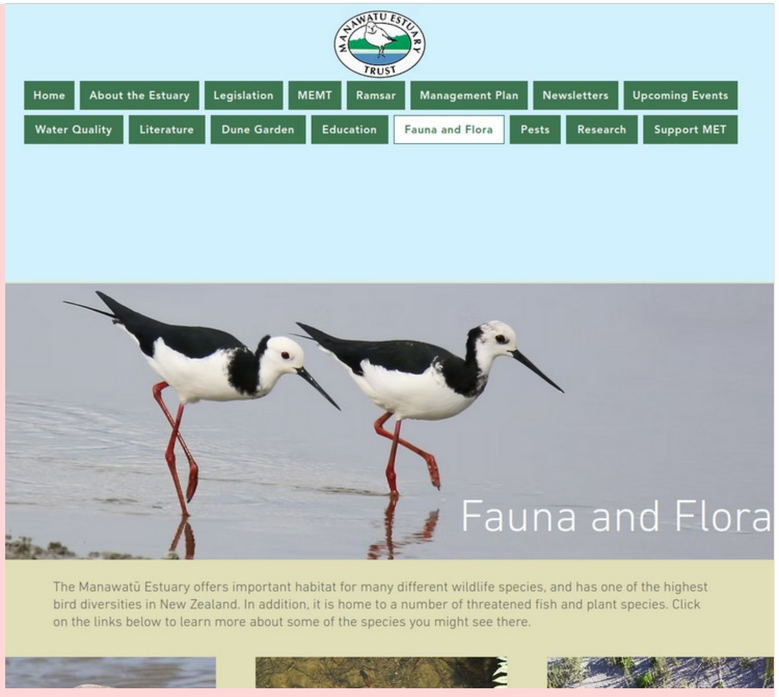
This is not a complete depiction. There are many more. A big question remains – How many do we not even know about?

https://www.doc.govt.nz/nature/conservation-status/

The list of threatened species lists:

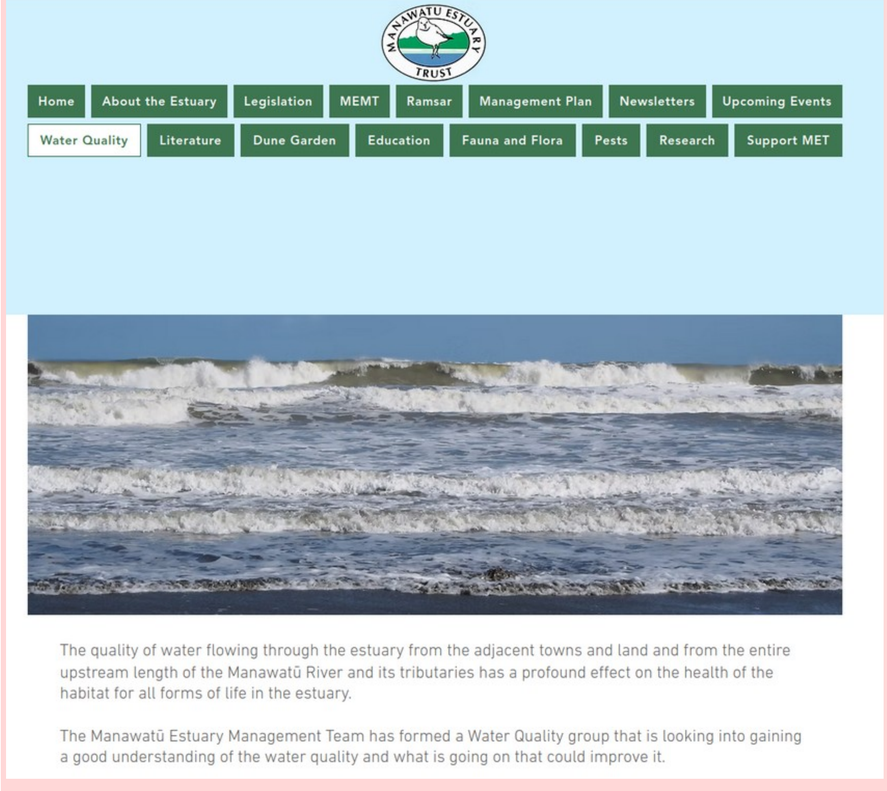
Report Name	Year Assessed	Year Published
Amphibians 2024 (Burns et al. 2025)	2024	2025
Marine Mammals 2024 (Lundquist et al. 2025)	2024	2025
Mosses 2025 (Michel et al.)	2025	2025
Terrestrial Gastropoda: 3. Rhytididae (carnivorous snails), 2022 (Walker et al. 2024)	2022	2024
Vascular plants 2023 (de Lange et al. 2024)	2023	2024
Bats 2022 (O'Donnell et al. 2023)	2022	2023
Marine invertebrates 2021 (Funnel et al. 2023)	2021	2023
Mushroom fungi (Agaricales Boletales Russulales) 2021 (Cooper et al. 2022)	2021	2022
Orthoptera 2022 (Trewick et al. 2022)	2022	2022
Parasitic mites and ticks (Acari) 2021 (Heath et al. 2022)	2021	2022
Birds 2021 (Robertson et al. 2021)	2021	2021
Reptiles 2021 (Hitchmough et al. 2021)	2021	2021
Spiders 2020 (Sirvid et al. 2021)	2020	2021
Terrestrial Gastropoda 2020: 1. Athoracophoridae (leaf-veined slugs) and Succineidae (Barker et al. 2021)	2020	2021
Terrestrial Gastropoda 2020: 2. Achatinellidae Bothriembryontidae (pupuharakeke) Helicarionidae Pupinidae Vertiginidae (Walker et al. 2021)	2020	2021
Hornworts and liverworts 2020 (de Lange et al. 2020)	2020	2020
Macroalgae 2019 (Nelson et al. 2019)	2019	2019
Chondrichthyans (chimaeras sharks rays) 2016 (Duffy et al. 2018)	2016	2018
Freshwater fishes 2017 (Dunn et al. 2018)	2017	2018
Freshwater invertebrates 2018 (Grainger et al. 2018)	2018	2018
Lichens 2018 (de Lange et al. 2018)	2018	2018
Onychophora 2018 (Trewick et al. 2018)	2018	2018
Hymenoptera 2014 (Ward et al. 2017)	2014	2017
Lepidoptera 2015 (Hoare et al. 2017)	2015	2017
Stick insects 2014 (Buckley et al. 2016)	2014	2016
Earthworms 2014 (Buckley et al. 2015)	2014	2015
Fleas 2014 (Heath et al. 2015)	2014	2015
Aphids 2010 (Stringer et al. 2012)	2010	2012
Coleoptera 2010 (Leschen et al. 2012)	2010	2012
Diptera 2010 (Andrew et al. 2012)	2010	2012
Hemiptera 2010 (Stringer et al. 2012)	2010	2012
Minor invertebrate groups 2010 (Buckley et al. 2012)	2010	2012
Nematodes 2010 (Yeates et al. 2012)	2010	2012
Terrestrial Gastropoda 2010: Charopidae and Punctidae (micro-snails) (Mahlfeld et al. 2012)	2010	2012
Fungi excluding selected species of Agaricales Boletales Russulales 2005 (Hitchmough et al. 2007)	2005	2007





Manawatu Estuary web

https:www.metrust.org.nz



Does that cover 'What'? Questions?

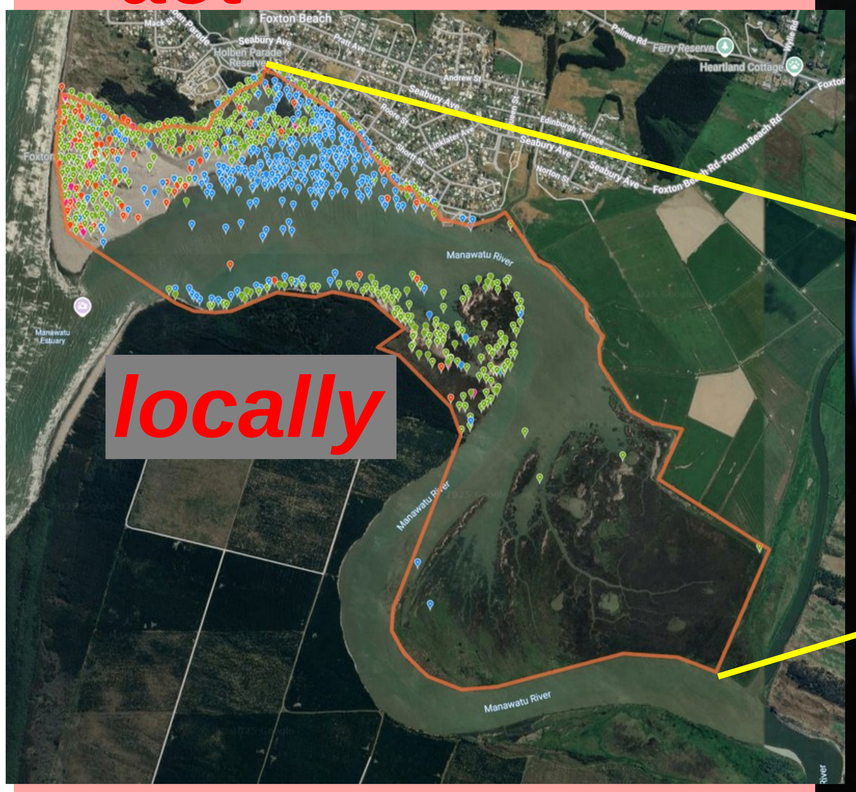
How can you help?

think

globally

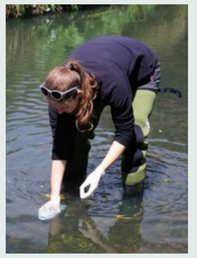
act

locally



How can you help?

Pick any



print media

social media

newsletter

website

public meetings and presentations

school liaison

agency liaison

trap network mgmt

pest trapping

monitoring

reporting

analysis

germinating

planting

weeding

Catchment liaison

Flora

Fauna

Water Quality

Vehicle Mgmt

Community Engagement

Let's look at two:

Contact information available at
https://metrust.org.nz/contacts/Ramsar_HowtoHelp.pdf

MEMT Sep 2025


Citizen science monitoring of species in the Manawatu Estuary Ramsar site, via iNaturalist.nz
You can too!
This is one way to learn about species...
Oct. 2025 arnim@actrix.gen.nz all software used to create this is open source
Manawatu River
Manawatu Estuary
Dawick Street Reserve
Ferry Reserve
Heartland Cottage
Foxton Beach Rd
Seabury Ave
Andrew St
Norton St
Short St

"In one drop of water are found all the secrets of the ocean."

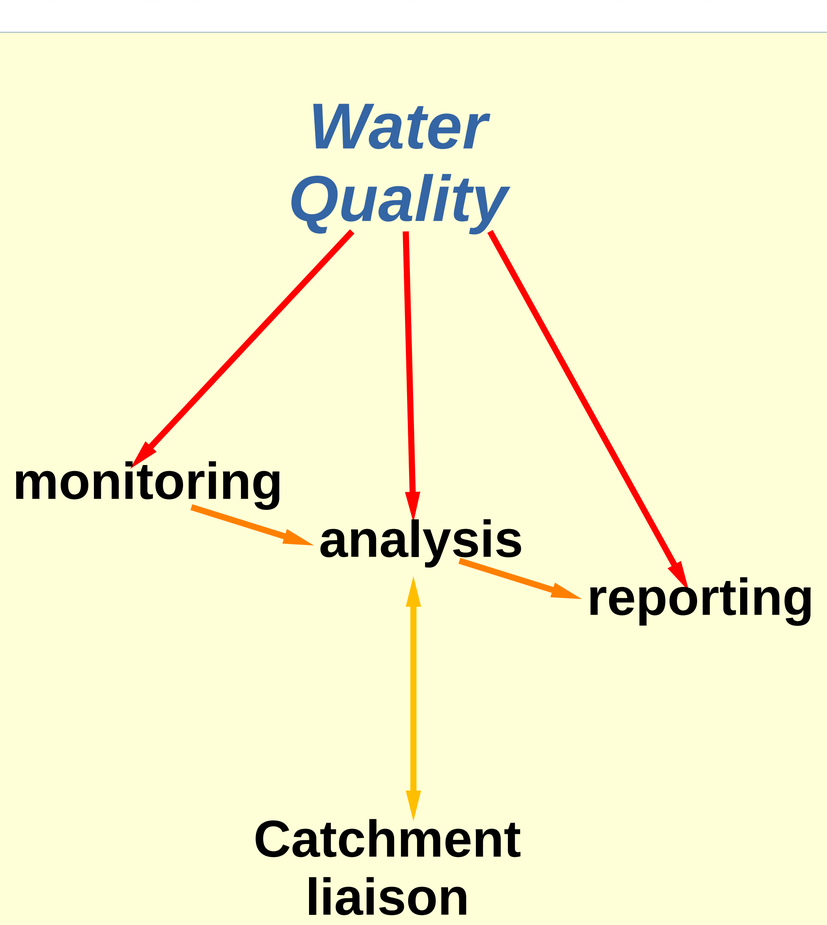
Poet and philosopher, Kahlil Gibran

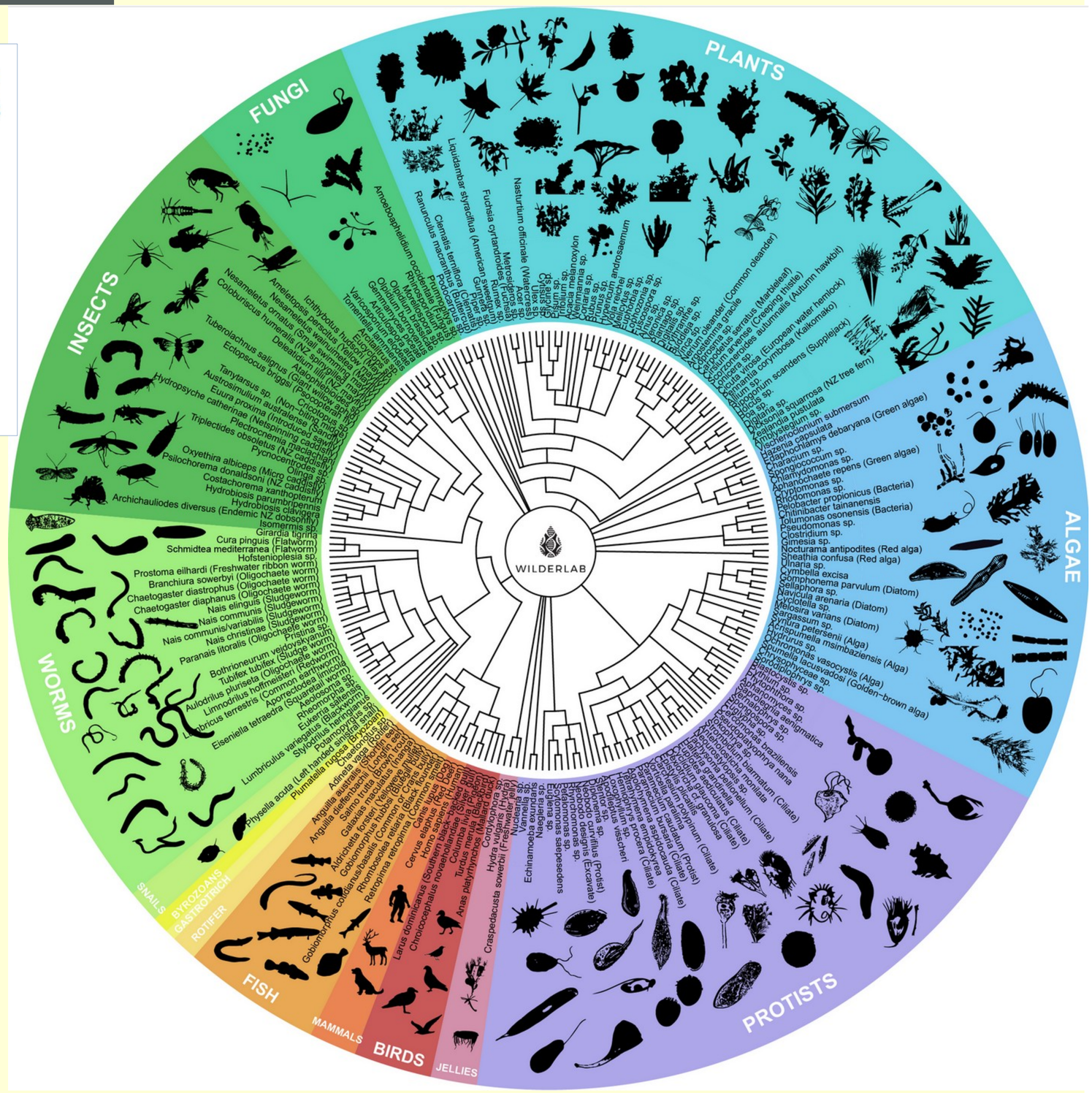
eDNA is a game changer

Environmental DNA, or eDNA, refers to all the tiny traces of genetic material that is left behind as living things pass through water or soil.

In your backyard, local stream or boggy field lurks a secret web of co-conspirators. Largely unseen, they slink and swoosh, creep and crawl, helping each other to survive. Sometimes there are many, sometimes there are few. How do we know this? They leave their DNA behind.

From kērēru to kōwhai, and the leaves in the wind, all living things shed genetic information into their local environment. This is called environmental DNA, or eDNA.





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