WEBINAR

Nature as BluePrint: Planetary intelligence and Human Innovation

30.06.2026 17:00 PM CET Host: SYNYO GmbH

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AGENDA

OneAquaHealth

Key information

Time	Topic	Presenter
17:00 – 17:05 (CET)	Welcome and introduction to the webinar	**Sónia R. Q. Serra** Marine and Environmental Sciences Centre / Aquatic Research Network, University of Coimbra, Portugal
17:05 – 17:15	Part I: The illusion of separation	
17:15 – 17:30	Part II: What nature already solved	
17:30 – 17:38	Part III: Observe before you build	
17:38–17:45	Part IV: From nature to your project	
17:45–17:50	Closing + Resources	
18:00	Q&A session	All participants
18:30 (CET)	**END OF THE WEBINAR**	

HOUSEKEEPING RULES

The session will be entirely recorded and published on the OneAquaHealth Open Information Hub.

All participants except speakers and moderators will be **muted by default**.

Feel free to post your questionsions in the **chat**.

If you would like to speak, raise your hand and wait for the moderator to give you the floor.

…

Has any technology we have ever built outperformed life itself?

If you want to share, just leave it in the chat

…

Has any technology we have ever built outperformed life itself?

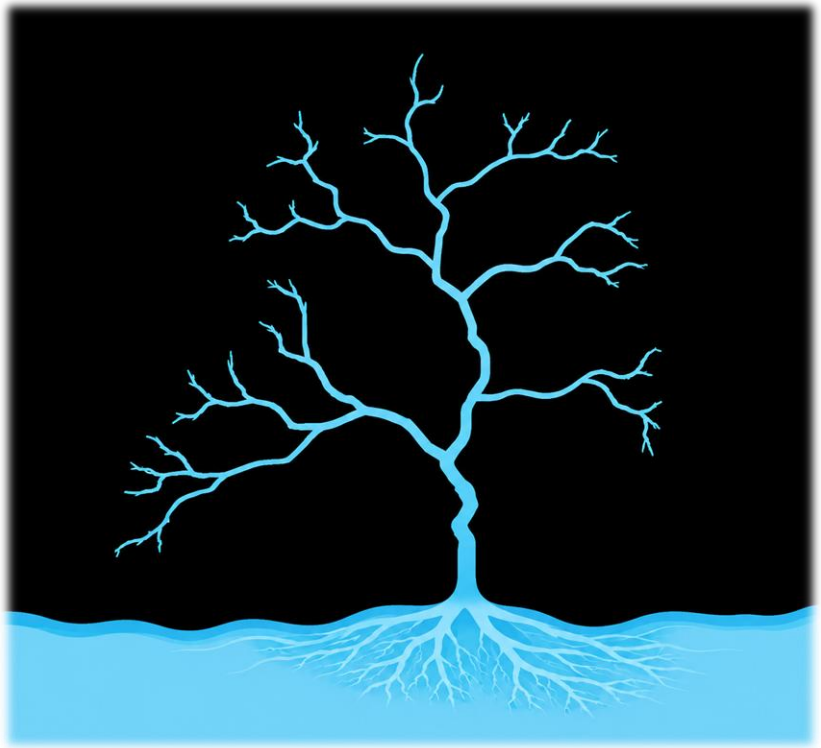
Spoiler… 3.8 billion years of R&D

No patents. No waste. No planned obsolescence.

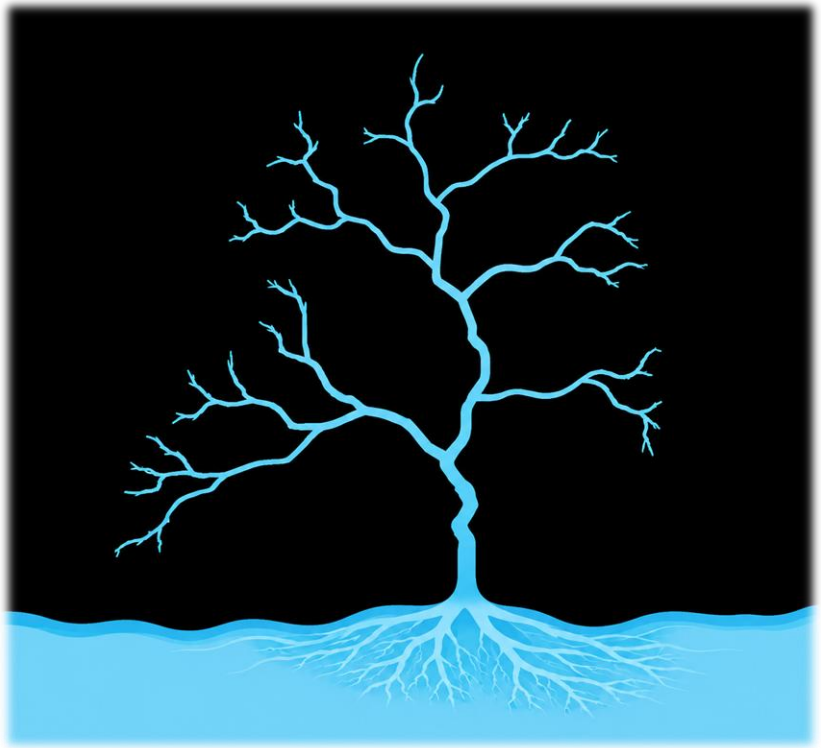
Life is not one solution. It is the condition for all solutions.

The stream or river as a teacher

Introduction



The stream or river as a teacher: form | pattern



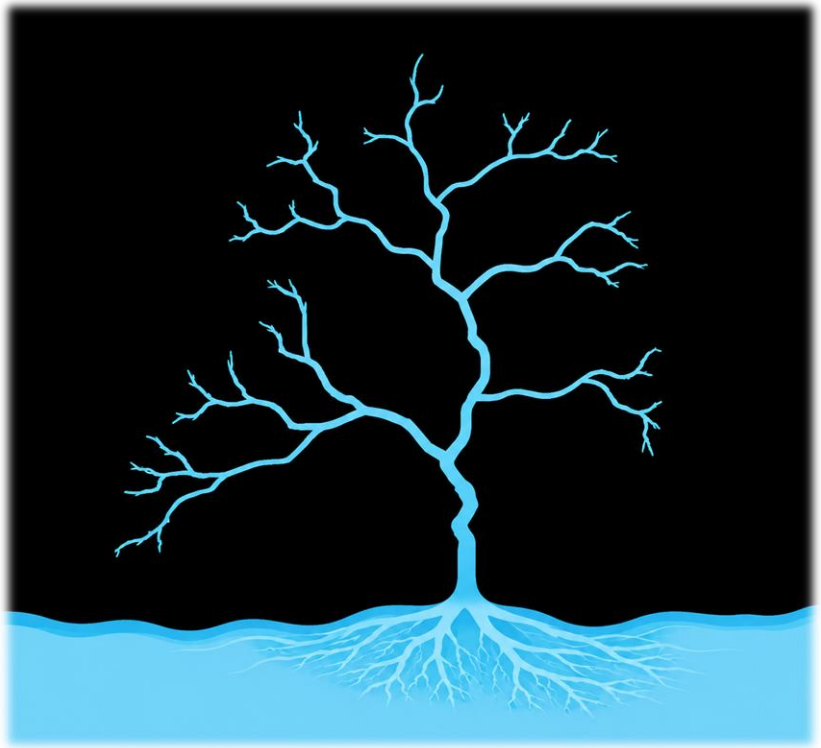
- **The same “form”, reinvented by evolution, again and again:**
  - River basins. Lungs. Tree roots. Fungal networks. Blood vessels.
- **One “form” → many solutions:**
  - When unrelated systems find the same solution, nature is telling you something.
  - This is not coincidence, but **convergent intelligence**.

It integrates. It connects. It responds.

The stream or river as a teacher: intelligence

Introduction

It doesn't monitor. It reads.



- A stream is an **information-processing network**: it integrates signals from the entire catchment, silently, continuously, for millennia. No sensor network on Earth does this at scale.
- A mayfly larva tells you **more about water quality** than any single chemical test. **Life reads life.**
- There is **no central processor.** Intelligence here is distributed, redundant, and context-aware.
- The most important thing I learned: **the stream/river always knows something I don't.**

It integrates. It connects. It responds.

The story we tell ourselves

Part I: The illusion of separation

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The dominant story

Technology liberates us from nature.

We no longer need the river.
We no longer need the soil.
We have machines and we control a lot.

This story is dangerous.
Not just philosophically, mainly functionally.

The (ecological) reality

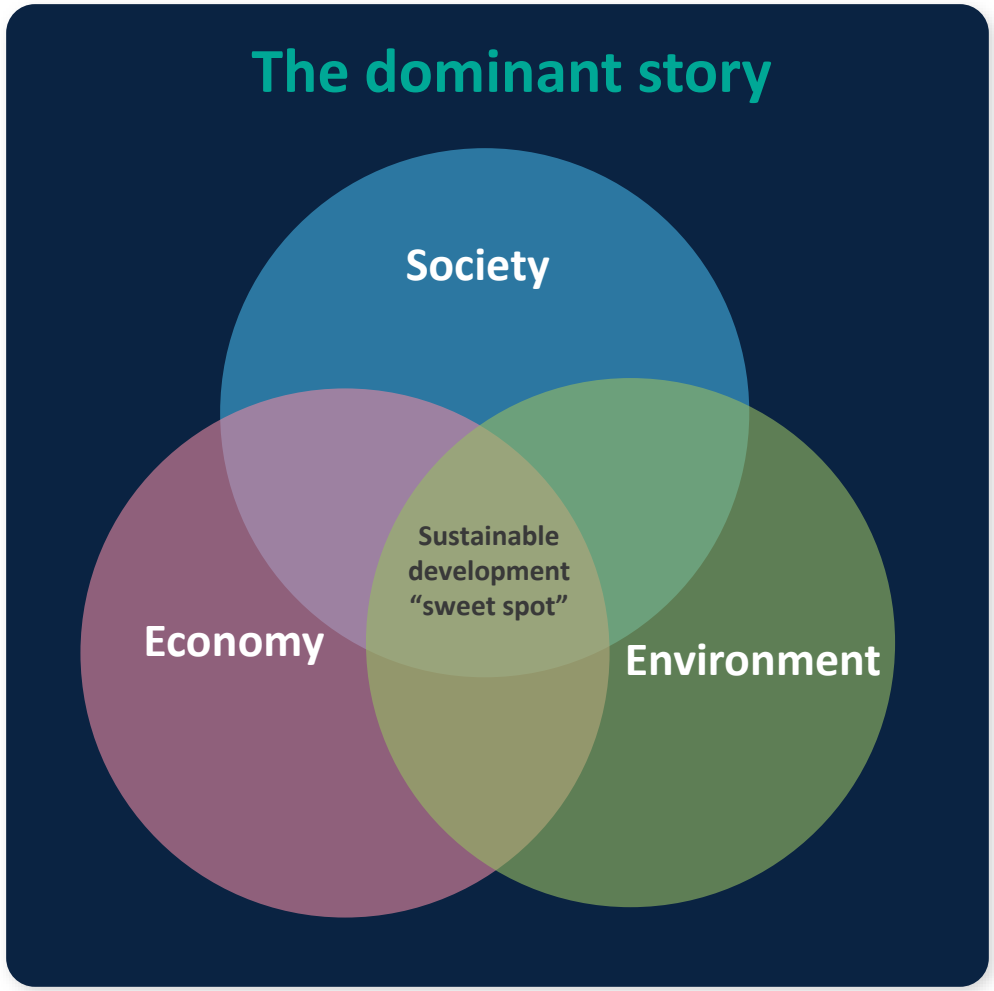
We are embedded in nature.

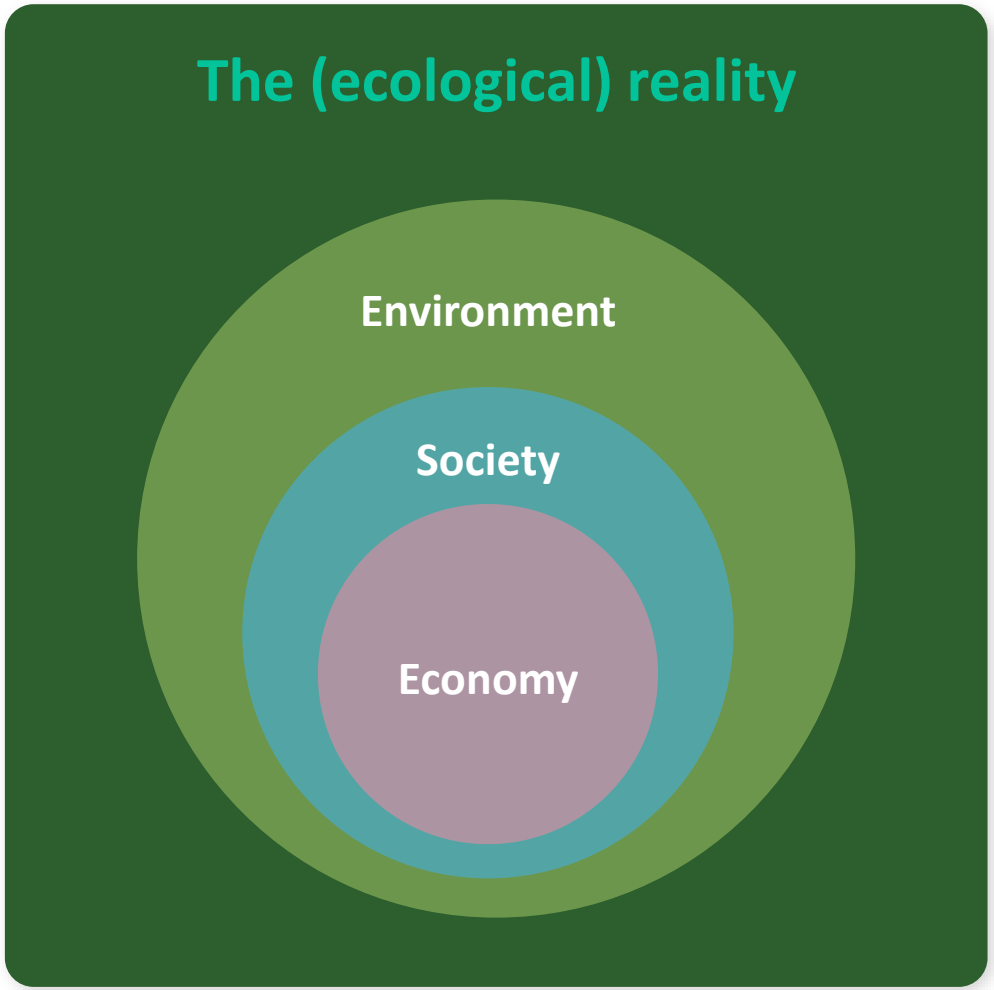
Every breath. Every sip of water.
Every heartbeat depends on systems we did not build.

Separation is not liberation.
It is a very expensive illusion.

What's the reality?

Part I: The illusion of separation

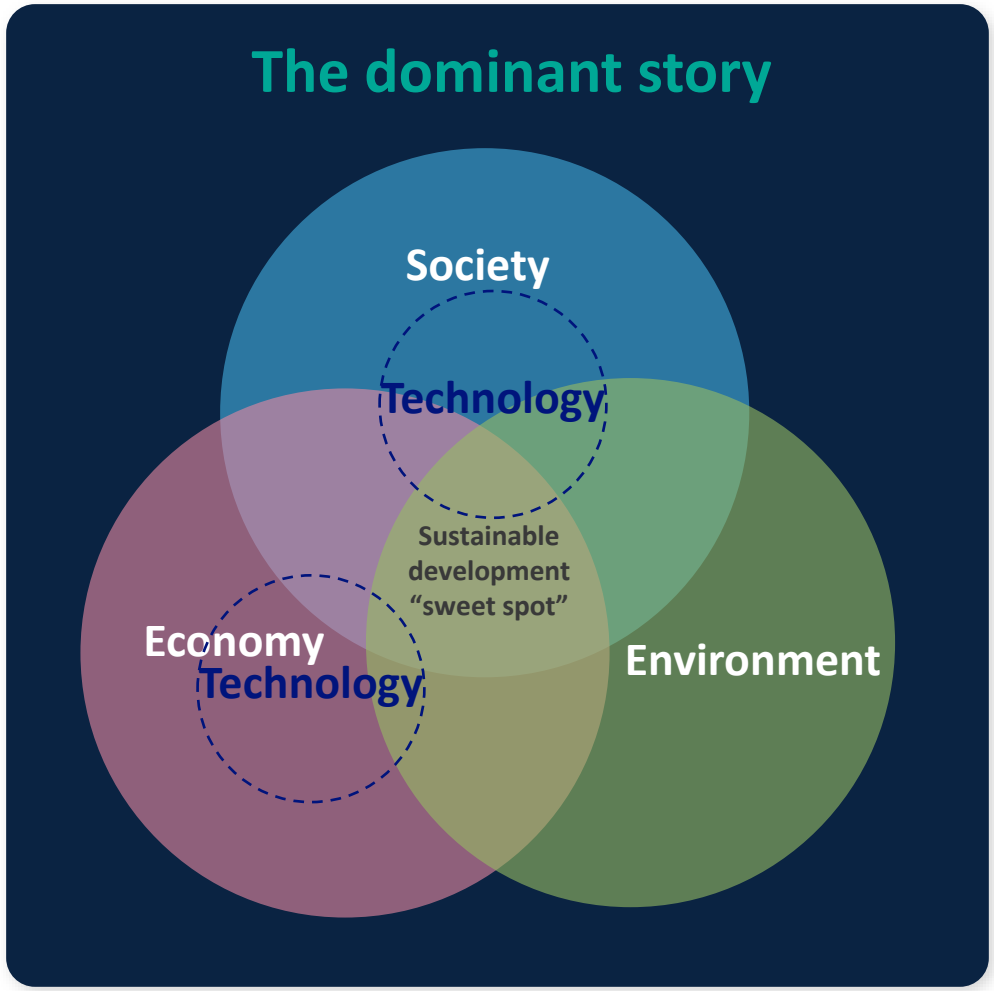


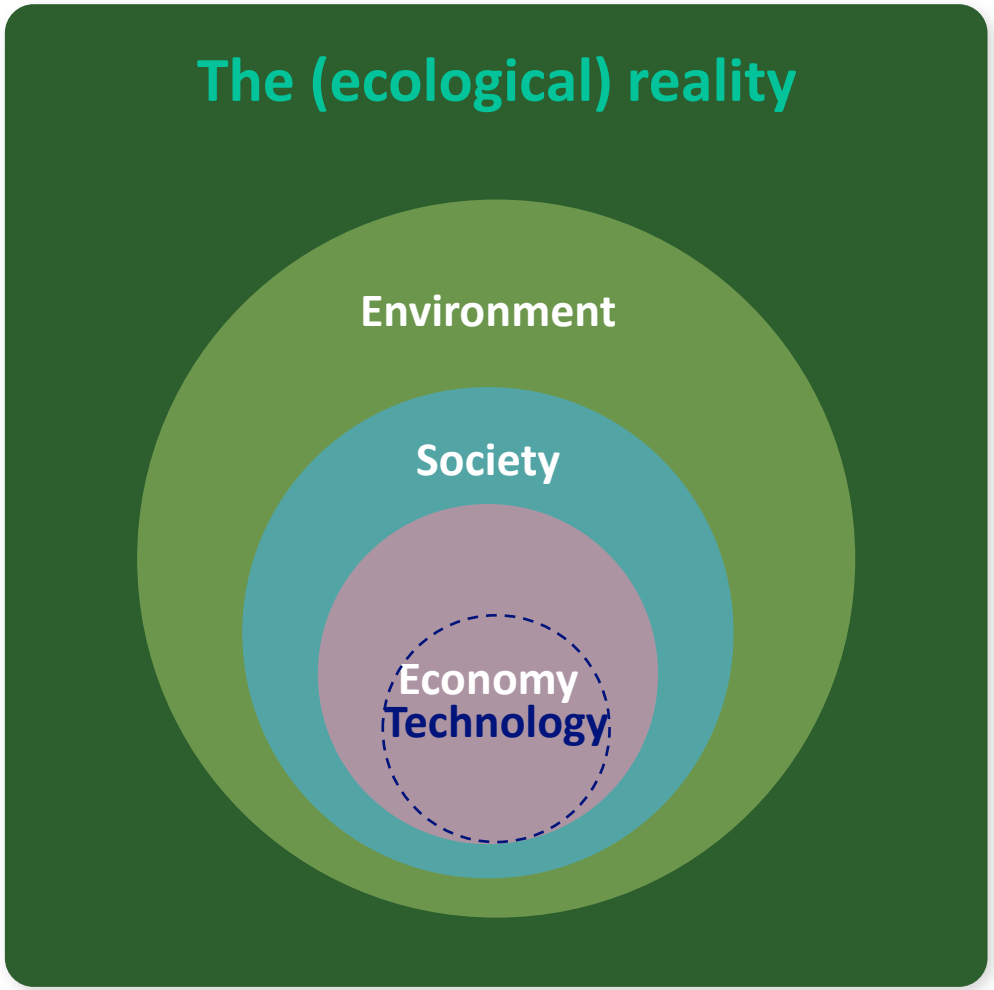


Adapted from: Locke *et al.* 2026

What's the reality?

Part I: The illusion of separation





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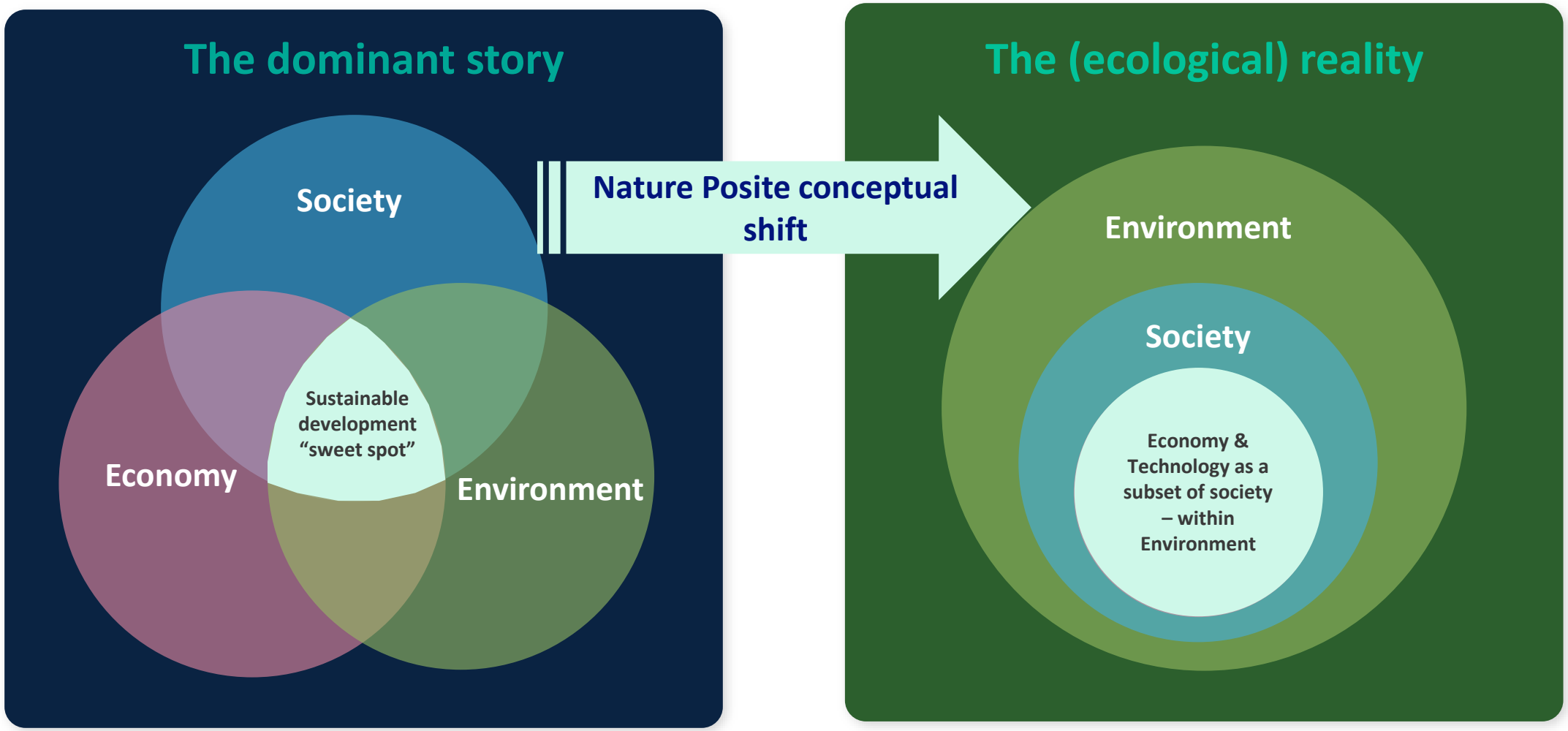
We need a conceptual shift… really

Part I: The illusion of separation



Adapted from: Locke *et al.* 2026

By disconnecting and without this shift…

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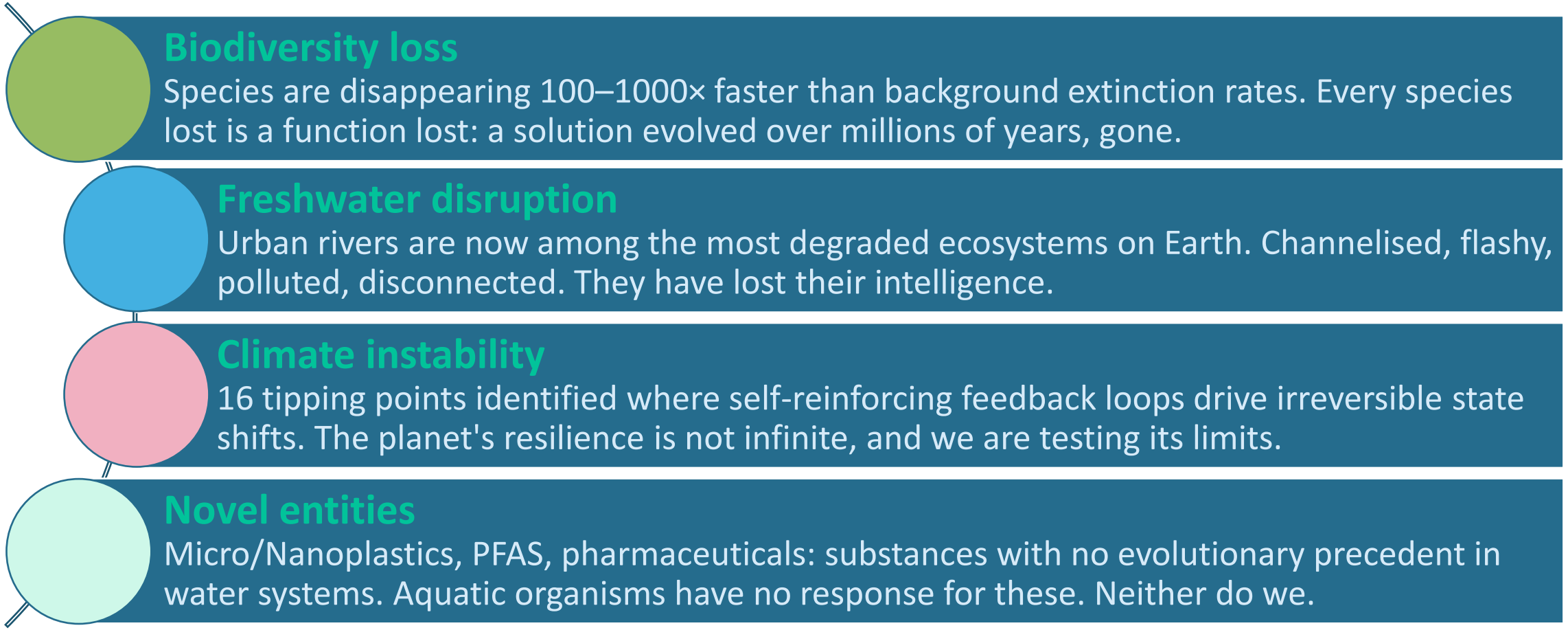
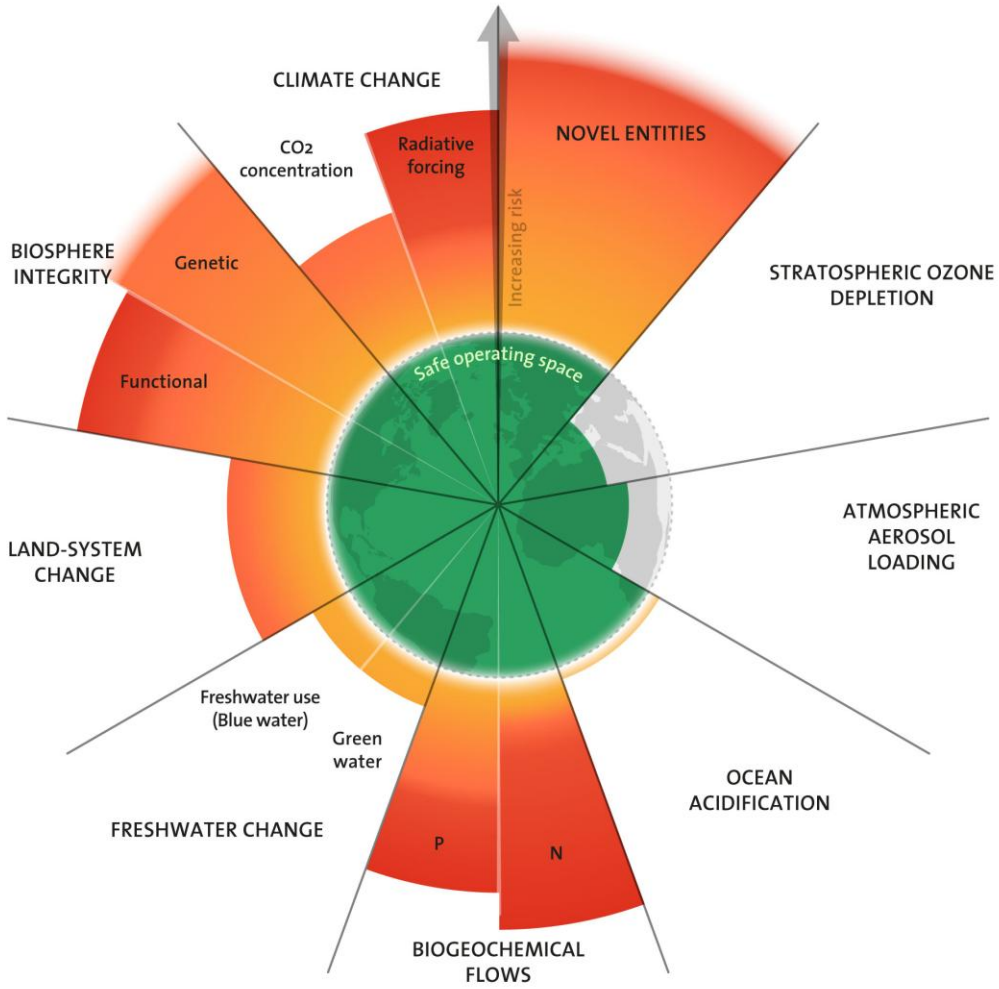


Source: Sakschewski *et al.* 2025, Richardson *et al.* 2023, Steffen et al. 2015, and Rockström *et al.* 2009

… Planetary boundaries framework

Part I: The illusion of separation



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… Planetary boundaries framework

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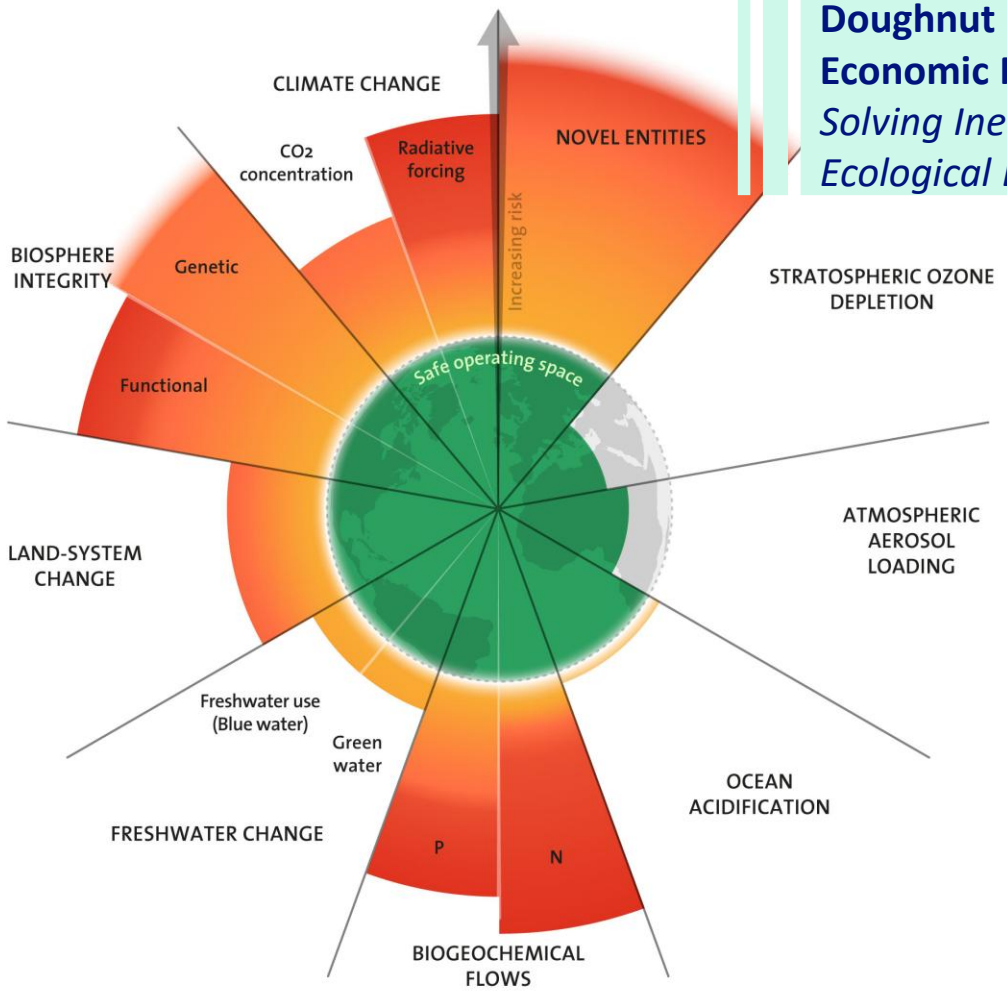
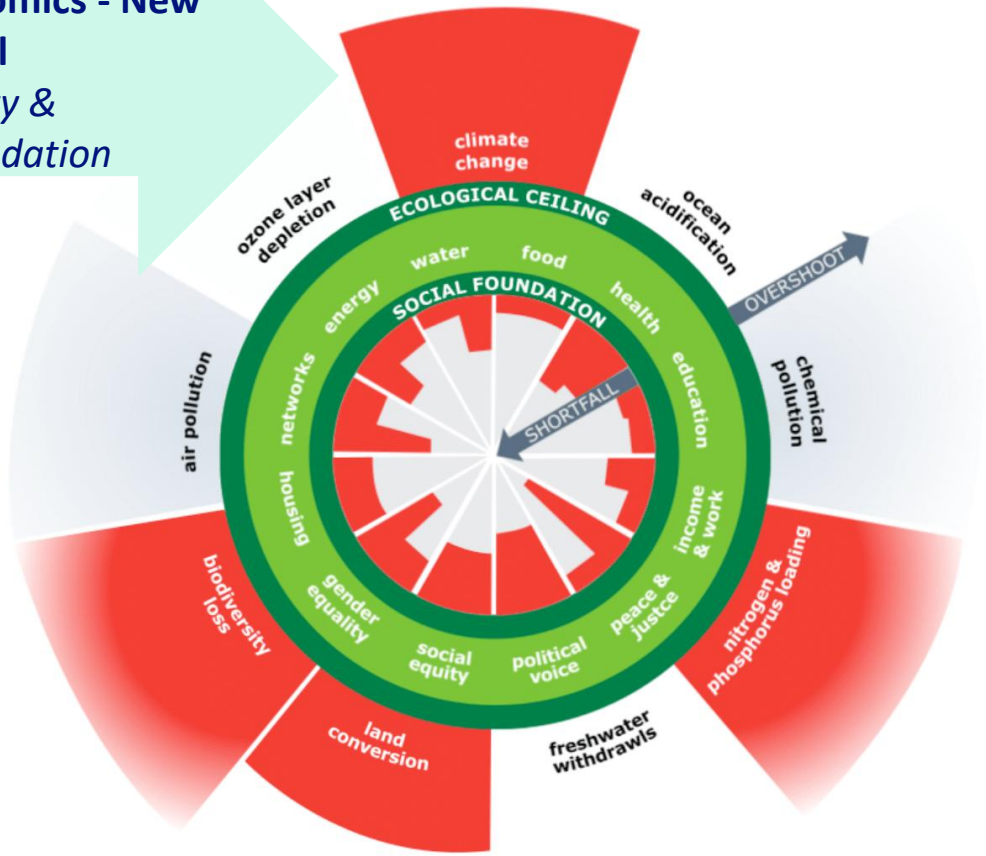
Part I: The illusion of separation



Doughnut Economics - New Economic Model

Solving Inequality & Ecological Degradation



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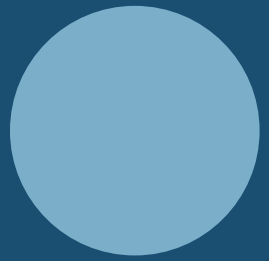
Raworth (2017) *Doughnut Economics: Seven Ways to Think Like a 21st-Century Economist*, doughnuteconomics.org | illustration: bst-europe.eu.

One Planet · One Health · One Technology



One Planet

The biosphere is not a backdrop to human activity; it is the condition for it. Climate, biodiversity, water cycles, soil. These are not 'ecosystem services'. ***They are us.***

One Health

Human health, animal health, and ecosystem health are inseparable. A degraded river is not an environmental problem. It is a public health problem. A zoonosis problem. A food security problem.

One Technology

Every technology we build must answer to the whole system. Not just the human metric. Not just the dashboard. The test: ***does your solution make nature more possible, or less necessary?***

Does your solution make nature more possible, or less necessary?

One perspective

Part I: The illusion of separation

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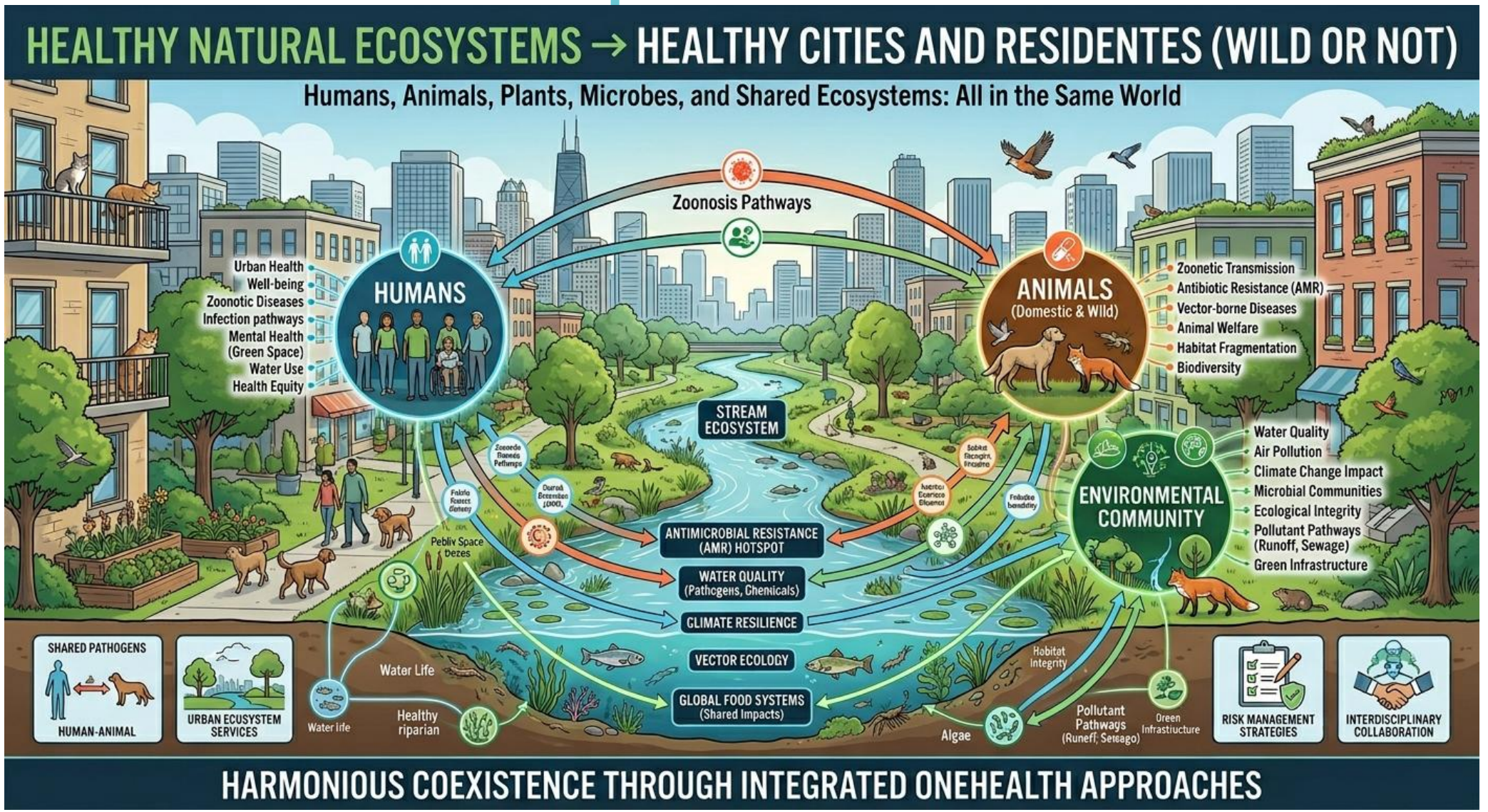

Planetary intelligence

Part II: What nature already solved

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Ecosystems as information-processing networks.

Integrates

A river integrates signals from its entire catchment (rainfall, land use, soil chemistry, temperature, biological load) in real time. No sensor network on Earth does this at this scale.

Remembers

Communities encode cumulative environmental memory. A single macroinvertebrates kick-sample tells the story of months of water quality. Not a snapshot, a biography of the system.

Responds

When conditions change, ecosystems respond, not through central command but through distributed, redundant signals. Every species is both sensor and actuator.

Regenerates

Unlike our machines, **healthy** ecosystems produce the conditions for their own continuation. This is not efficiency it is something deeper: generativity.

Nature already solved it

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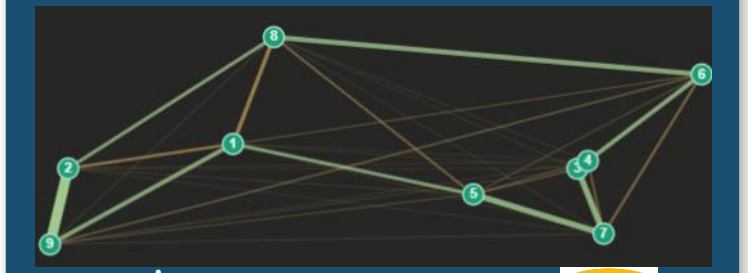
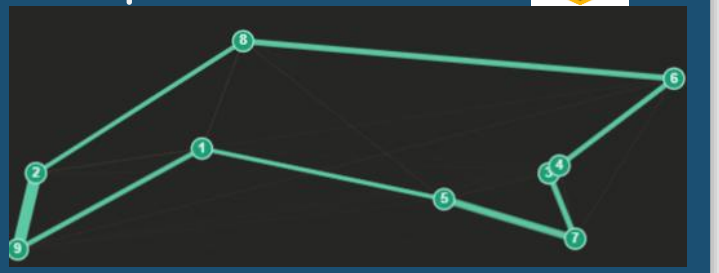
These are not metaphors; they are the originals.

Engineering

Architecture

Computing & AI





Sources: Wikimedia Commons· Unsplash · Pexels, free for educational use. Ant simulation made by Claude Anthropic's AI.

Nature already solved it

OneAquaHealth

These are not metaphors; they are the originals.

Engineering

Shinkansen bullet train

Kingfisher beak → train nose

- The bird enters water with near-zero splash.
- Engineers copied the geometry to solve sonic booms in tunnels.
- 15% energy saving.

Architecture

Termite ventilation

Termite mounds → shopping centre and office block

- Termites maintain 31°C (3°C to 42°C outside) with no technology.
- Eastgate Centre, Harare: built on this principle.
- 90% less energy than conventional HVAC.

Computing & AI

Ant colony optimization

Ant pheromones→ delivery route algorithms

- Ants find the shortest path with no map and no leader, by accumulating stronger chemical trails.
- UPS routing uses the same principle
- Saving 100 million miles per year

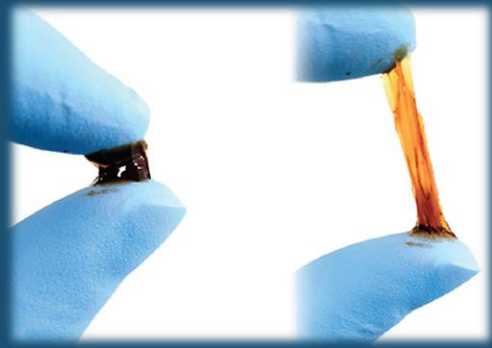
Nature already solved it

OneAquaHealth

These are not metaphors; they are the originals.

Aerospace

Medicine



Water

Sources: Wikimedia Commons. Wei et al. (2024), Bandara et al. (2012), Weiss Research Group/UCLA, asknature.org

Nature already solved it

OneAquaHealth

These are not metaphors; they are the originals.

Aerospace

Owl serrated feathers

Owl feathers → efficient flight

- Owl wing edges have comb-like serrations that break up turbulence into micro-vortices.
- Applied to wind turbine blades and quieter aircraft wing designs.
- Silences flight, eliminates drag and maintains lift.

Medicine

Mussel adhesion

Mussel adhesion → surgical glue

- Mussels anchor in turbulence with DOPA-rich protein.
- Inspired wet-adhesive surgical sealants.
- It bounds in moist tissue where nothing else holds.

Water

Namib beetle

Fog → Water harvesting

- Fog collected passively with zero energy, using micro-surface geometry alone.
- Inspires low-tech, low-cost sensor deployment in water-scarce catchments.

The stream or river doesn’t just carry water

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It processes. It filters. It remembers.

No waste.
No central command.
No engineer required.

This is not a metaphor for intelligence
*→ It **is intelligence!***

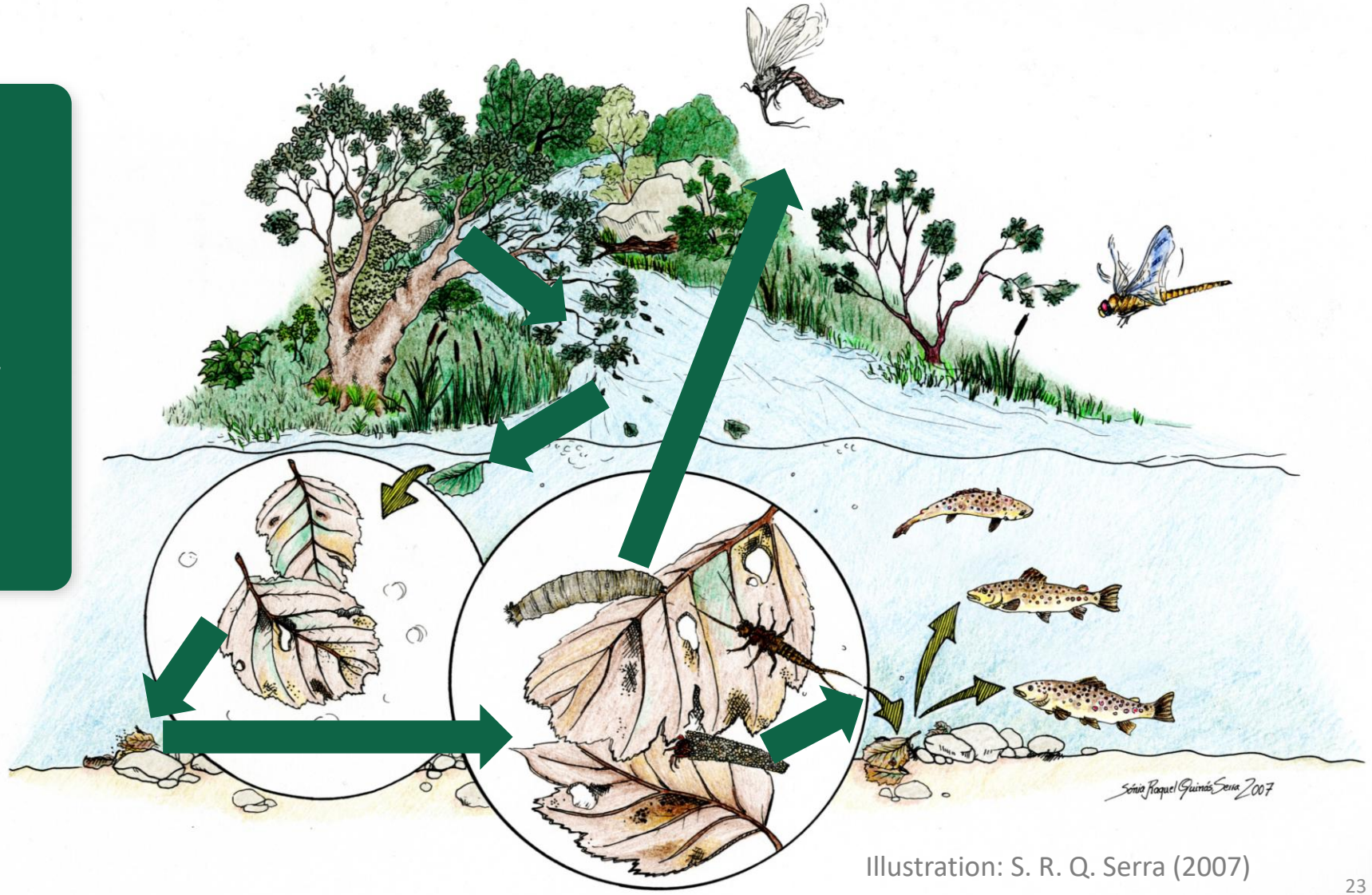

Illustration: S. R. Q. Serra (2007)

The surrogate trap

Part II: What nature already solved

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When nature becomes an excuse not to conserve or restore

- The most well-intentioned technologies can make nature seem unnecessary.
- This is the surrogate trap, and it is dangerous.

❌ The surrogate approach	✅ The ecological approach
Copies what river does	Asks: what does the river need to do it itself?
Replaces the natural system	Restores the conditions for it
Technology as permanente solution	Technology as temporary scaffolding
Treats the symptom	Address the system

If your solution makes the stream less necessary → you have failed.
If it makes the stream more possible → you have succeeded.

What part of nature do you think would blow your mind to really understand?

What living system does any of your past projects, and the one, most resemble?
A river, a mycelium, a swarm…?

If you want to share, just leave it in the chat

What part of nature do you think would blow your mind to really understand?

What living system does any of your past projects, and the one, most resemble?
A river, a mycelium, a swarm…?

Spoiler… I'm sure you been doing it!
Even if you don't recognize it immediately.

You've been doing it...

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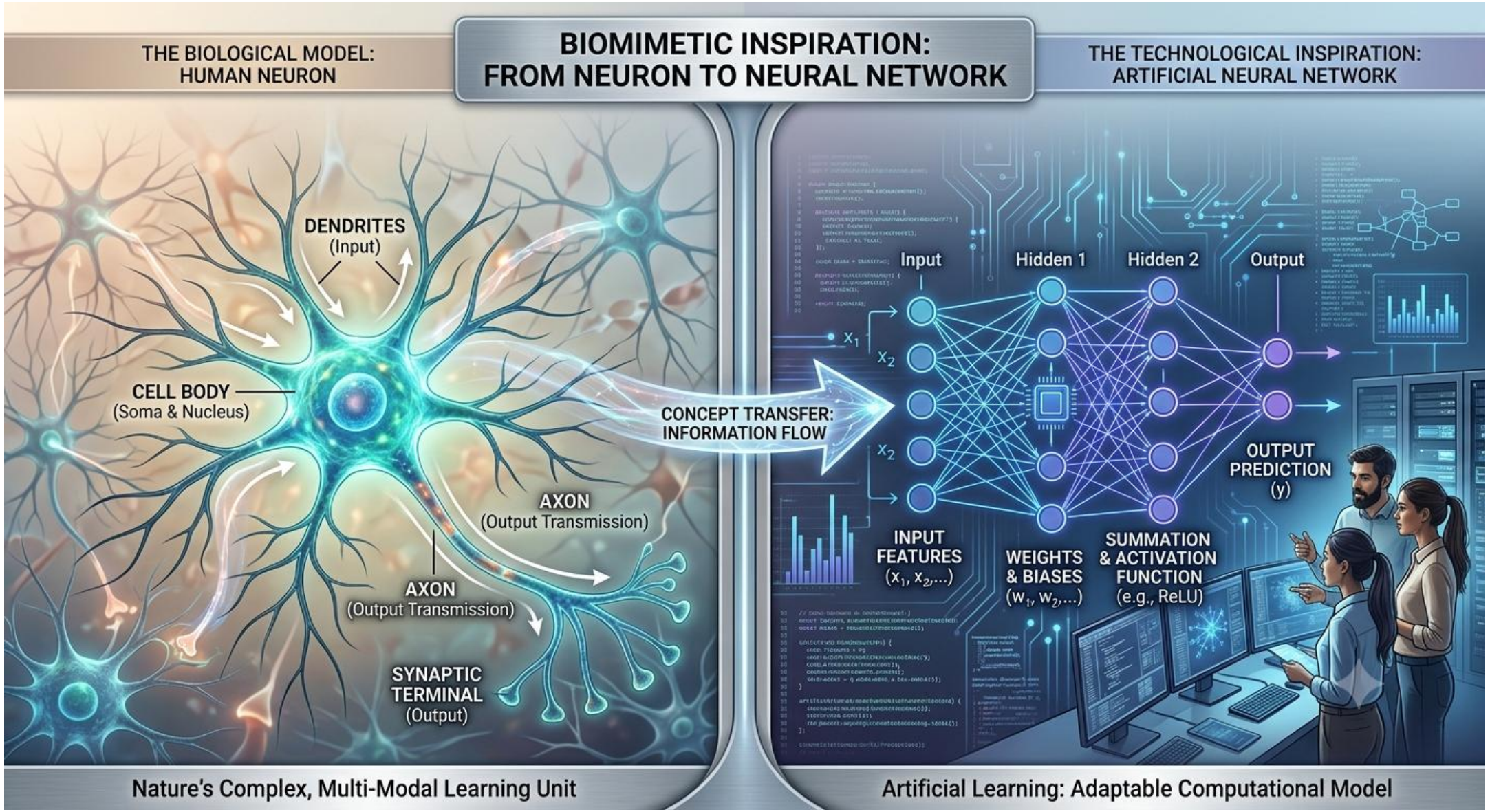
Part II: What nature already solved



Source: google ai gemini

You've been doing it...

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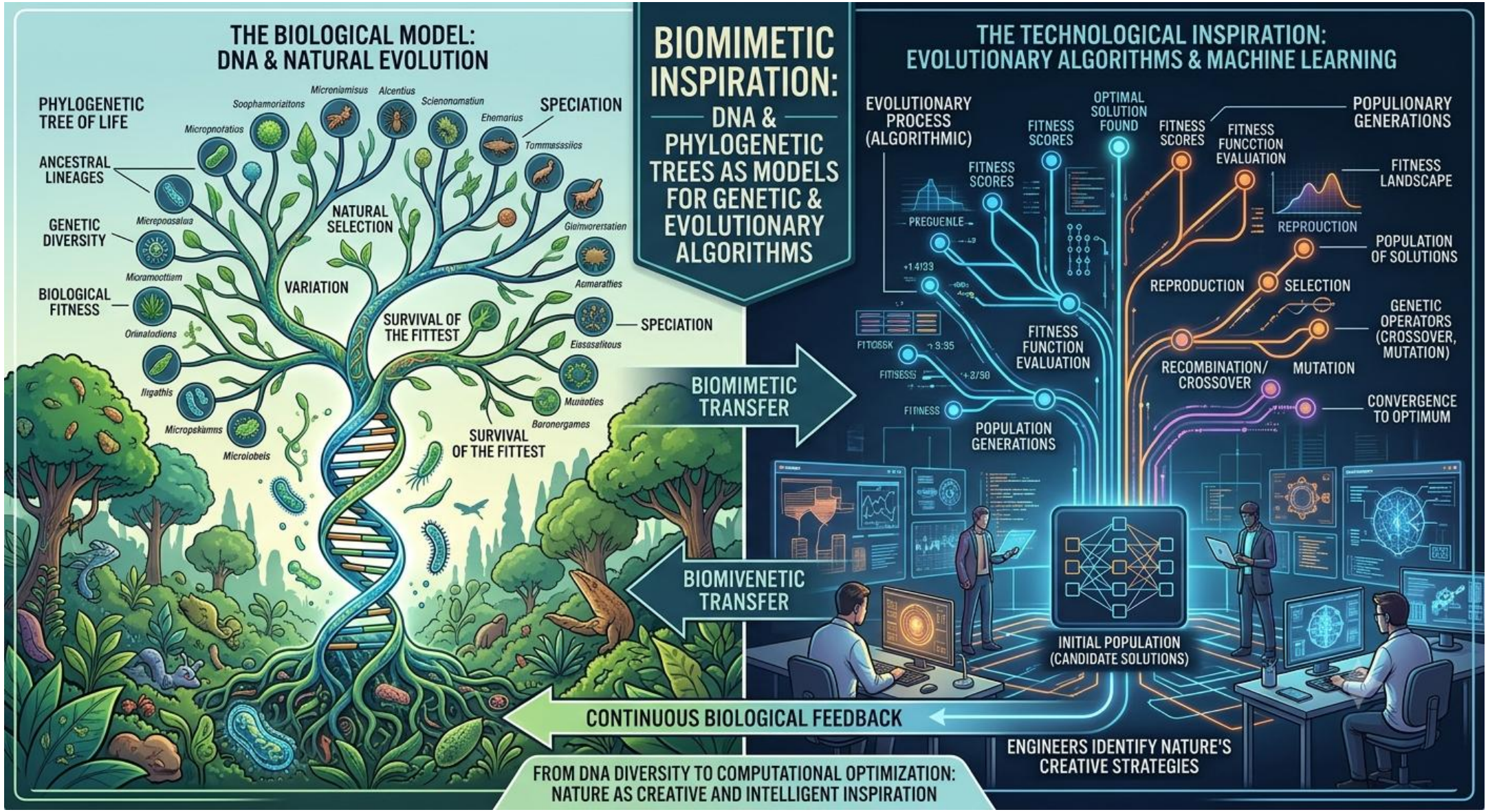
Part II: What nature already solved



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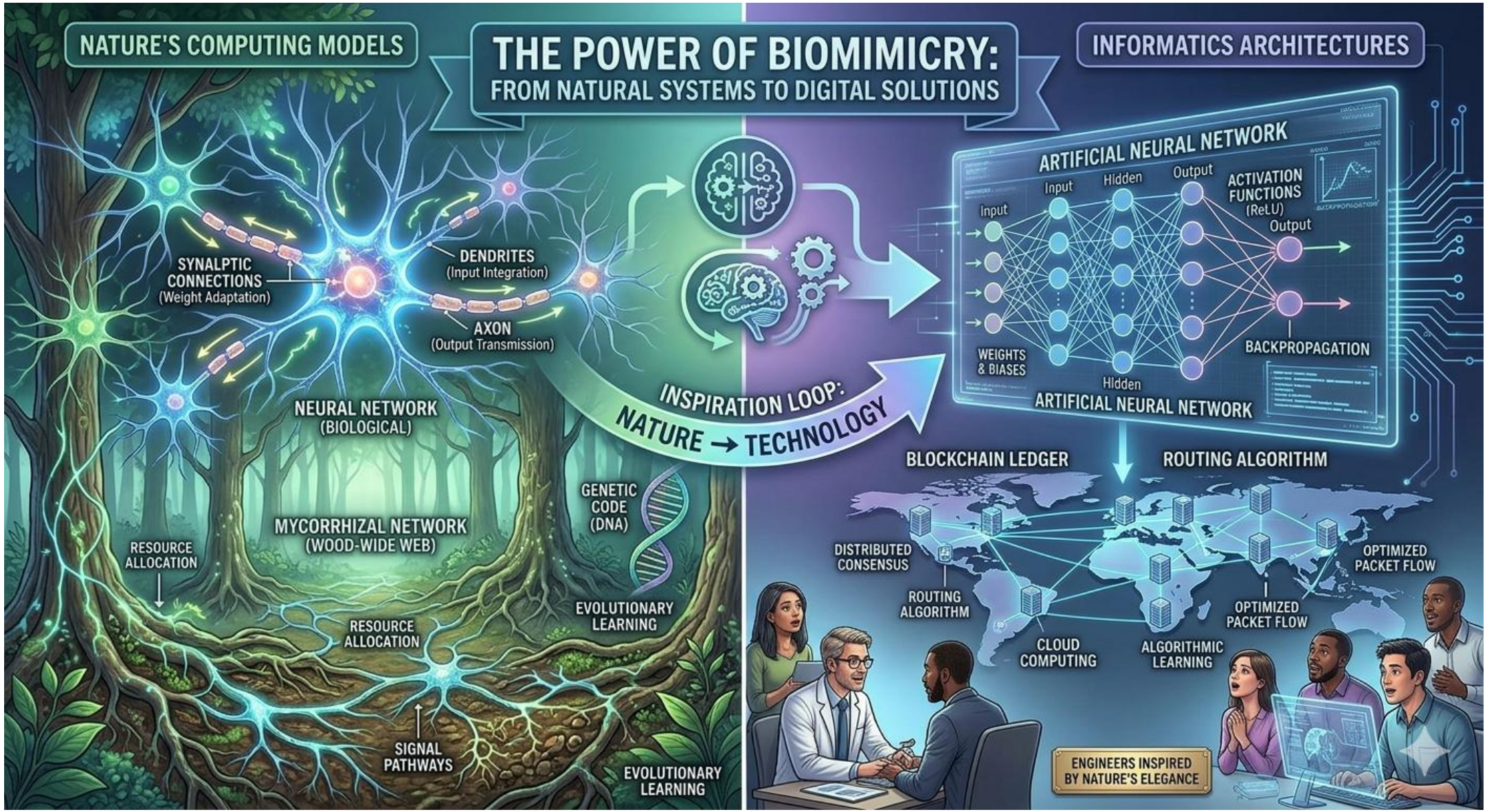
You've been doing it…

Part II: What nature already solved



Source: google ai gemini

…

How can the logic of an urban stream ecosystem inspire the architecture of One Health technology?

If you want to share, just leave it in the chat

Culture pushes you: build fast, iterate fast.

Today I am asking the opposite…

Observe first!

- The most resilient systems on this planet did not iterate fast.
- They evolved slowly, with total attention to context.
- And they have been running without crashes for millions of years.

How to observe, a simple protocol

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Before you open your laptop… Let nature be the first brief.

1. Go somewhere alive.
2. Sit still for 10 minutes. No photos. No notes.
3. Ask: what problem is nature solving?
4. Look for small things.
5. Connect what you see to what you do.
6. Visit the same place (if it makes you feel good) repeatedly.
7. Keep a nature notebook.

Stay amazed. Stay porous. Stay curious. Stay open…

Part IV: From nature to your project

Stay amazed. Stay porous. Stay curious. Stay open…

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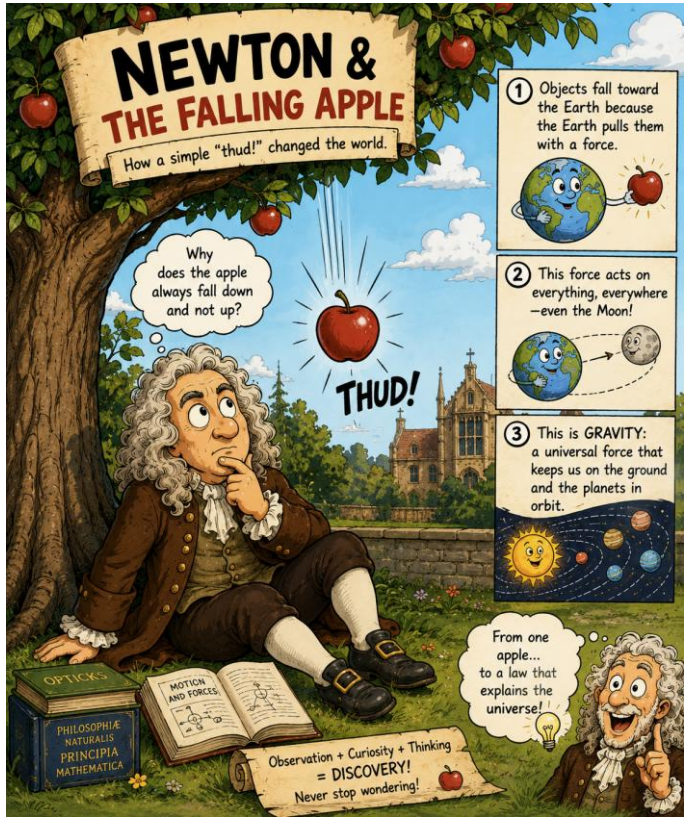
Part IV: From nature to your project

Inspiration doesn't (just) live inside us…

… It passes through us!



The pattern isn't (just) genius.

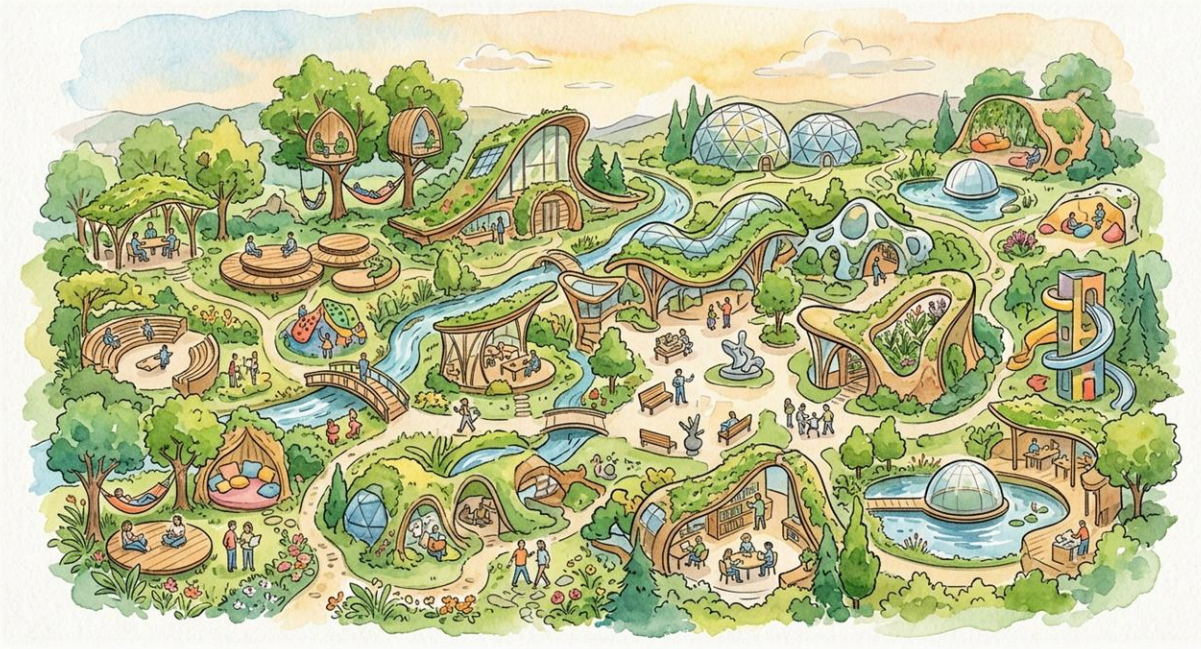
It's attention and openness.

Stay amazed. Stay porous. Stay curious. Stay open…

Part IV: From nature to your project

This is not a soft suggestion. It is the epistemological condition for genuine innovation.
You cannot learn from nature without first being willing to be astonished by it.
Amazement is not the opposite of rigor. It is its beginning.

Any doubt?



Now build something the stream or river would recognize. Be "One"!

Resources:

Websites:

asknature.org
santafe.edu
iNaturalist.org
biomimicry.net
eol.org

Books:

Thinking in Systems, **Donella Meadows (Legacy:** donellameadows.org)
Braiding Sweetgrass, **Robin Wall Kimmerer**
Biomimicry, **Janine Benyus**
The Shark's Paintbrush, **Jay Harman**

Questions & Answers

Give yourself permission to say: I don't know!

And ask nature! → [asknature.org]

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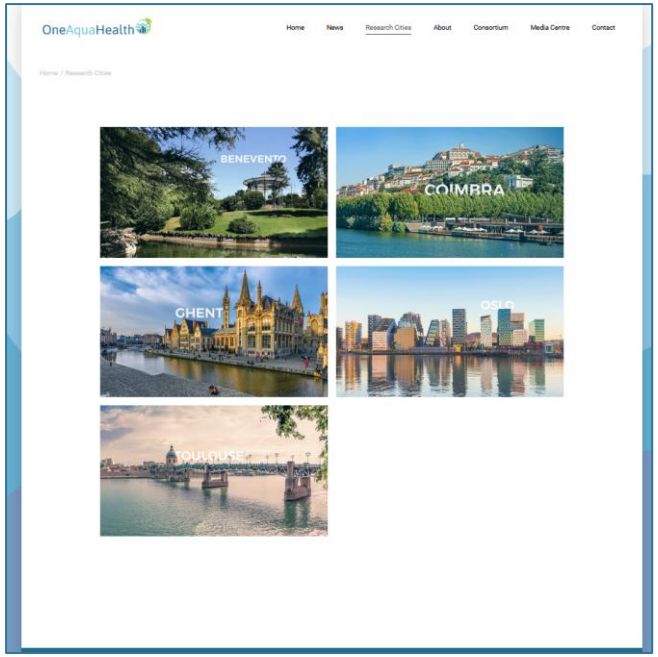

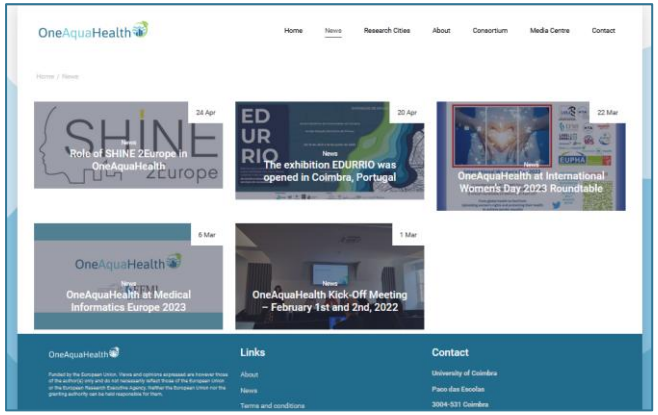

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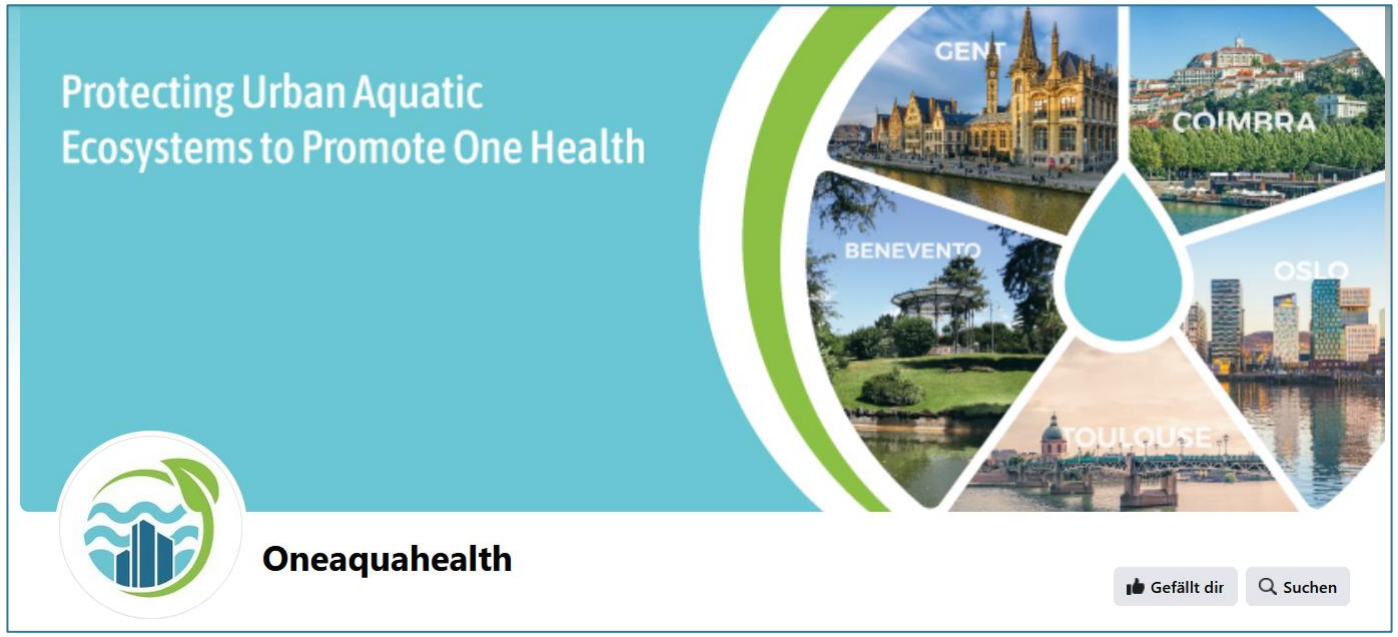

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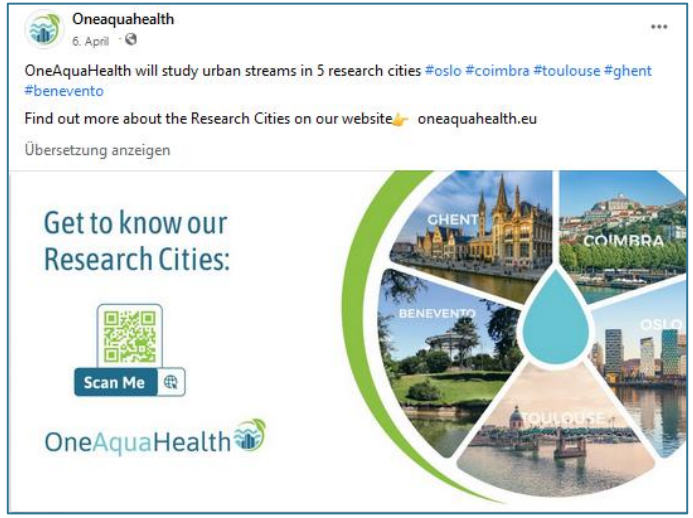

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LinkedIn account|https://www.linkedin.com/company/oneaquahealth/

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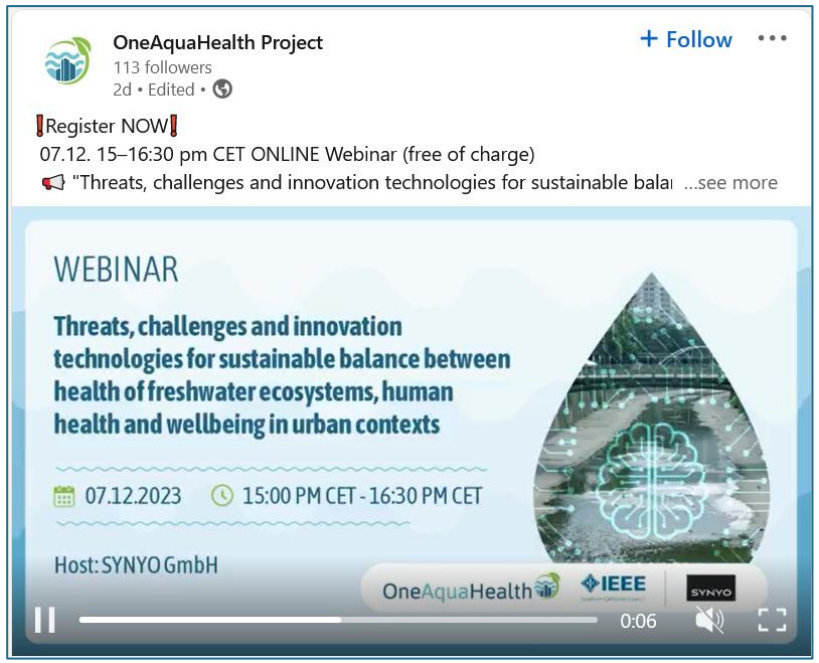

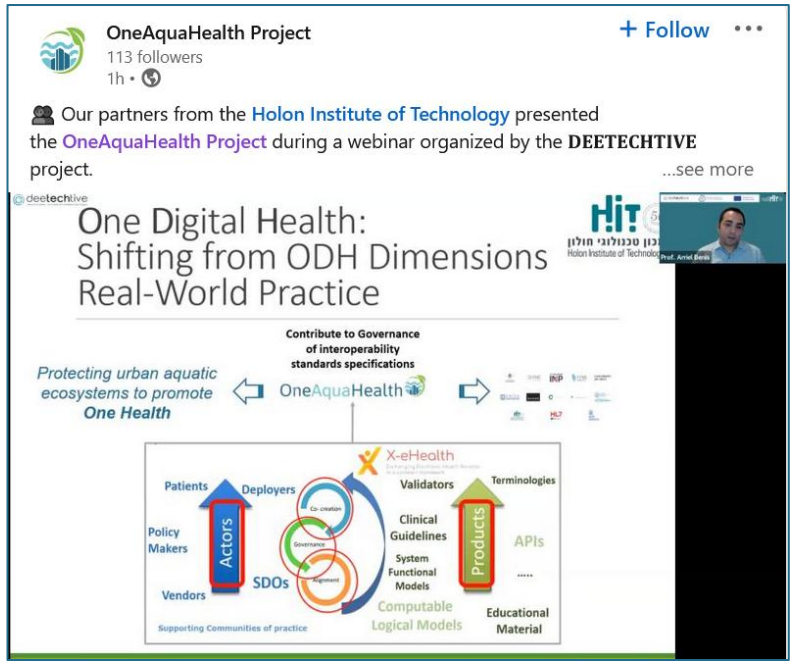

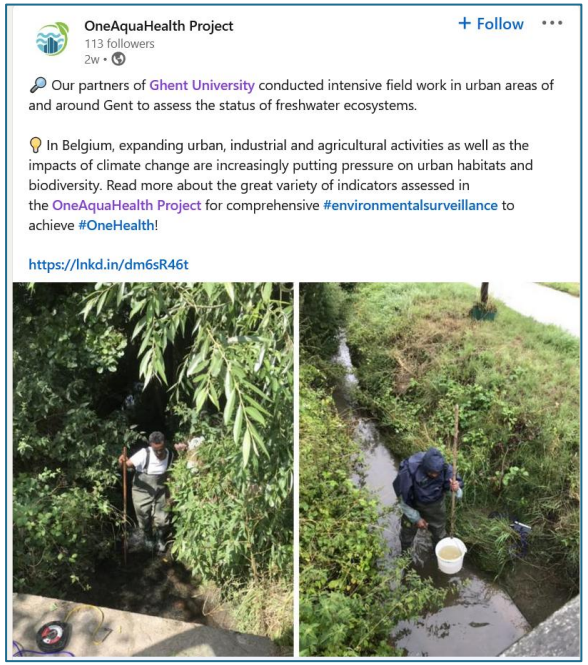

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Contact us, get involved, stay updated:

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