

Ecological Infrastructure and Ecosystem Services: An introductory overview

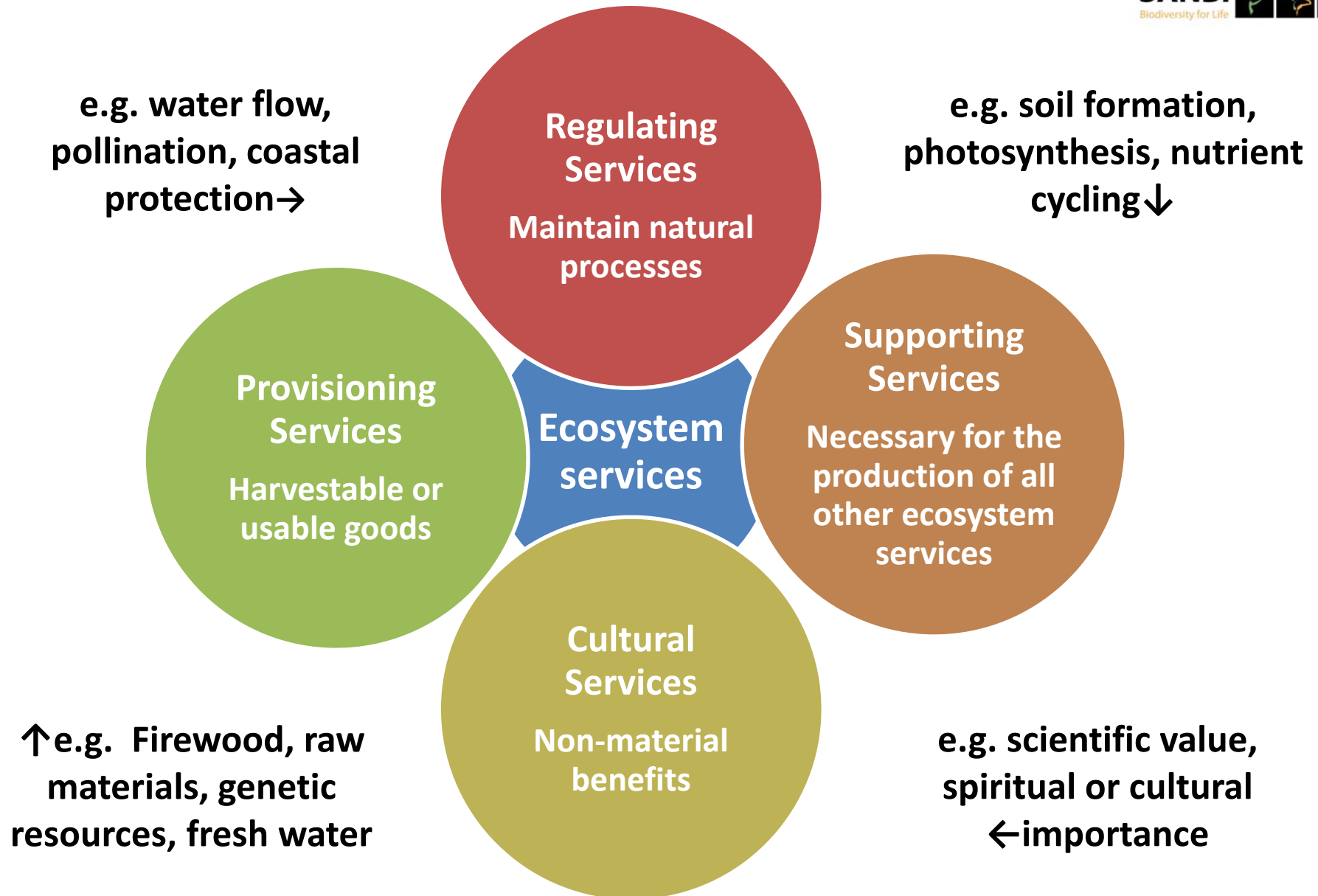
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Ecosystem Services

The **benefits** that people obtain **from ecosystems**, including:

- **provisioning services** (such as food and water),
- **regulating services** (such as flood control),
- **cultural services** (such as recreational benefits), and
- **supporting services** (such as nutrient cycling, carbon storage)

Ecosystem services are the **flows of value to human society**



Different target audience....

•disaster risk
reduction

•bioprospecting

•ecosystem resilience

•water
provision

•genetic resources
for agriculture

•crop pest
control

•recreation

•soil fertility

•erosion control

•pollination

•grazing

•flow regulation

•climate regulation

•carbon storage

•fish nursery

Making the Case narrative: Explicitly linking Biodiversity to ES



Biodiversity is everything we have; it is the variety of life.

Interconnected living things and natural systems provide a foundation for:-

Economic growth (jobs)
Social development (service delivery)
Human well being (a better life)

Biodiversity provides clean water, food, medicine and fibre.

Biodiversity regulates & mitigates our climate; it protects us from natural disasters like floods, fires and coastal erosion.

Biodiversity gives us places to play. Biodiversity empowers us to cope with change.

The wealth of South Africans is built upon biodiversity.

Ecological Infrastructure

The **stock** of **ecosystems** and **species**, or **natural capital**, that **provides a flow** of essential **ecosystem services** to people

Characteristics

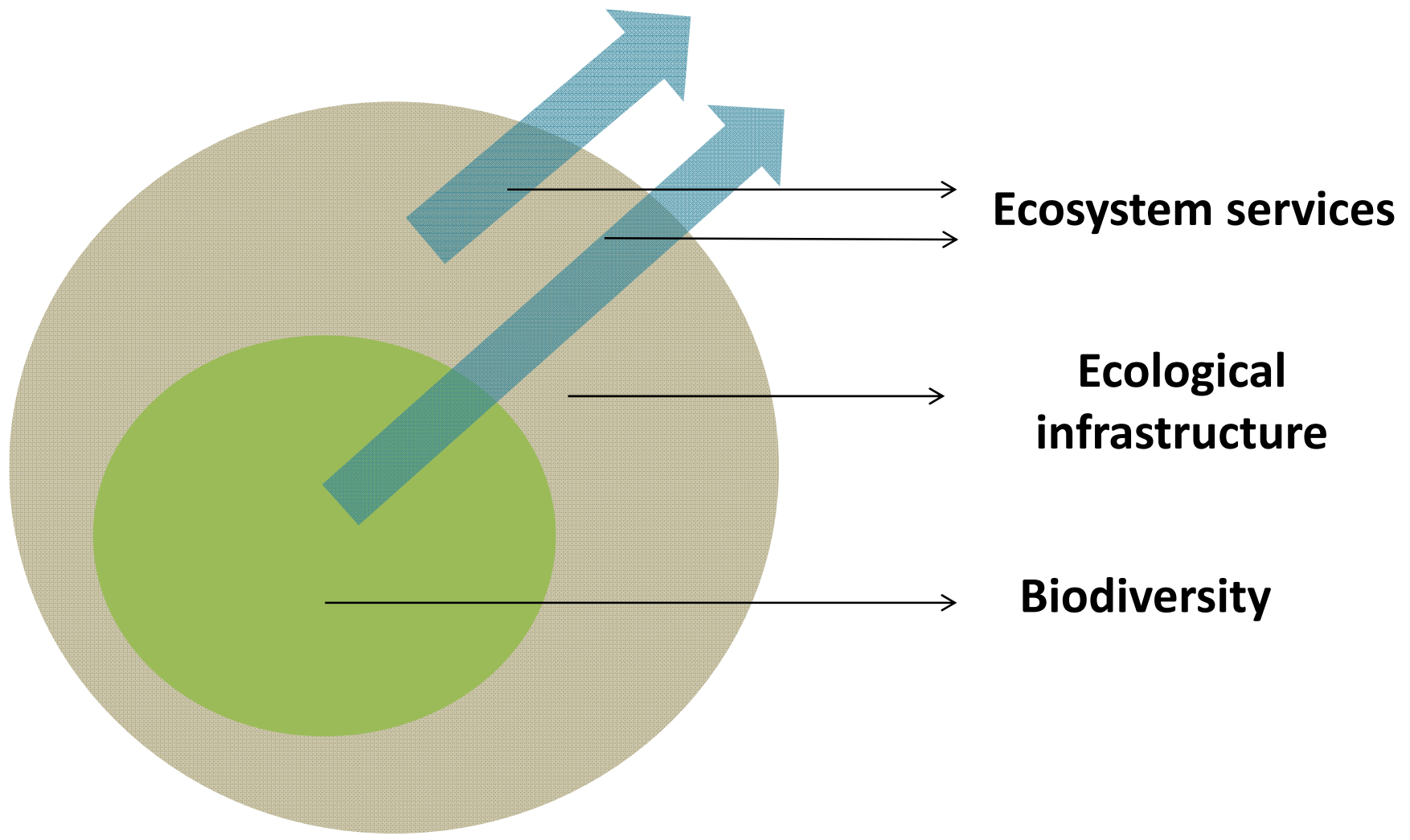
Networks of ecological infrastructure may take the form of large tracts of **natural** land or ocean, or small remaining patches or corridors embedded in **production landscapes**.

If ecological infrastructure is degraded or lost, the flow of **ecosystem services** will diminish.

Ecological infrastructure can be in a **modified state**, with elements of built infrastructure e.g. a restored wetland with gabions.

Characteristics

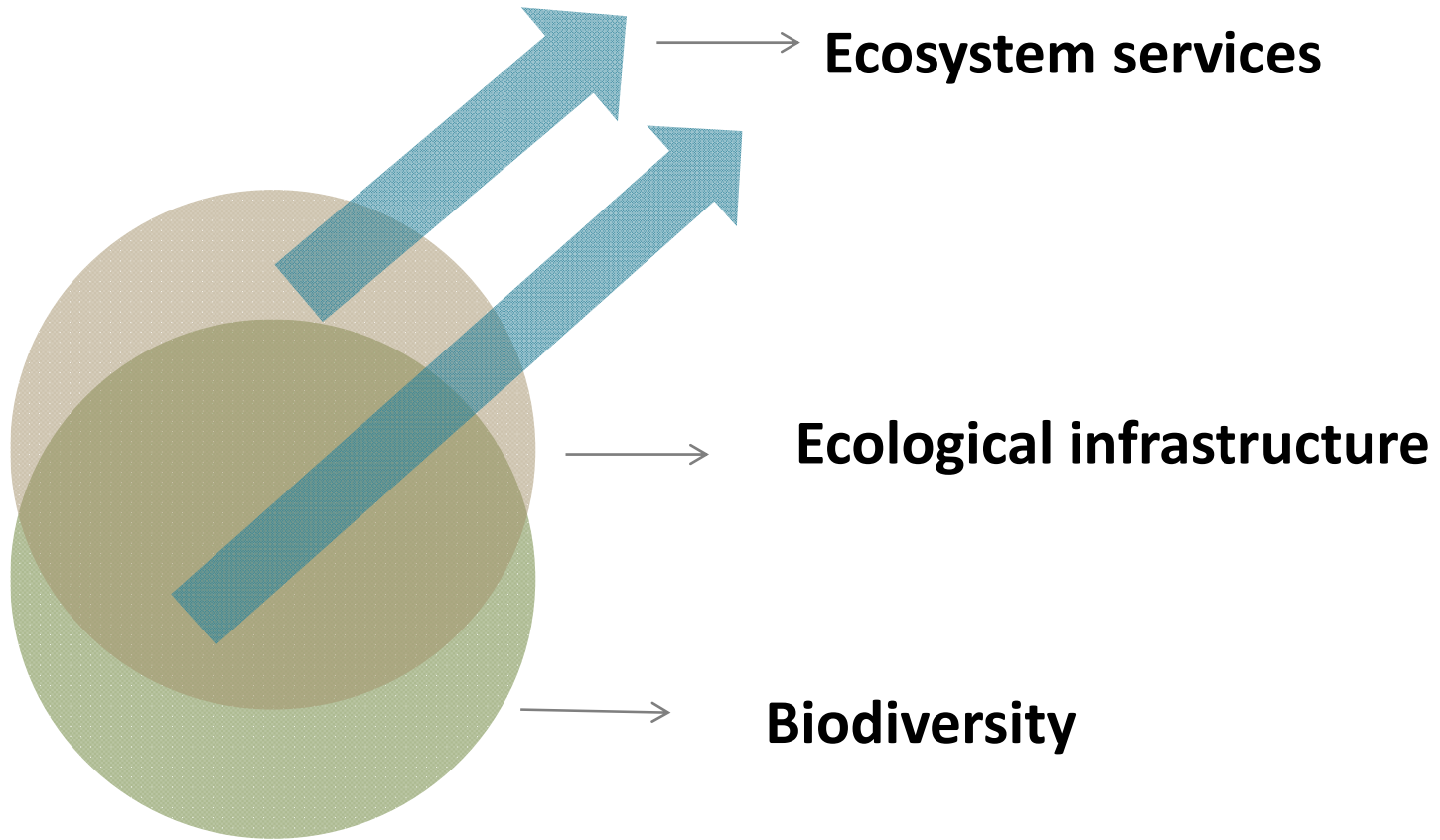
Ecological infrastructure is just as important as **built infrastructure** for providing vital services that underpin social and economic activity.

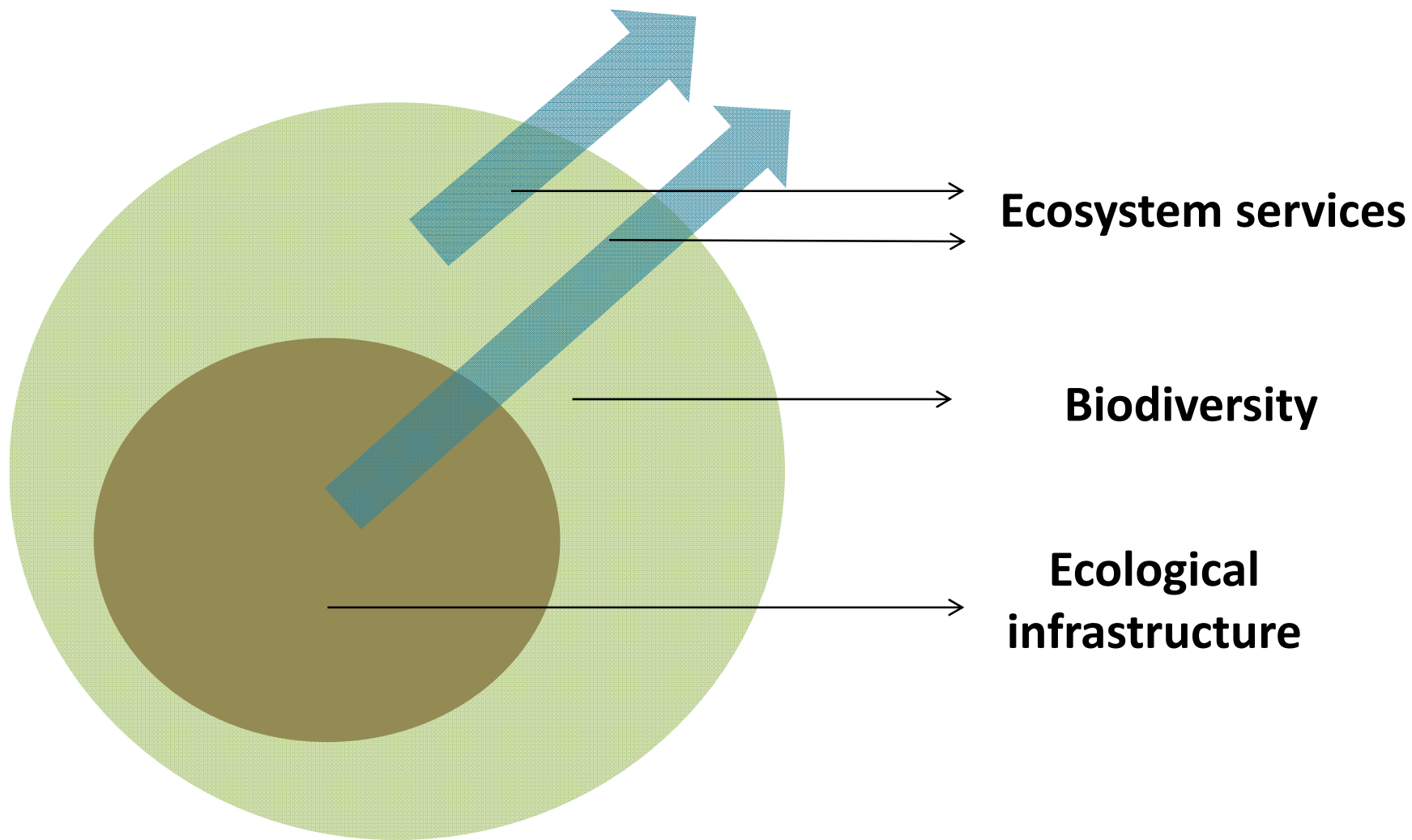


Ecosystem services

**Ecological
infrastructure**

Biodiversity





Ecosystem services

Biodiversity

**Ecological
infrastructure**

Challenges

- Need more primary science – ecology of ecosystem services and ecological infrastructure
- Be aware of ecosystem service trade-offs
- Simplification of complex systems in order to map or value them could lead to poor decision making

Valuing Ecosystem Services

- Communicating the *concept* of ES is sometimes enough – don't always need to value.
- Value ES: When the decision-maker is trying to make an economic decision
 - Land use trade-offs
 - INVESTING in ecological infrastructure
 - Motivate for incentives, remove disincentives
 - Motivate for increased resources (funding/jobs)
- Payments for ecosystem services (PES) is not the same as valuing ES

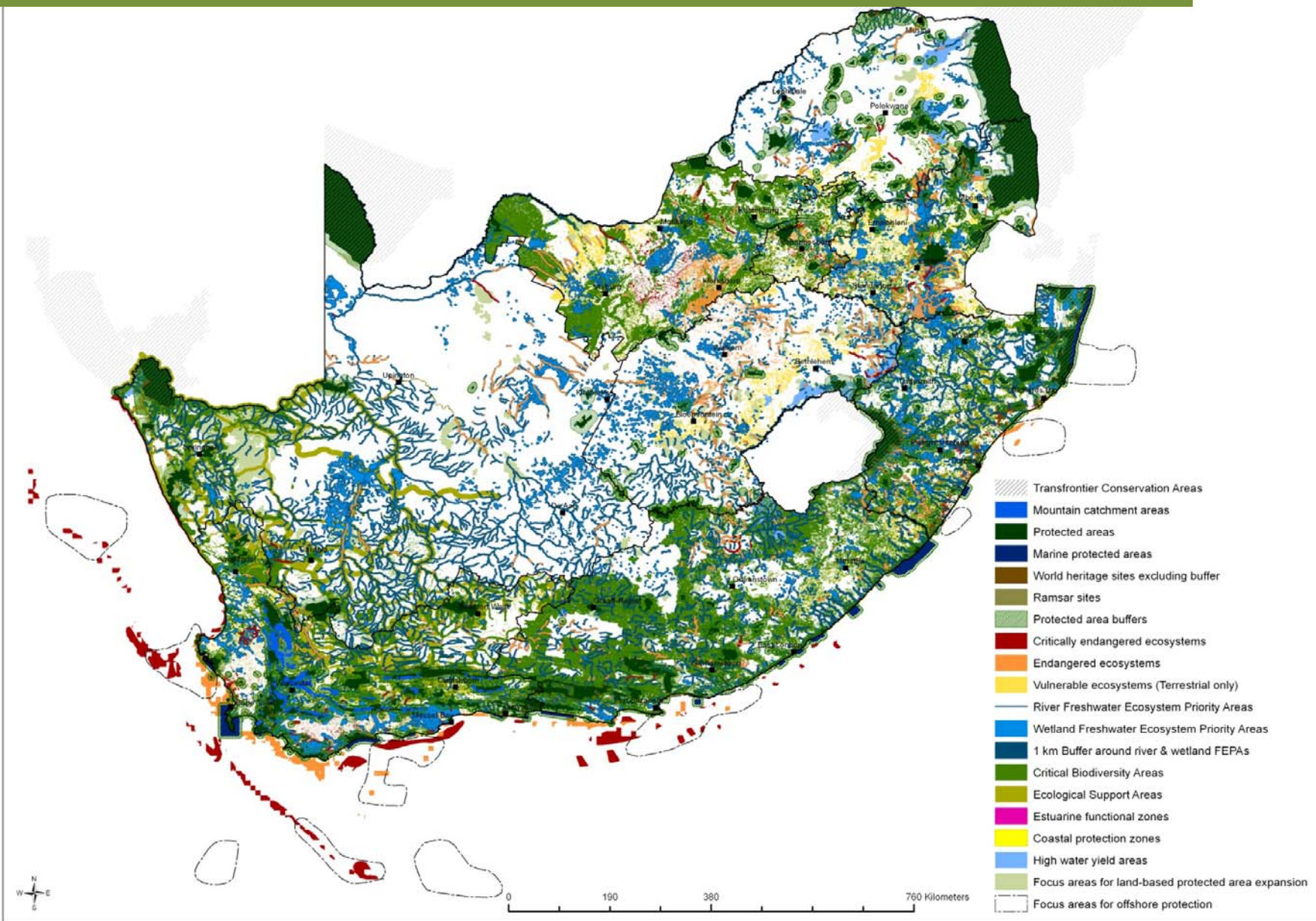
Some valuation challenges

- Some ecosystem services are easier to value than others – this shouldn't be an indicator of importance.
- the value is a function of not just the ecosystem service itself, but also proximity to consumer. How does this affect decision-making?
- Danger in messaging the value of bundled ES as the value of biodiversity

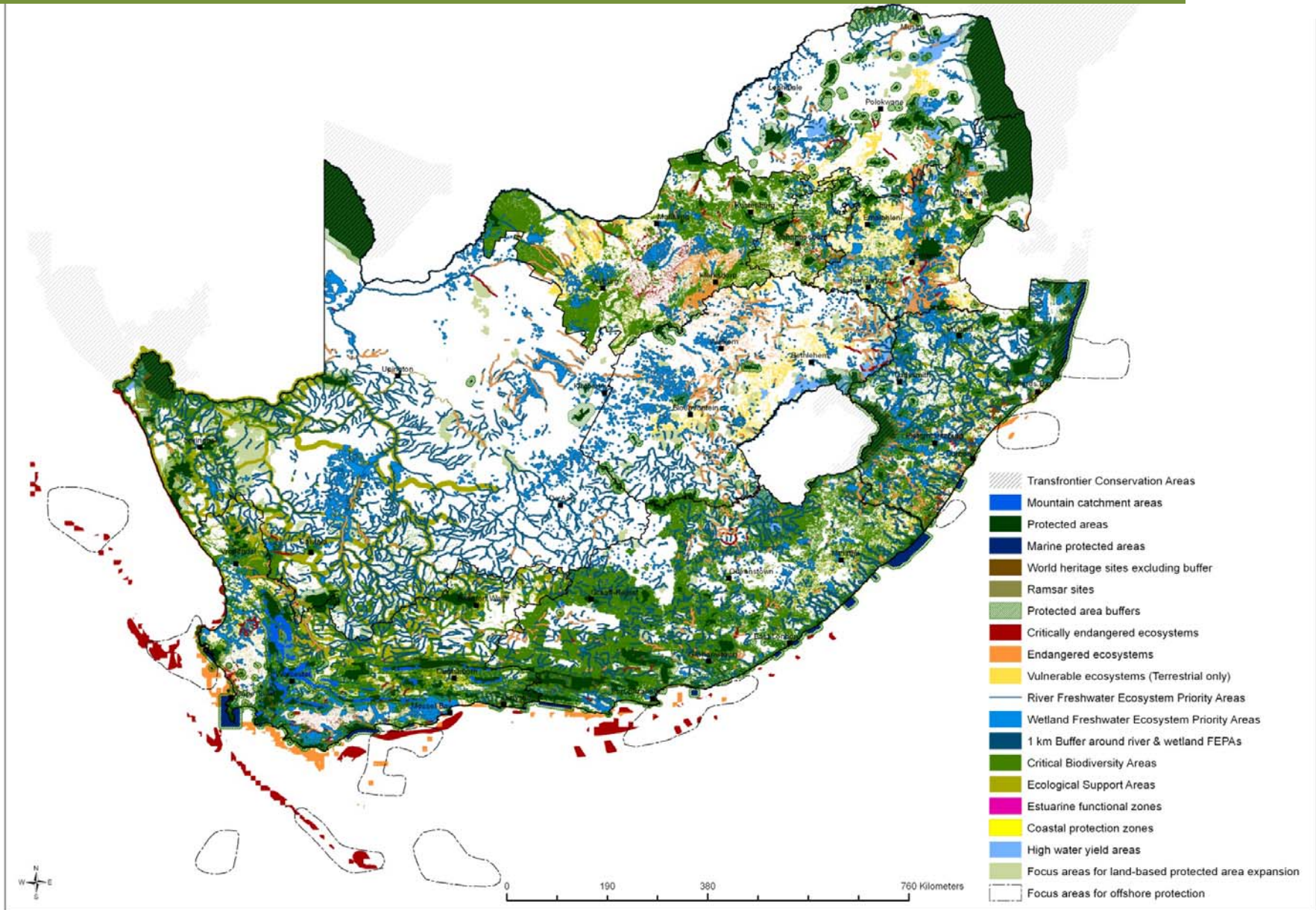
Mapping Ecological Infrastructure & Ecosystem Services

- Do we map ecosystem services (flow), or do we map ecological infrastructure (stock)?
- To what extent do the ecosystem services that we focus on come from our biodiversity priority areas? And how does ecological infrastructure underpin both?

Map of biodiversity priority areas



Is our map of ES and EI going to look the same?



Ecological Infrastructure and Ecosystem Services: Questions...

- What is the purpose of mapping ecological infrastructure and ecosystem services
- What are going to be the most important ecosystem services to understand in terms of value to society?
- What is the best way to communicate this?