



Millennium Ecosystem Assessment

Ecosystem Service Assessments

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What is an assessment?

A social process that translates and interprets scientific and other information for the use of decisionmakers

Typically undertaken by an interdisciplinary team, over a period of 1-2 years, including two reviews (expert and stakeholder), with a clear focus and authorising environment

Ecosystem Services

‘The benefits that people derive from nature’

The MA classification:

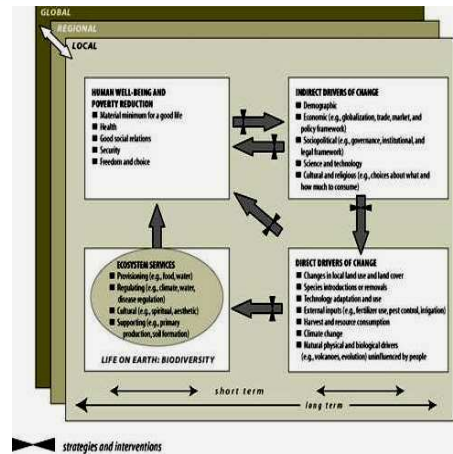
Provisioning: (=‘goods’) food, water, fibre, medicine

Supporting: nutrient, photosynthesis, pollination

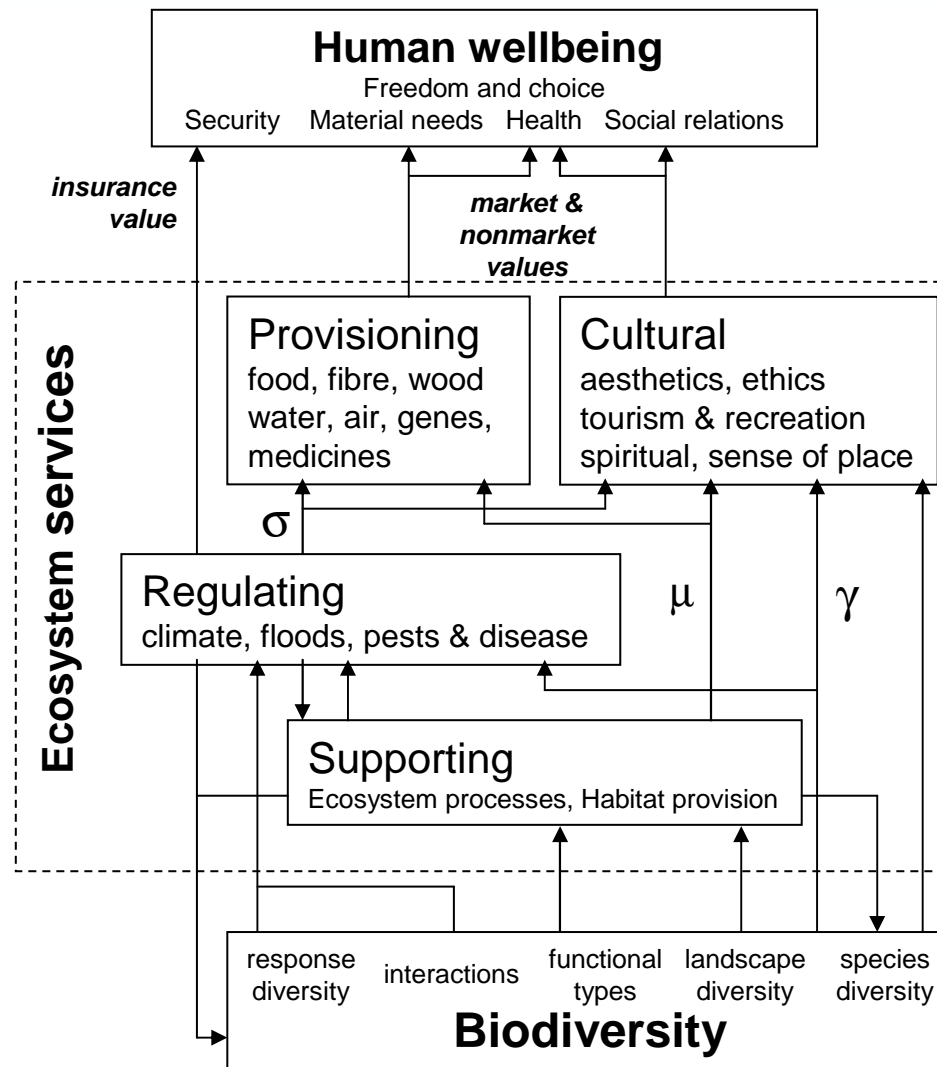
Regulating: climate, flood regulation

Cultural: recreation, aesthetic, spritual, educational

The importance of a conceptual model



Where does biodiversity fit in?



To value or not to value?

Intrinsic value: important to many people, but by definition is not amenable to valuation

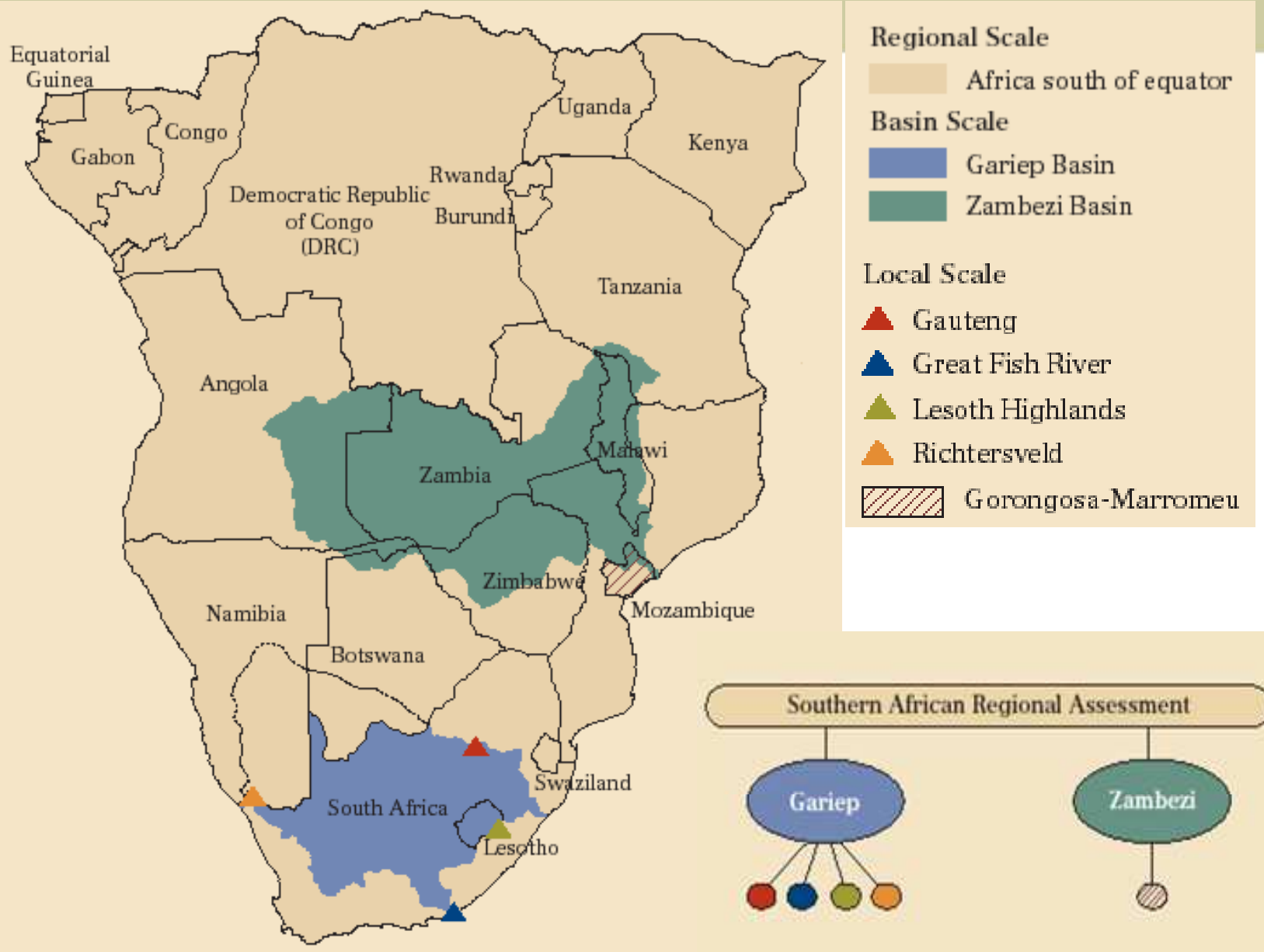
Extrinsic value: direct and indirect, consumptive and non consumptive

Valuation can give you a lot of traction with policymakers

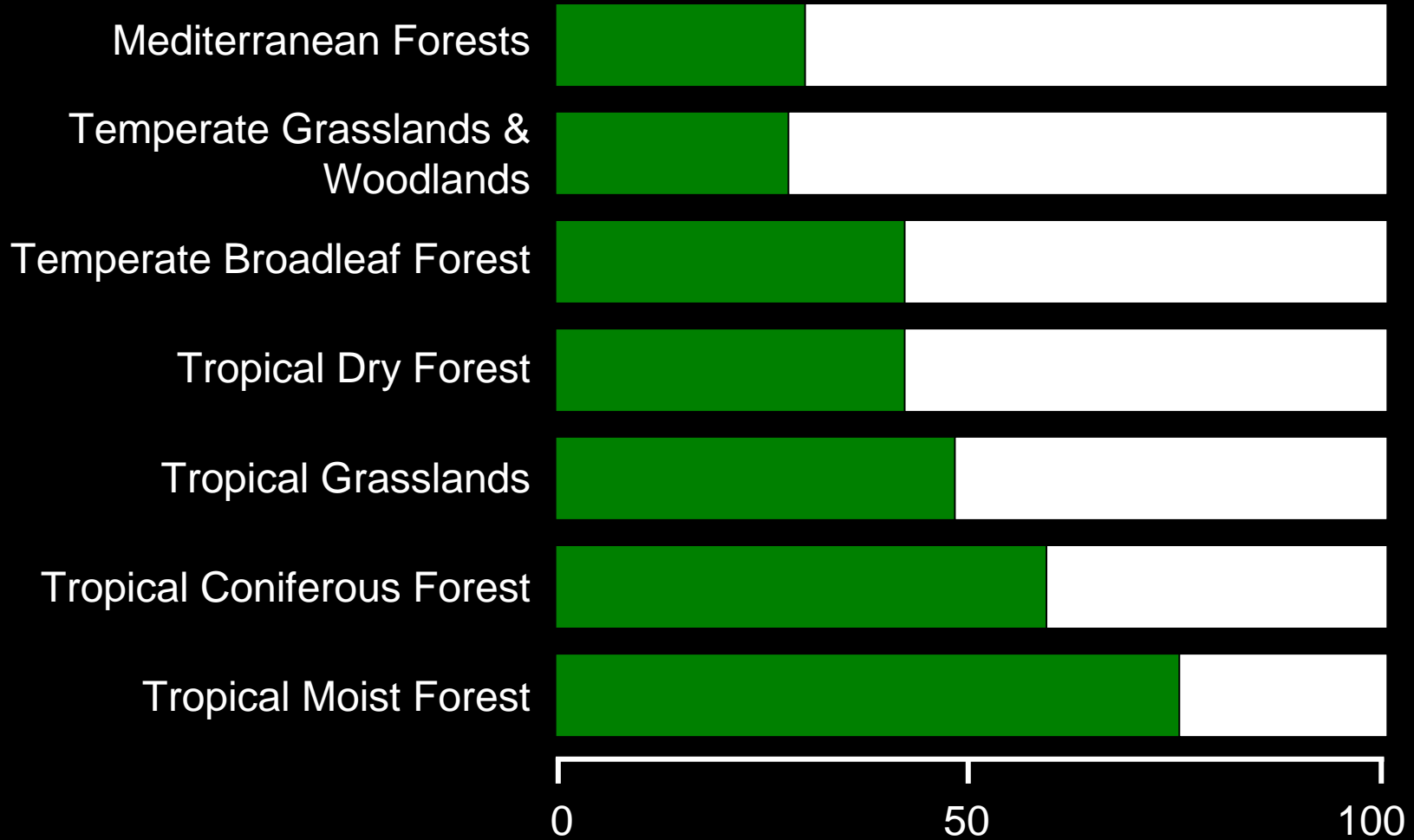
But don't do it if you are not going to do it well!

The key step is working out the causal path: a job for ecologists, not economists

SafMA: scope and organization



Habitat Loss to 1990

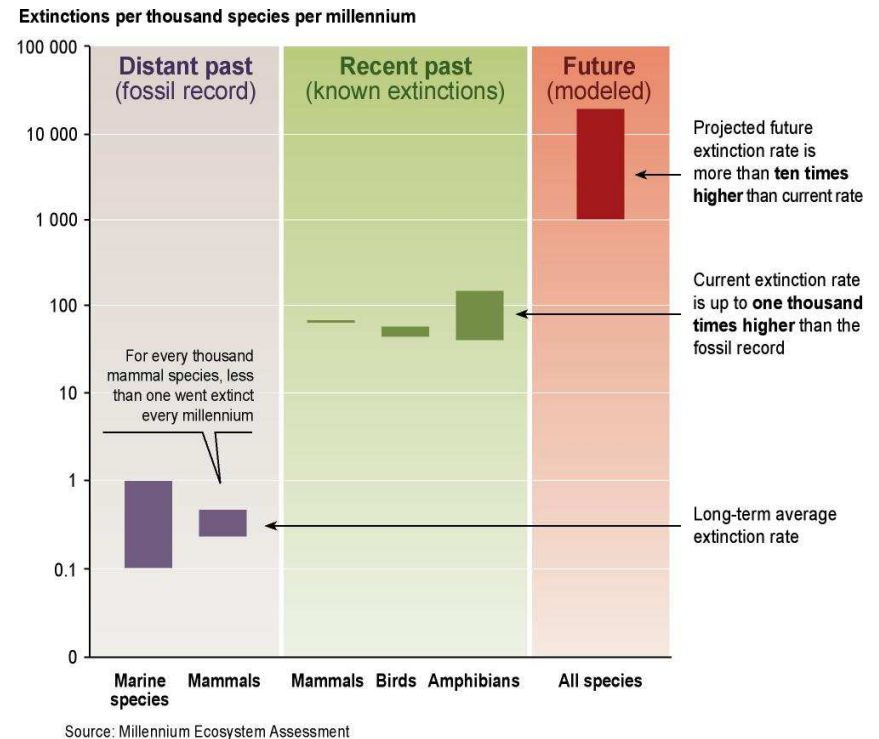


Source: Millennium Ecosystem Assessment

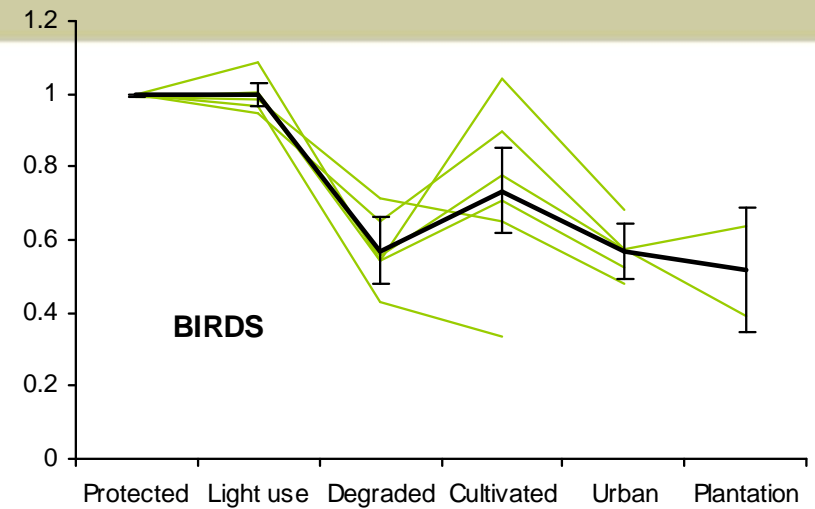
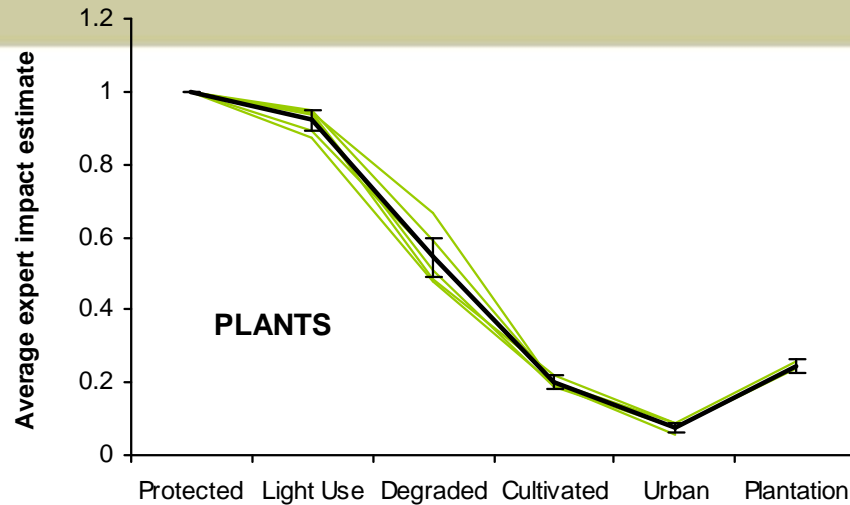
Percent of habitat (biome) remaining

Decline and loss of biodiversity

- The great majority of plant and vertebrate species are declining in distribution, abundance or both
- Humans have increased the species extinction rate by 50 to 1,000 times the rates typical in the fossil record
- 10–30% of mammal, bird, and amphibian species are currently threatened with extinction
- Diversity of genes and populations, and extent of near-natural ecosystems is currently declining in most places in the world



Biodiversity Intactness Index



	Plants	Mammals	Birds	Reptiles	Amphibia	ALL TAXA
Forest	0.75	0.75	0.92	0.86	0.85	0.78
Savanna	0.86	0.73	0.96	0.89	0.96	0.87
Grassland	0.72	0.55	0.90	0.76	0.81	0.74
Shrubland	0.86	0.72	1.06	0.93	1.27	0.89
Fynbos	0.75	0.78	0.91	0.77	0.79	0.76
Wetland	0.91	0.83	0.94	0.92	0.95	0.91
All Biomes	0.82	0.71	0.96	0.88	0.95	0.84

Nature-based tourism

**Game-viewing, hiking, hunting, river rafting,
beach holidays...**

**Currently 9% of
SADC's GDP**

Growing at 5-15% / year

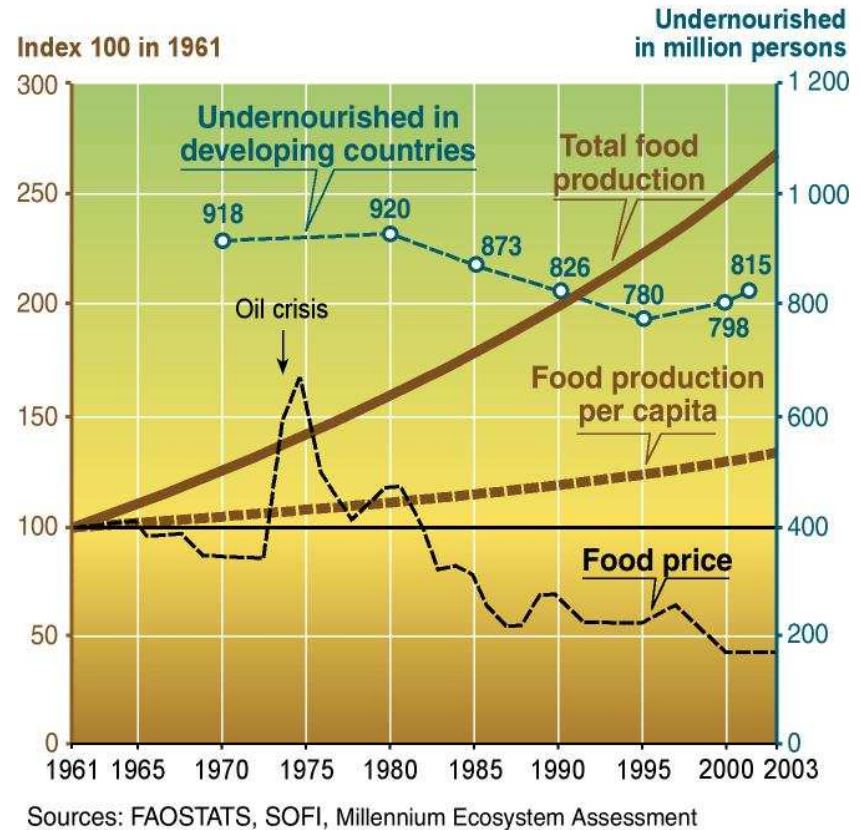
Large potential remains

Shifting policy emphasis



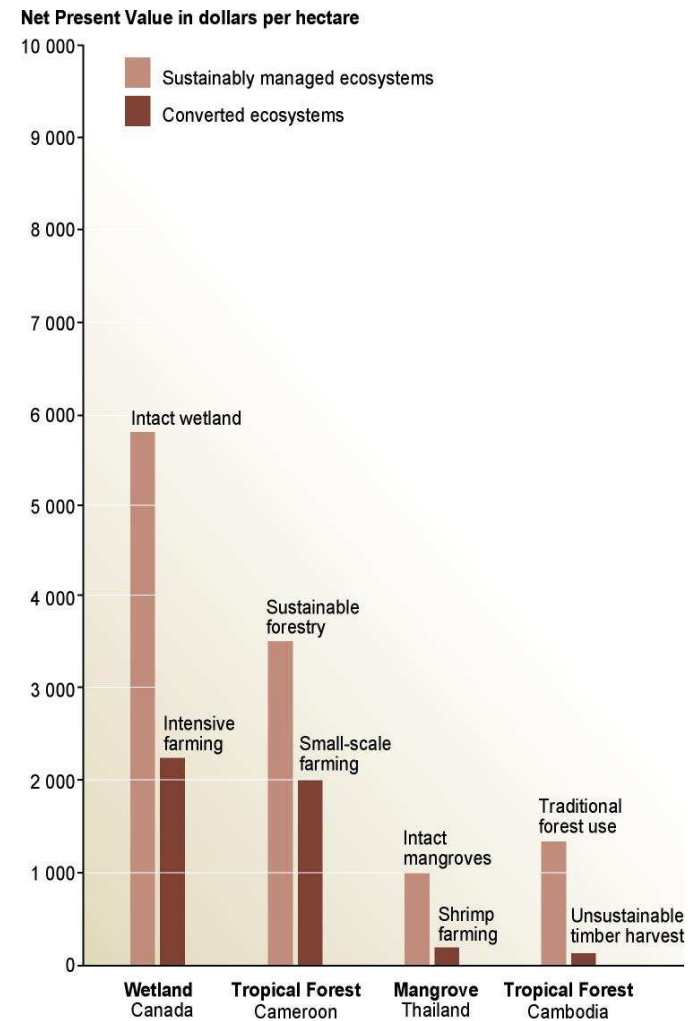
Changes to ecosystems have provided substantial benefits

- Food production has more than doubled since 1960
- Food production per capita has grown
- Food price has fallen
- water use has doubled
- wood harvests for pulp and paper production tripled
- timber production increased by more than half



Ecosystem transformation is often a net economic loss to society

- The total economic value associated with managing ecosystems more sustainably is often higher than the value associated with conversion
- Conversion may still occur because private economic benefits are often greater for the converted system



Source: Millennium Ecosystem Assessment

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Value
(per hectare)

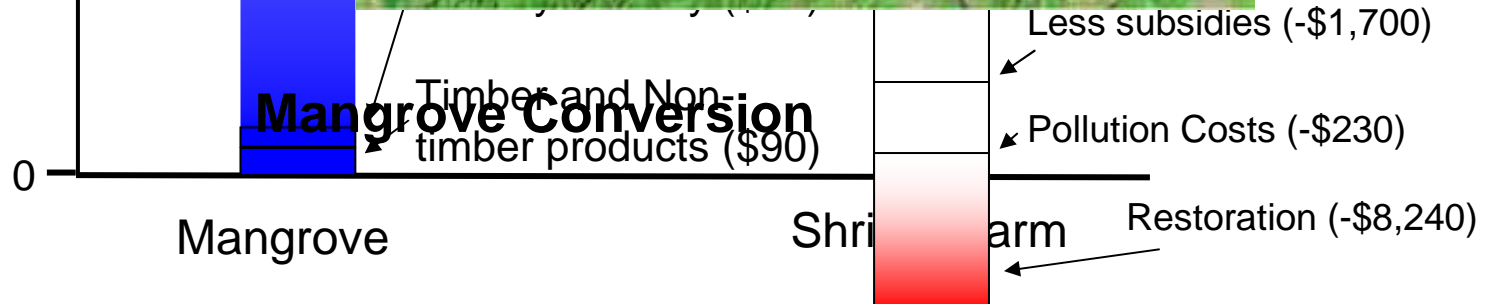
\$4000



Private Market Present Value per hectare **1997**

Mangrove: \$9,100 to \$3,600

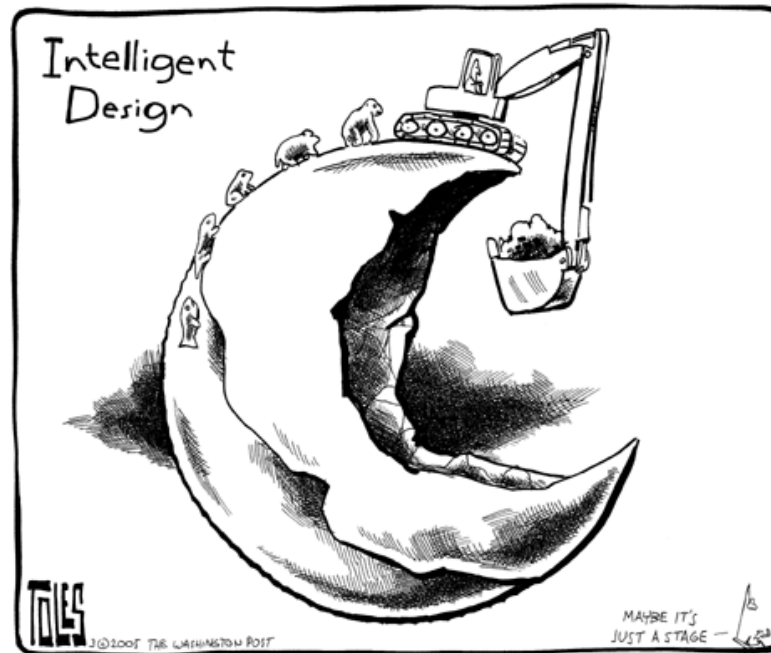
Shrimp Farm: \$20,000 to \$200



More about the Millennium Assessment

www.maweb.org

free downloadable copies of all 5 of the synthesis reports
you can also download the southern African MA from this site



Washington Post, March 30, 2005