HOW DOES BIODIVERSITY MATTER TO DIFFERENT SOCIAL ACTORS?

Sandra Díaz IMBIV (CONICET-UNC) DiverSus Collaborative Research Network (2015) InterAmerican Institute for Global Change Research











GLOBAL CHANGE DRIVERS

- . Climate
- . Biogeochemical cycles
- . Land use
- . Biotic exchanges (e.g. invasions)

BIODIVERSITY WHETHER and HOW?



ECOSYSTEM PROCESSES

- . Primary & secondary productivity
- . Nutrient and carbon cycling
- . Evapotranspiration
- . Dynamic stability
- . Pollination and dispersal



Adapted from: Duraiappah 2005 MA Díaz et al. 2006 PLoS Biol.

HUMAN WELL-BEING

- . Material minimum for a good life
- . Health
- . Shelter and safety
- . Good social relations
- . Freedom of choice

ECOSYSTEM SERVICES

- . Food, fibre, fuel
- . Genetic & evolutionary resources
- . Medicines
- . Education and recreation
- . Sense of place
- . Religious & spiritual values
- . Habitat provision
- . Soil fertility
- . Water quantity & quality regulation
- . Climate regulation
- . Disease & pest regulation
- . Erosion control

Ecosystem services that depend on the characteristics of the

ABUNDANT species

Climate regulation, carbon storage Water quality & quantity

Fodder provision



symbolic value

Ecosystem services that depend on the VARIETY of trait values



Food security

Ecosystem services that depend on the presence of certain trait values or species

Aesthetic value Nature-based tourism

Our main contribution

A conceptual framework and practical tools for impacking and measuring functional diversity and assessing its value to different sectors of society.

Díaz et al. 2007, 2011 PNAS



The questions

- How different social actors, in highly heterogeneous societies, perceive and value different ecosystem services?
- How do they associate these services with different ecosystem types?
- How are these services associated to ecosystem processes and biodiversity components from the point of view of ecological science?







Ecologists and social scientists discuss conceptual and methodological issues

Discussing ecosystem types in the field





Discussing ecological and social concepts in the field



Measuring ecosystem properties and functional traits in different ecosystems



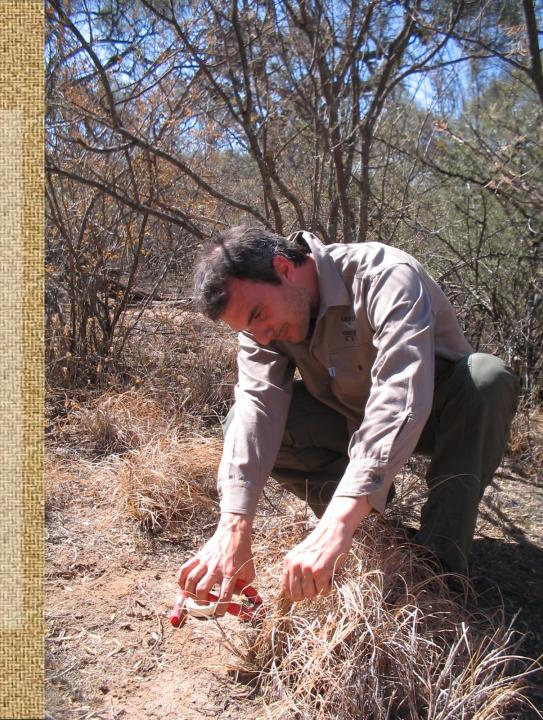




Larrea shrubland



Knowing that not all components of biodiversity are equally important for different ecosystem benefits has direct implications in designing biodiversity monitoring strategies.



Equally fundamental is to understand what aspects of biodiversity are useful for different social actors with different –and sometimes conflicting- views on ecosystem benefits and different political power.

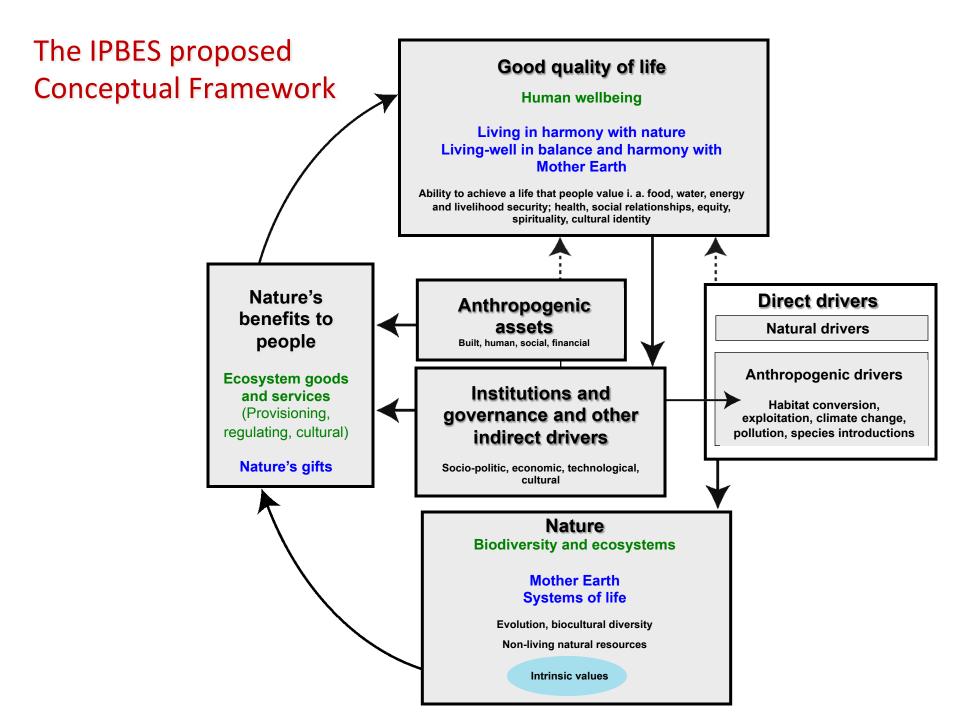


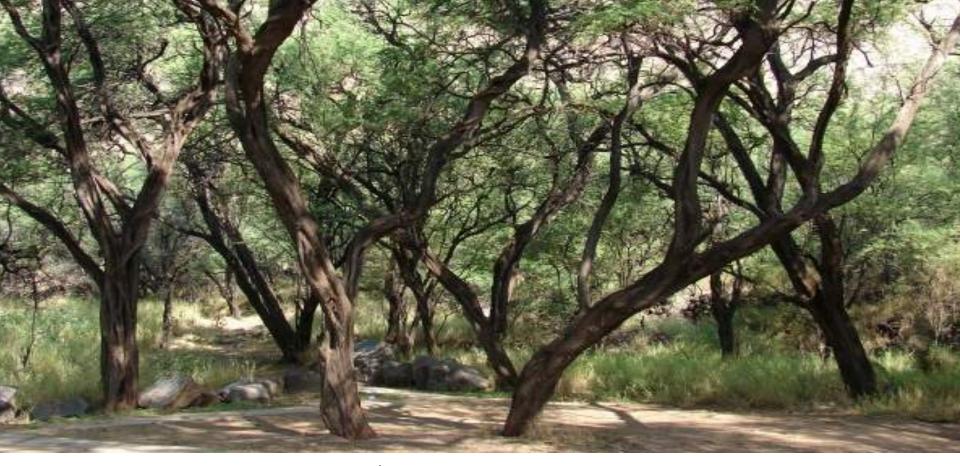


Interdisciplinary approaches are necessary but not enough to protect, and sustainably manage, biodiversity and its social benefits.

Ecosystem **governance** is an indispensable element in this equation.











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