ESP 11 World Conference

"From global to local ecosystem services: pathways to Nature-based Solutions inspired from Down Under"

23-27 June 2025 | Darwin, Australia

SESSION DESCRIPTION

ID: T7c

Updating estimates of the global value of ecosystem services for the 2020's

Hosts:

	Name	Organisation	E-mail
Host:	Robert Costanza	University College London	rcostanz@gmail.com

Abstract:

The first estimate of the global value of ecosystem services was Costanza et al. (1997). It was based on a meta-analysis of over 200 studies of the value of 17 ecosystem services and relatively crude estimates of 16 global biome areas, assuming a constant unit value for each biome. This admittedly crude underestimate was still significantly larger than global GDP at the time and it kicked off an explosion of research, policy, and applications. A subsequent study (Costanza et al. 2014) updated the 1997 study using improved and updated biome area estimates and improved unit values based on several thousand new studies compiled in the Ecosystem Services Valuation Database (ESVD), but still assuming a constant unit value per biome. These are still the only global estimates of the value of ecosystem services.

This session will discuss improved and updated global estimates. It will discuss using value functions that adjust the values for each pixel of each biome based on spatially explicit variables that have been shown to explain variations in value estimates among the now several hundred studies that have been done for each biome. This produces a much more complex map of global ecosystem services that is more useful for policy analysis at the site, regional, or national scale since it considers local variations in ecosystem conditions, local human population, infrastructure, and other variables. We will discuss how new and better global land use maps and other spatially explicit variables contribute to the ability to estimate the value functions for every pixel. We will also compare and discuss the global initial estimate derived using this improved method with the simple constant average unit value method. Finally, we will discuss the possibilities for employing these new methods for policy.

Goals and objectives of the session:

Present and discuss new data and methods to update estimates of the global value of ecosystem services.

Planned output / Deliverables:

Journal article(s) for high impact journals. We have already had some discussions with the editors at Nature and they are expecting a submission from us on this topic

Session format:

Standard : 1.5 hour session. 15 min per speaker plus 15 min Q&A at the end. Tentative speakers include:

Robert Costanza: Introduction and overview

Luke Brander: Value functions using the ESVD and global maps

Sharolyn Anderson: Mapping land use and other variables

Paul Sutton: Ecosystem condition estimates

Ida Kubiszewski: Initial results and uses for policy including the SEEA

Voluntary contributions accepted:

No, I only want to include abstracts from my own invited speakers

Related to ESP Working Group:

TWG 7 – Economic & Monetary valuation