Ecosystem services are the condition and processes through which natural ecosystems, and the species that make them up, sustain and fulfill human life. They maintain biodiversity and the production of ecosystem goods, such as food, forage timber, biomass fuels, natural fiber, and many pharmaceuticals, industrial products, and their precursors. The harvest of and trade of these goods represent an important and familiar part of human economy. In addition to the production of goods, ecosystem services are the actual life-support functions, such as cleaning, recycling, and renewal, and they confer many intangible aesthetic and cultural benefits as well (MA 2005).

One way to appreciate the nature and value of ecosystem services is to imagine trying to set up a happy, day-to-day life on the moon: John Holdren (Barack Obama's top science adviser) originally suggested this idea. A question “which of earth’s millions of species do you need to take with you?” will soon emerge from this imagination. You may first choose from among all species exploited directly for food, drink, cloth, fiber, timber, pharmaceuticals, industrial products (such as waxes, rubber, and oils), and so on. Even being selective, the list could amount to hundreds or even several thousand species. The space ship would be filling up before you’d even begun adding the species crucial to supporting those at the top of your list. Rather than listing species directly, you would have to list the life-support functions required by your lunar colony. Then you could guess at the types and numbers of species required to perform each. However, this is no simple task.

In addition to listing and evaluation of ecosystem services, I would like to address a slightly different issue from an ecological viewpoint. Historically, we had been classing species into beneficial and pest species (or high and low yielding crops) and trying to eradicate (or abandon) the latter class. Consequently, we lost diversity of species as well as interspecific interactions (prey-predator, host-disease, competition, and so on), and at the same time, we decreased resistance characteristic to the environmental change. I will present some examples, and stress the importance of interspecific interactions in the concept of biodiversity.