

Human beings benefit from a wide range of goods and services from the natural environment that are collectively known as ecosystem services. However, rapid natural habitat loss, overexploitation and climate change is causing accelerating losses of populations and species, with largely unknown consequences on ecosystem functioning and the sustainable provision of ecosystem services. It is crucial, therefore, to develop a suite of indicators of the health and status of ecosystems, to monitor and quantify services delivery and to facilitate policy responses to stop and reverse negative trends. An effective framework to facilitate the development of suitable indicators is by using the SMART approach, which defines five criteria that could be applied to set monitoring and management goals, which are Specific, Measurable, Achievable, Realistic and Time-sensitive. Remote sensing provides a useful data source that can monitor ecosystems over multiple spatial and temporal scales. Although the development and application of landscape indicators (vegetation indices, for example) derived from remote sensing data are comparatively advanced, it is acknowledged that a number of organisms and ecosystem processes are not detectable by remote sensing. This paper explores several approaches to overcome this limitation, by examining the strong affinity of species with dominant habitat structures and through the coupling of remote sensing and ecosystem process models using examples drawn from a number of important ecosystems.