

Only the text in the *green italics* represents the consensus views of the SAB Committee on Valuing the Protection of Ecological Systems and Services and has been approved by the chartered SAB. All other text was provided by individual committee members and is offered to extend and elaborate the very brief descriptions provided in chapter 4 of the SAB Report, *Valuing the Protection of Ecological Systems and Service* and to encourage further deliberation within EPA and the broader scientific community about how to meet the need for an integrated and expanded approach for valuing the protection of ecological systems and services.

## **Biophysical ranking methods**

Excerpt from draft SAB Committee report, *Valuing the Protection of Ecological Systems and Services*: *In some contexts, policy makers or analysts are interested in values based on quantification of biophysical indicators. Possible indicators include measures of biodiversity, biomass production, carbon sequestration, or energy and materials use. Quantification of ecological changes in biophysical terms allows these changes to be ranked based on individual or aggregate indicators for use in evaluating policy options based on biophysical criteria previously determined to be relevant to human/social well-being.*

*Use of a biophysical ranking does not explicitly incorporate human preferences. Rather, it reflects either a non-anthropocentric theory of value (based, for example, on energy flows) or a presumption that the indicators provide a proxy for human value or social preference. This latter presumption is predicated on the belief that the healthy functioning and sustainability of ecosystems is fundamentally important to the well-being of human societies and all living things, and that the contributions to human well-being of any change in ecosystems can be assessed in terms of the calculated effects on ecosystems. Opinion is mixed – among both committee members and the broader scholarly community – on whether it is an asset or a drawback that these ranking methods are not tied directly to human preferences.*