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Type	oral presentation
Category	Benefits of Stream Restoration
Title	<i>Measuring the Natural, Biological Heritage Benefits from Stream and Other Ecosystem Restoration</i>
Abstract	<p>A new concept of nonmonetary benefit is presented for quantitatively indicating the value returned from restoration of natural biological heritage to a secure status in streams and other ecosystems. The new metric, the Biodiversity Security Index (BSI), was developed specifically for the needs of the ecosystem restoration program of the U. S. Army Corps of Engineers (USACE), but may have applications elsewhere. Sustaining natural heritage is central to the goals of the National Environmental Policy Act, the Endangered Species Act (ESA) and other legislation, and is intrinsic to the concepts of sustainable development and environmental sustainability promoted by the United Nations. While the importance of natural heritage is well recognized, and freshwater biological heritage in particular is in rapid decline, quantitative measurement of its relative value is not well developed. The value of many forms of natural service demand is measurable either directly or indirectly in monetary terms, but heritage value can be measured monetarily only by using controversial techniques unacceptable to many, including the USACE. The BSI indicates the relative scarcity of ecosystem species components with respect to a desirable sustainable state of species as expressed in the goals of the ESA and other law. The primary variables in the BSI are species scarcity, species distinctiveness, and the residual risks associated with not realizing the desired return on investment. BSI calibration relies on species conservation and taxonomic data maintained by NatureServe and now widely used by conservation organizations and agencies. The BSI appears to provide a universally applicable indicator of relative benefit from restoration of natural biological heritage to a secure status. The metric has widespread applicability for indicating the relative value of restoration investments in the security of unique biological heritage. The BSI needs to be more fully vetted for conceptual integrity and tested in practical applications.</p>