Earth stewardship: An agenda to reorient the trajectory of human interactions with the biosphere

There is an urgent need to reorient the relationship of humanity with the biosphere of the planet, requiring multiple transformations at local to global scales. Design principles for Earth Stewardship build off those developed for managing the commons. These include fostering a sense of connection to places that are valued, effective engagement of all key stakeholders, near-zero discounting of long-term benefits, developing consensus on sustainability goals, monitoring to assess progress toward these goals, opportunities to renegotiate sustainability goals to allow adaptation to changing conditions, and emergence of facilitators or leaders that are skilled in conflict resolution and maintain focus on sustainability goals. Natural and social scientists can foster Earth Stewardship at local to global scales through education and outreach that fosters appreciation for and commitment to local and global places, monitoring threats to and progress toward sustainability, improved understanding of threshold behavior of social-ecological systems, and leadership in defining and pursuing sustainability goals.