Energy Citations Database
ADOPT-A-DOC?

Ecological function and resilience: Neglected criteria for environmental impact assessment and ecological risk analysis

Description/Abstract

The importance of establishing methods for determining ecological function and resilience transcends scientific interest; these methods are important to sustained societal use of ecosystems and long-term productivity. Essential services that ecosystems provide to human society include water purification, oxygen production, carbon storage, climate regulation, and production of food, wood, and medicinal drugs. Although man is dependent upon these services, human understanding of the dynamics of ecosystem function is limited. Man can detect gross impairment of ecosystem function or resilience after the fact. However, protecting ecosystem health necessitates detecting adverse trends in ecological function, rather than reacting when the system collapses. The information to date is inadequate for predicting subtle changes or incremental trends. Once ecosystems are damaged and therefore providing diminished services, it is important to determine when they will be restored to an approximation of their predisturbance condition. For those ecosystems unlikely to recover on their own, management techniques may enhance recovery processes. Information about response of ecosystem function to human actions and relative resilience of alternative ecosystems can facilitate decision-making under the National Environmental Policy Act (NEPA).

Authors: Cairns, J. Jr.; Niederlehner, B.R. (Virginia Polytechnic Inst. and State Univ., Blacksburg, VA (United States). Univ. Center for Environmental and Hazardous Materials Studies)

Publication Date: 1993 Jan 01
OSTI Identifier: 6479477
Resource Type: Journal Article
Resource Relation: Journal Name: Environmental Professional; (United States); Journal Volume: 15:1
Country of Publication: United States
Language: English
Format: Size: Pages: 116-124
Other Number(s): Journal ID: ISSN 0191-5398; CODEN: EPROD9
Subject: 29 ENERGY PLANNING, POLICY AND ECONOMY; ECOSYSTEMS; RESPONSE FUNCTIONS; US NATIONAL ENVIRONMENTAL POLICY ACT; DECISION MAKING; ECOLOGY; ENVIRONMENTAL IMPACTS; PLANNING; RISK ASSESSMENT; FUNCTIONS; LAWS
Update Date: 2009 Dec 17