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Abstract

Keywords

1. Introduction



2. An inventory of Swedish natural capital indicators

- 2.1. The Ministry of the Environment
- 2.2. The Environmental Advisory Council to the Swedish Government
- 2.3. Statistics Sweden
- 2.4. The Swedish Environmental Protection Agency
- 2.5. The Swedish National Institute of Economic Research
- 2.6. Protected areas

Table 1

3. The Swedish inventory in context

4. Understanding the criticality of functioning ecosystems

4.1. Ecosystems as complex dynamic systems

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## Abstract

Complex dynamic ecosystems are important natural capital assets. We investigate how Swedish national policy has approached these assets in its work on environmental indicators. In particular, we are interested in whether or not the indicators address ecosystem performance. We discuss our inventory of Swedish indicators in the context of ecosystem services, such as source and sink functions, and the capacity of ecosystems to sustain these functions for human well-being. We find that effective indicators have been developed to reflect energy and material flows within society and how human activities put pressure on the environment. The part of natural capital that concerns living systems is reflected in several of the Swedish indicators in a progressive fashion, but indicators that capture the dynamic capacity of ecosystems in sustaining the flow of source and sink functions need to be further developed. We provide examples of recent developments that have started to address such indicators in the context of ecosystem resilience and environmental change, and discuss directions for their further development. We stress the importance of monitoring ecosystem resilience and performance to avoid undesirable state shifts and building ecological knowledge and understanding of this capacity into environmental indicators and their associated management institutions.

## Keywords

Critical natural capital; Environmental indicators; Ecosystem performance; Resilience; Thresholds; Source; Sink; Ecosystem functions

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