Risk to Ecosystem Services in the Context of Environmental Management Decisions
A Meritless Proposition

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Ecological Goods and Services

- Commodities
  - Timber
  - Fish
  - ...

- Functions
  - Water filtration/purification by wetlands
  - Flood mitigation by vegetation cover
  - ...

- Esoterics
  - Existence Value
  - Spirituality
  - ...
Ecology: The Science versus the Myth

(Kapustka and Landis 1998. HERA 4:829-838)

- Ecological systems are highly dimensional and dynamic collections of organisms and abiotic structures that interact with a multitude of potential responses (modulated by feedback)

- Ecological systems are abstract. No one has ever seen one; they are merely perceived.
Anamorphic Imagery (1)

Twisted Cube  ©2001; Matheau Haemaker
Anamorphic Imagery (2)

Cube to Pyramid ©2001; Guido Moretti
Anamorphic Imagery (3)

Duet ©2001; Shigeo Fukuda
Inherent Restrictions of Humans Interacting with Ecological Systems

1. Fluidity—
   - Abstract dynamic perceptions changing over time

2. Wicked Problems—
   - High potential for intractable competing interests with no correct path forward

3. Chaos—
   - Interconnectedness of ecological components with multiple reinforcing and damping feedback loops precludes useful prediction of future conditions