

Understanding sustainability as a
landscape goal and process:
A framework for economic
modeling and analysis

John Fedkiw & Richard J. Brazee

A pathways approach to sustainability

John Fedkiw

Forestry is more than a job or profession

It is a part of life on Earth,

A part of both natural and human life

Whose goal is sustainability.

But what is sustainability for humanity,

For people on the land and forestry?

That is the basic question.

An answer explains the goal and process

For our life on Earth and its supporting environment,

And a framework of understanding

For sustaining forested landscapes

John Fedkiw

- Unable to make the trip
- Worked for the U.S. Forest Service since 1959 (through retirement in 1986)
- Prior to 1959 was at Syracuse University
- Applied forestry topics

Research Questions

- How to achieve sustainability in an open or democratic society?

Answer: A Pathways Approach.

- What is the empirical support of a pathways approach to sustainability?

Sustainability

“We clearly aspire to sustainability...The concept of sustainability remains amorphous...Like the search for the Holy Grail, the prize seems elusive but the quest is essential. Science and resource managers have defined criteria and indicators to measure, but have not identified standards or guidelines for assessing the status of sustainability and shaping its course or direction. As an anthropocentric abstraction sustainability raises a question: what does it mean in concrete terms to people? For resource users, managers and analysts it raises the question: what constitutes sustainability in concrete terms on the land?”

Definitions of Sustainability--UN

- “Development that meets the needs of present generations without compromising the ability of future generations to meet their own needs”
- Implies a goal but does not identify in concrete terms its dimensions or the course to follow to a sustainable future.

Pathways Approach

- Metaphor
- Path to the future, is also a path in the past
- Identifies sustainability as an aggregate abstraction for 3 social motivations:
 - Survival
 - Acceptable or better quality of life
 - A supporting environment for future generations

Figure 1. Forest Management Pathway To Sustainable Forests: Pathway Drivers

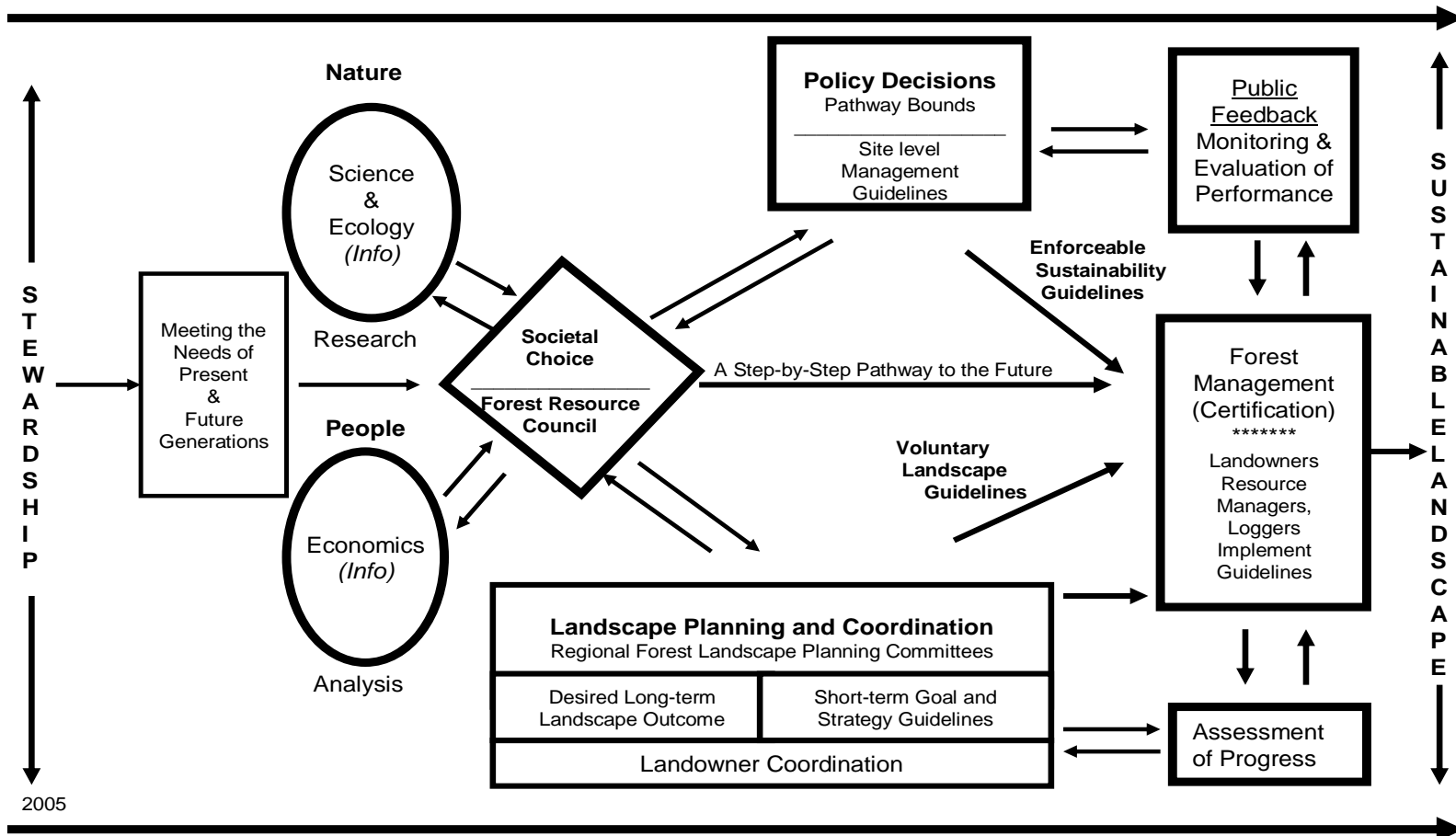
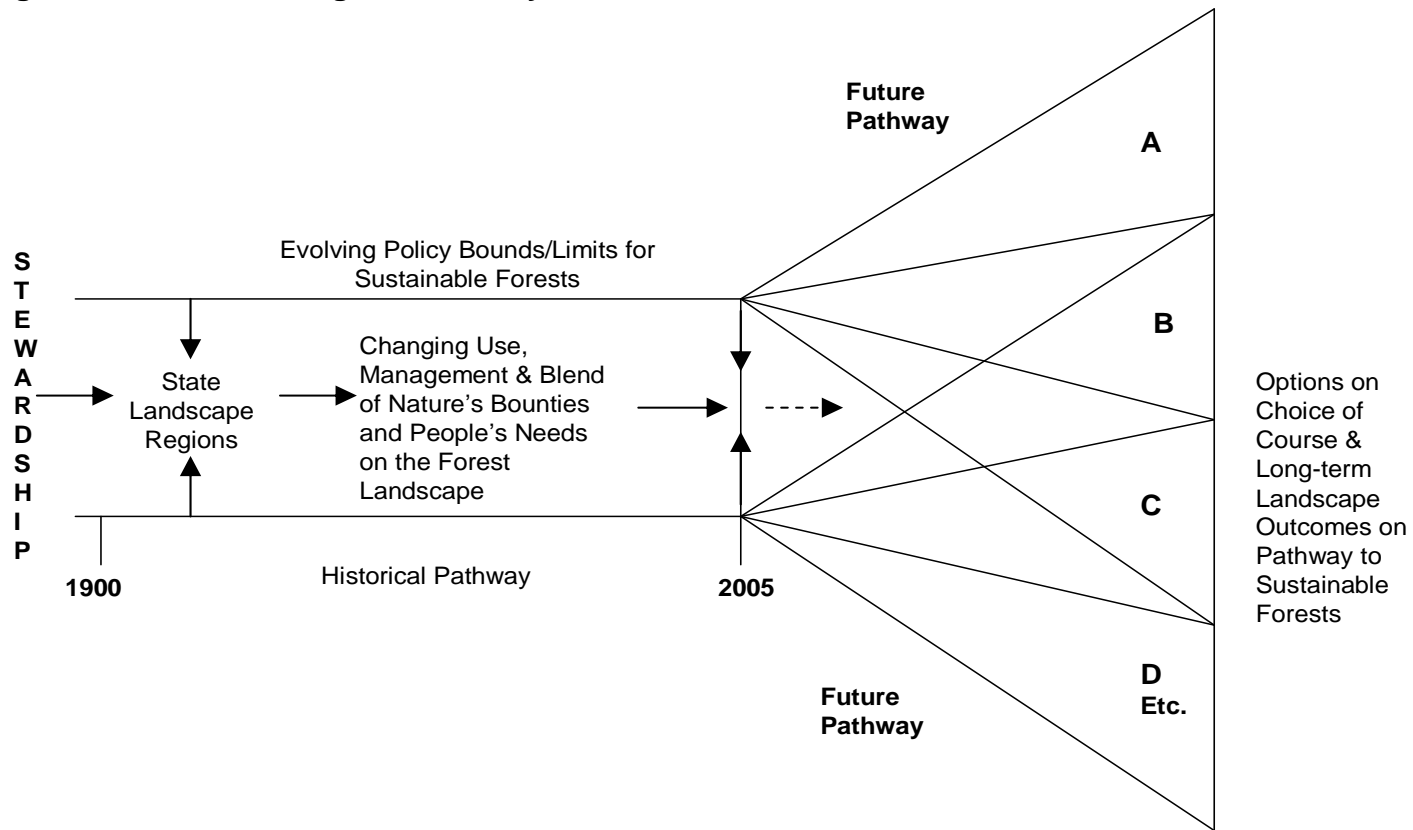


Figure 2. Illustrative Diagram: Pathway to Sustainable Forest Resources



Pathways Approach

- Blends nature's bounties & people's needs
- Sustainability is a dynamic, holistic societal goal and the process of broad landscape proportions
- Sustainable blend changes over time
 - Population growth
 - Economic development
 - Technological change

Pathways Approach

- Most previous studies focused on incremental management on specific sites
- A pathways approach focuses more on landscape goals and less on incremental management

(Bonnicksen, 2000, Fedkiw 2008, Fedkiw and Cayford 1999, Frederick and Sedjo 1991, MacCleery 2004, Sampson and Hair 1990, Sample 2004, Trefethen 1975)

Pathway Levels

- 1st level decisions: Bounds & Limits
- 2nd level decisions: Landscape Goals
(e.g., what to sustain on the landscape)
- 3rd level decisions: Landscape Forestry
- 4th level decisions: Implementation & Monitoring

First Level Decisions: Bounds & Limits

Public statements: laws, regulations, movements

- 1891 federal forest reserves
- 1897 federal forest management (Organic Act)
- Clean air & clean water acts
- Wilderness and environmental movements

Can be characterized as moves towards
sustainability

Second Level Decisions: Landscape Goals

Multiple ownerships & multiple objectives

Conflict & conflict resolution based on first level decisions including courts

Foresters versus citizens & citizens groups

Scientific management versus public voices for long term goals

Third Level Decisions: Landscape Forestry

Need to develop community & regional representative coordination committees

- Voluntary
- Incentives could be provided
- Could be converted to enforceable guidelines

Fourth Level Decisions: Implementation & Monitoring

One process—not two

Interaction between implementation &
monitoring

Education & coordination towards preferred
landscape outcome

Empirical support for pathways approach

- Society of American Foresters (SAF) Task Force 1992
- Minnesota Approach 1995 (based on SAF Task Force recommendations)
- National Commission on Science for Sustainable Forests 2005 (recognized the Minnesota Approach)
- United Nations Forest Forum 2004
- Recent Washington, D.C. policy discussions

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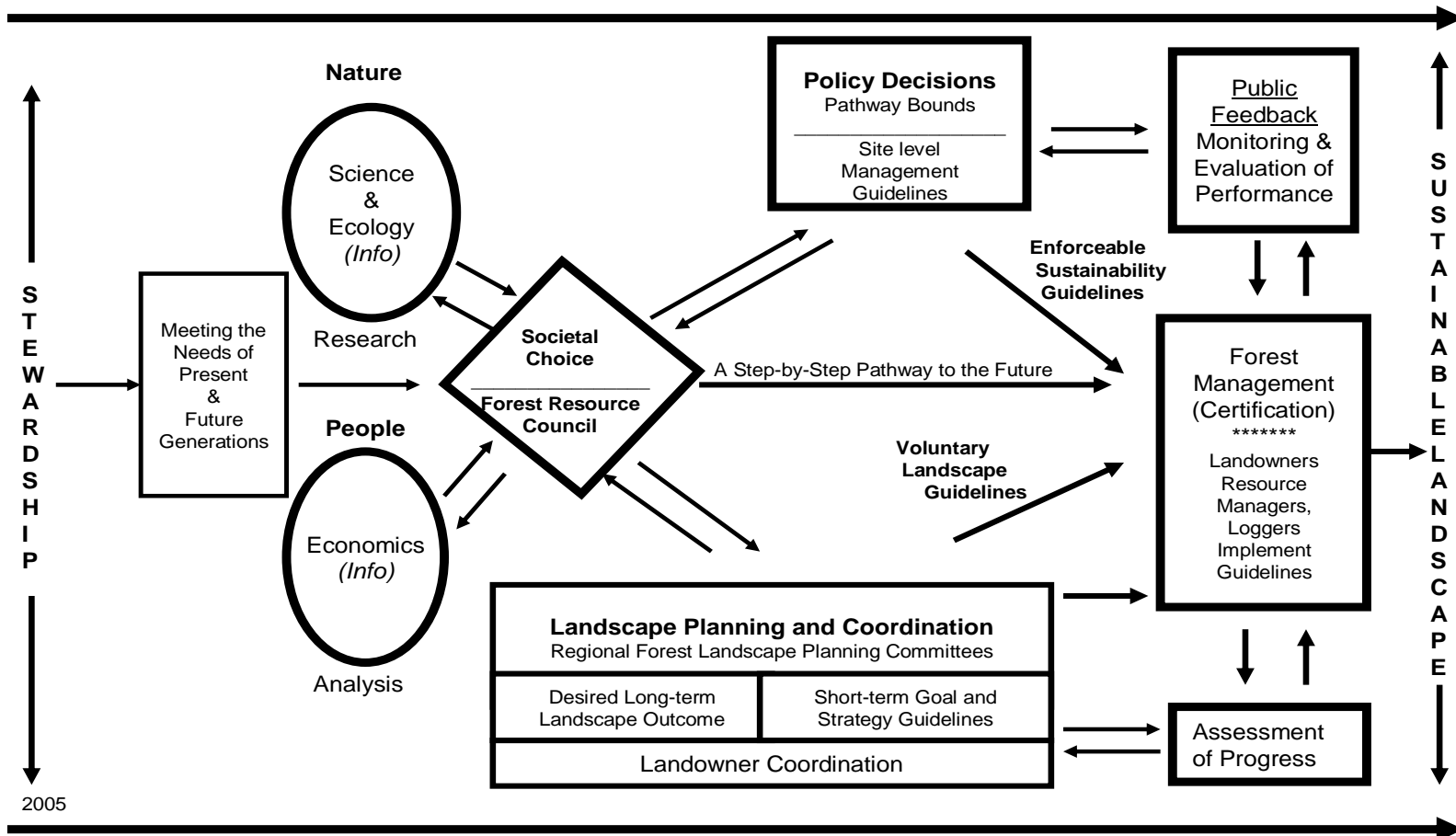
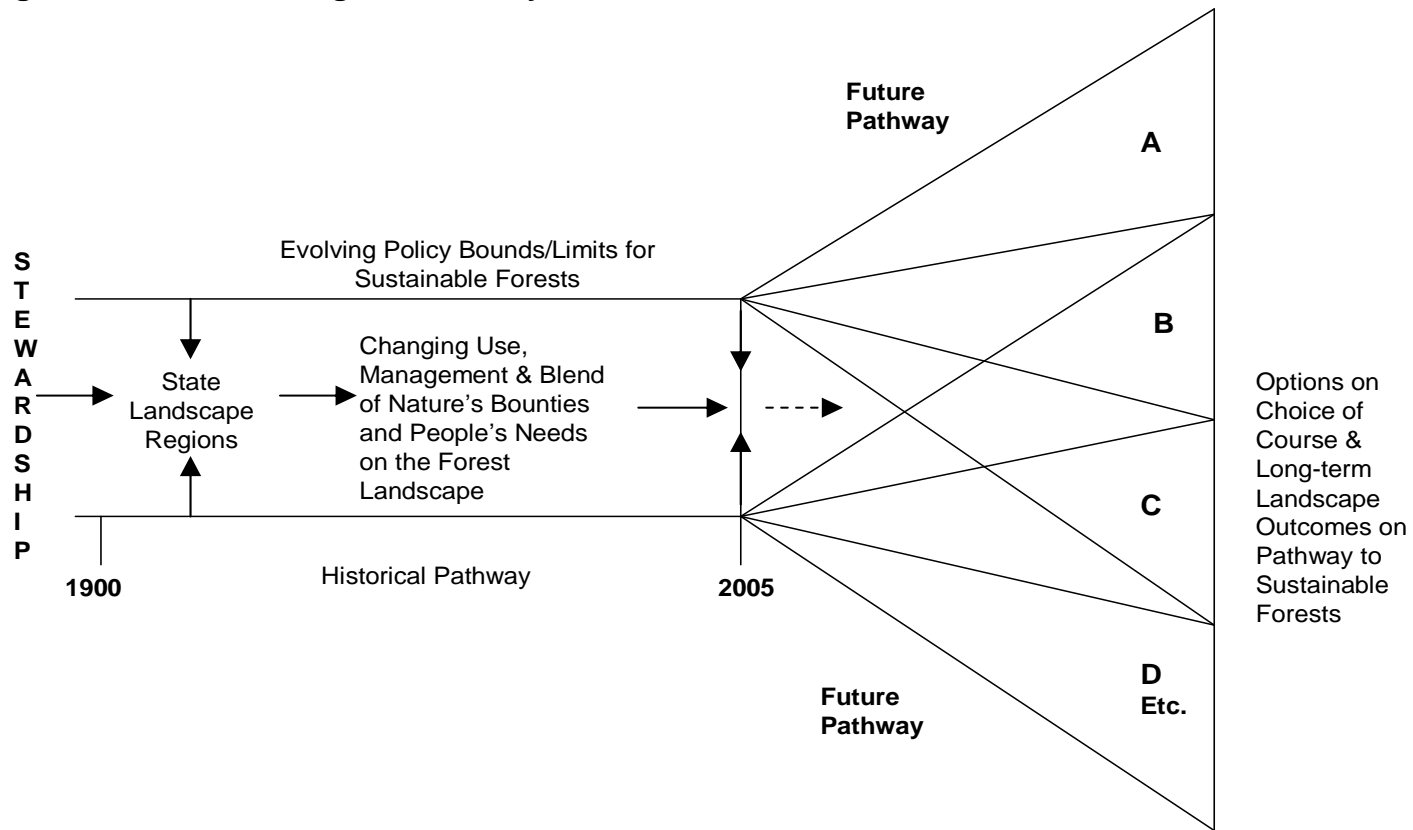


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Thank you.