

Protecting Society from Itself: Reconnecting Ecology and Economy

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February 14, 2007

LEGISLATIVE MANDATE

Clean Water Act (1972, 77, 82, 87)
Section 101(a)

“restore and maintain the physical, chemical, and biological integrity of the nation’s waters.”

“We are not responsible for biology.”

EPA Official, 1973



Application of Biological Multimetric Indexes*

Year	In-place	Under development
1981	0	0
1989	3	11
1995	42	6
2001	50	1

*Out of 52: 50 states + DC + ORSANCO

EPA-822-R-02-048
2002

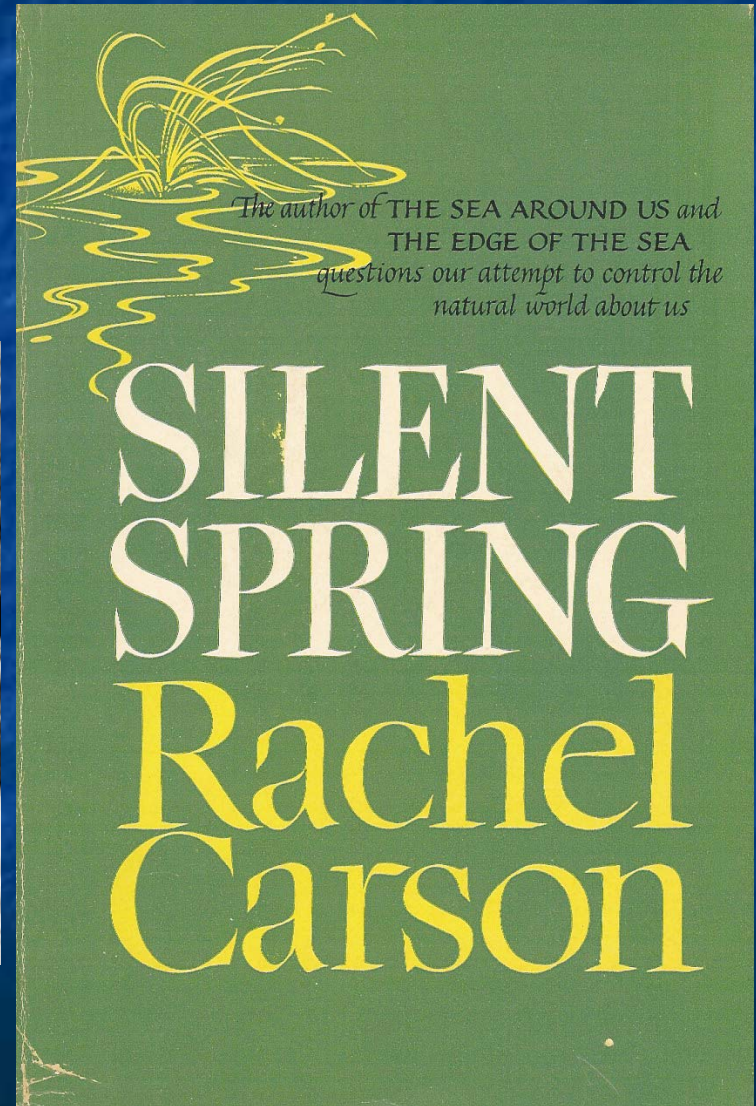
With Time, the Agency Landscape Shifts



- Physical variables → Biological variables
- Chemical stressors → All stressors
- Narrow view → Integrative view
- Bean counts → Biological endpoints and indicators



Biology is not Enough



Published 1962

An Enduring Paradox

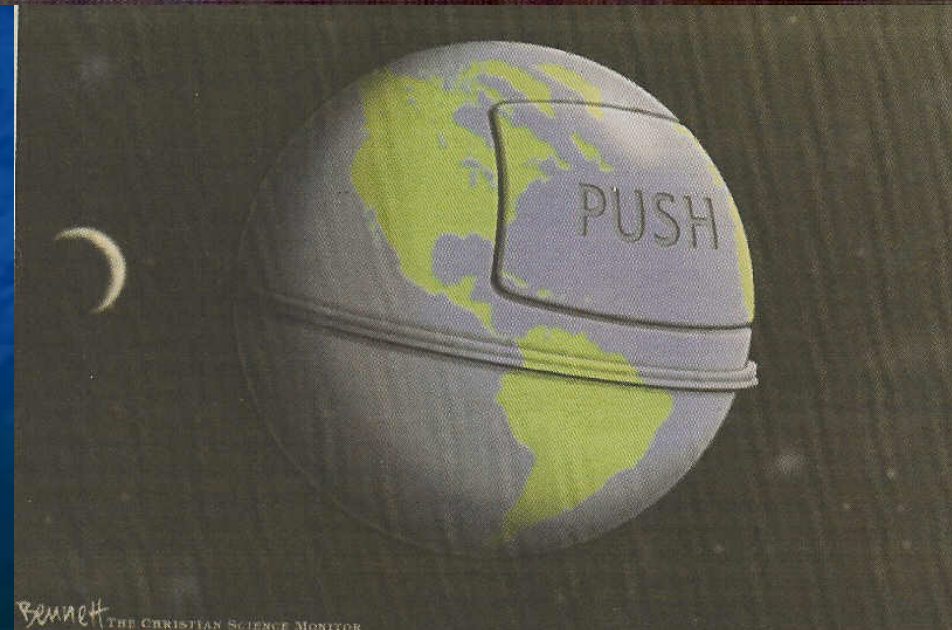
As scientific understanding of Earth and the effects of humans on Earth systems expand, the threats to Earth's living systems—human and nonhuman—worsen.

How can we be smarter and more knowledgeable, yet ignore so many of the lessons of that knowledge?

Earth is

Piggy-bank

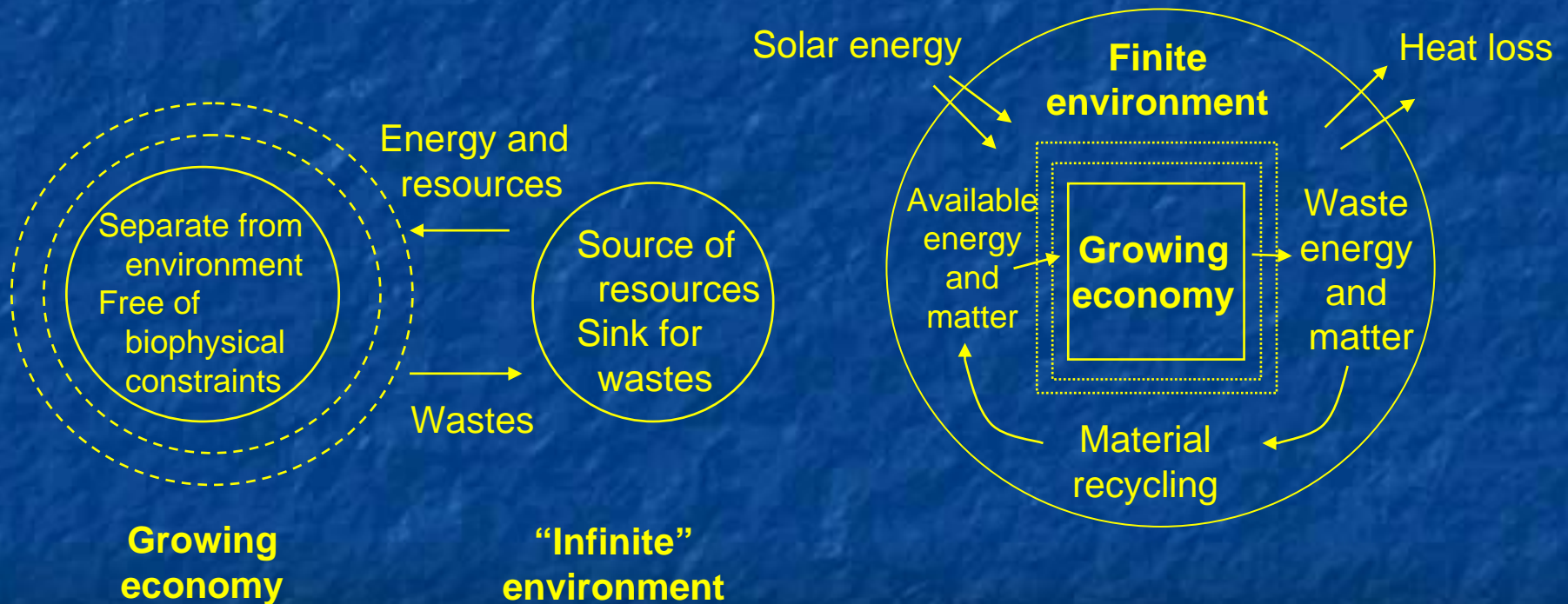
Garbage can



Humanity Must Revise its Actions in Four Important Ways

1. Recognize relationship between ecology and economy
2. Moderate negative effects of global business networks
3. Make our voices heard in professional, social, and civic circles
4. Improve institutions of governance

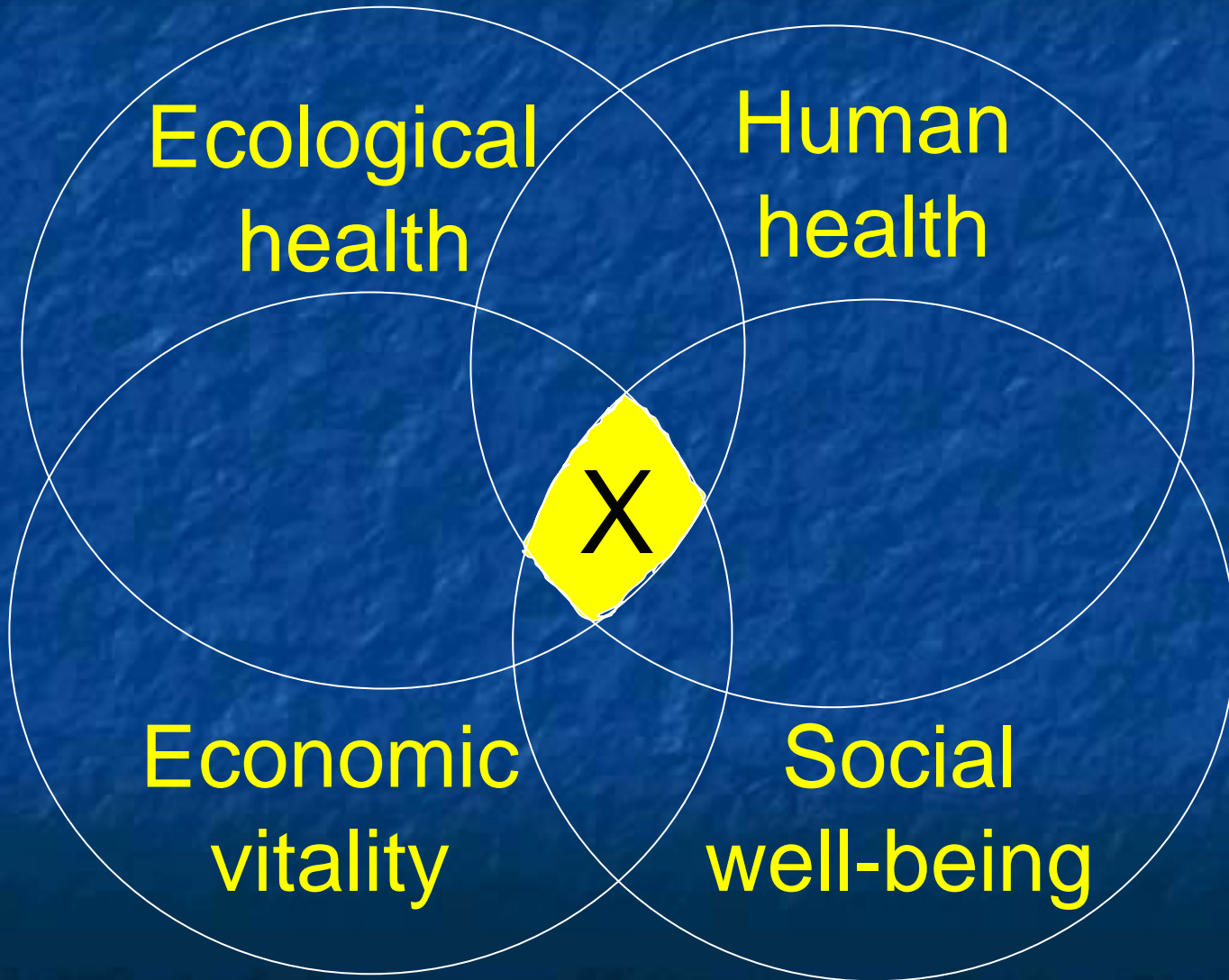
1. Recognize the real relationship between ecology and economy



a. Expansionist perspective

b. Steady-state perspective

Think About Figures!



2. Temper runaway industrial capitalism with policies that recognize social, ecological, and aesthetic goals.

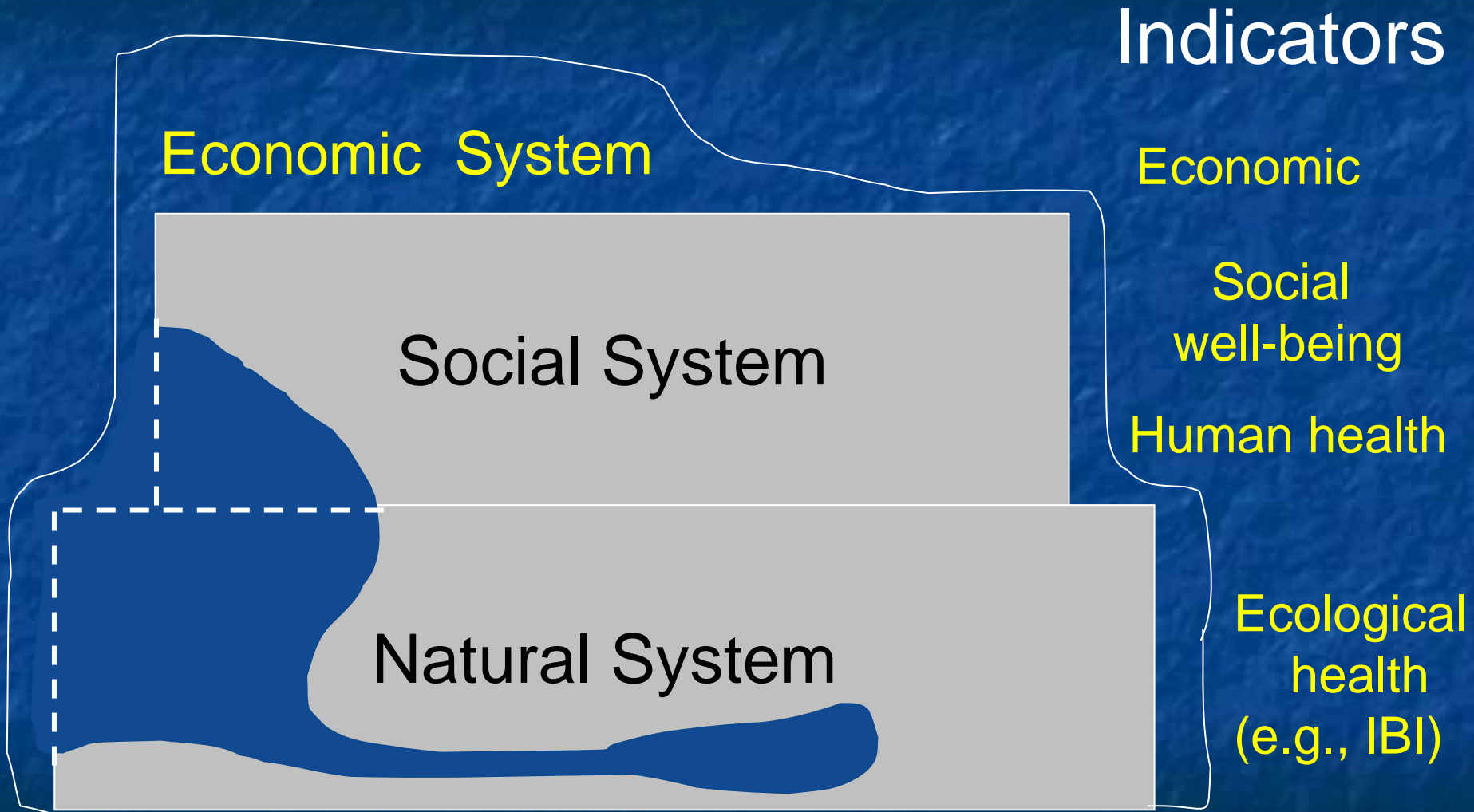
- Globalization is not new
 - Humans out of Africa
 - Agriculture and domestication in select areas
 - Domestic “packages” (crops, stock, diseases)
 - Industrialization
 - Economic globalization: industrial capitalism
 - “20th century’s indispensable ideology” (McNeill)

“Dirty Little Secrets” of Capitalism

1. Harvesting more from nature is the unstated goal of capitalism.
2. During accumulation of capital (wealth), capitalists do not pay their bills.

Social and environmental deficits accumulate.

Two-layer Cake With Frosting



Use diverse indicators to stop the erosion!

3. Make our voices heard in professional, social, and civic circles

- Founding fathers established principles and framework to protect the interests of individuals and the collective well-being
- 21st century citizens should rise to that standard
- Special responsibilities of scientists/scholars
 - Public paid for our knowledge

- When scientists don't speak up, the message seems to be that science is irrelevant and scientists don't matter.
- Should doctors be neutral about the lives of their patients?
- Should judges or lawyers profess neutrality about justice and injustice?

I think not, and I also contend that scientists should speak up.

4. Improve institutions of local, national, and international governance

- Forces of capital and industry, which are amoral, have outgrown the forces of government (Lloyd 1881)
- Failure of government institutions to protect the public's interest explains the paradox
- The state and civil society should serve the public good, not a false idol of capitalism that benefits the few at the expense of the many
- Otherwise we erode the social and ecological layers of Earth systems

- Replace the skewed world view
- Depend less on misleading indicators
- Alter balance of power
 - government, business, and civil society
- Harness the market

