# Sustainability: Theory and Practice\*

Sabbatical, Fall 2010 Margaret Robertson, ASLA



\*a textbook for undergraduate sustainability students. Pearson, 2012.

### "Sustainability," the idea:

- Systems
- Processes that continue over very long periods of time



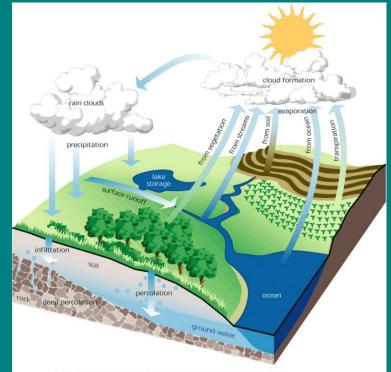


Fig. 2.2 – The hydrologic cycle. The transfer of water from precipitation to surface water and ground water, to storage and runoff, and eventually back to the atmosphere is an ongoing cycle. In Stream Corticine Restonsito: "Finisples, Processes, and Practices (1909). Interagency Stream Restoration Working Group (15 federal agencies)(FISRWG).

USDA/ NRCS



#### "Triple Bottom Line"

- Environment
- Economics
- Equity

 (They are connected.)



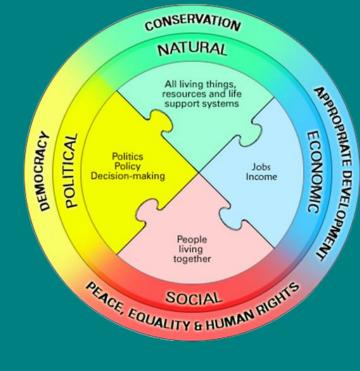
Ecotrust: Conservation Economy Pattern Map

### "Sustainability," the discipline:

- New field
- Interdisciplinary



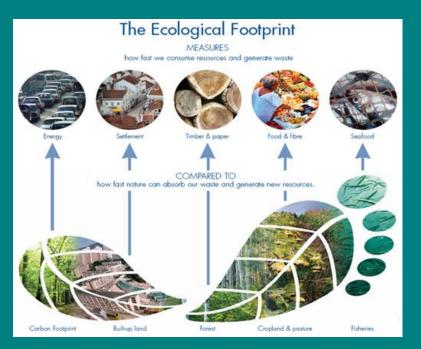
Information visualization – Pathfinder citation analysis

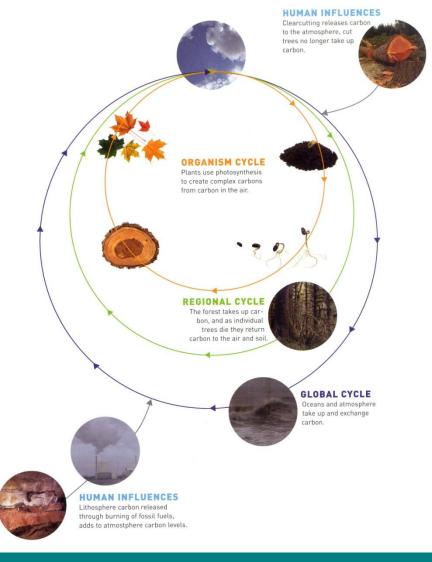


The Unesco model

### Sustainability professionals need:

- Broad knowledge
- Systems thinking
- Critical thinking skills
- People skills





Footprint Network

#### Designer's Atlas of Sustainability

### Body of Knowledge $\rightarrow$ contents of book

- I. Overview
- II. Issues
- **III.** Strategies
- IV. Organizational Skills



- I. Overview
  - 1. Sustainability
  - 2. History
  - 3. The Living Planet
  - 4. Gaia: Earth Systems Science
- II. Issues
- **III.** Strategies
- IV. Organizational Skills

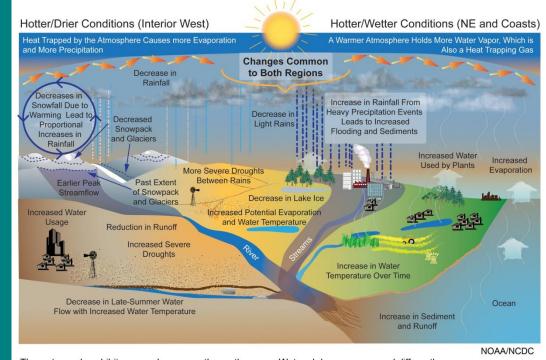


#### I. Overview

#### II. Issues\*

- 5. Climate Change
- 6. Water Issues
- 7. Ecosystem Change
- 8. Human Health
- 9. Human Population Growth
- 10. Pollution
- 11. Fossil Fuels
- 12. Food Issues
- 13. Failing States
- 14. Economics
- **III.** Strategies
- IV. Organizational Skills





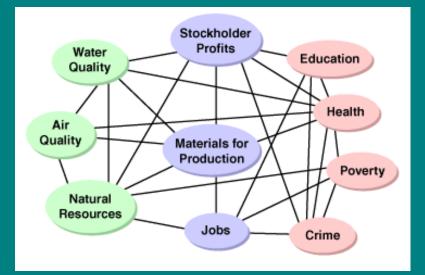
The water cycle exhibits many changes as the earth warms. Wet and dry areas respond differently.

\*State of the planet: dire and getting worse. We are nearly out of time.

- I. Overview
- II. Issues
- III. Strategies\*
  - 15. Climate Stabilization
  - 16. Ecosystem Restoration
  - 17. Stream Restoration
  - 18. Stabilizing the Human Population
  - 19. Pollution Remediation/Prevention
  - 20. Renewable Energy
  - 21. Energy Efficiency
  - 22. Water Efficiency
  - 23. Stormwater and Wastewater
  - 24. Sustainable Sites
  - 25. Soil Conservation and Renewal
  - 26. Green Buildings
  - 27. Green Manufacturing
  - 28. Waste and Recycling
  - 29. Food
  - 30. Livable Cities
- IV. Organizational Skills

- Biogas Solar energy URBAN DEVELOPMEN Schass, metal, paper. HERMA RECOVERY Power REFUSE Power ENERGY CENTRE Input / Output est waste DIGESTER Organic waste Heating / Cooling power BUILDINGS WATER CIRCLE Potable WASTE WATER TREATMENT water POTABLE WATER TREATMENT Treated water fed into Service the river ADVANCED water TREATMENT Rainwater River water
  - \* There *is* hope. Threshold of a new, regenerative era?

- I. Overview
- II. Issues
- **III.** Strategies
- IV. Organizational Skills
  - 31. Certification Tools
  - 32. Indicators and Measurement
  - 33. Working in an Organization
  - 34. Working with People
  - 35. Education



Sustainable Measures

### Challenge: comprehensive scope

#### **Research Materials**

- 100's of books
- 100's of articles
- LOTS of notes!





A crude "cataloging" system



#### The rest of the process

- Reviews
- Pedagogical devices
  - Questions
  - Think-about-it boxes
  - Summaries
  - etc., etc.
- Glossary, index



My editor at work

#### Illustrations

#### Photos:

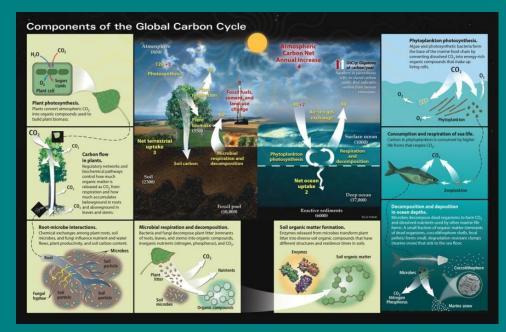
- Me and my camera
- Federal government
  = public domain = free

#### Diagrams (if needed):

- Sketches from me
- $\rightarrow$  Pearson graphics dept.



The atmosphere – NASA



The carbon cycle – Dept. of Energy

### **Final Stages**

#### Publishing today:

- Editor = subcontractor
- Indexer = subcontractor
- Production house = subcontractor

#### January 2012?

• Roll the presses!



Moonrise. U.S. Global Change Research Program