

SOCIAL SCIENCE

Water Is Life, Water Is Power: Water's Role in Human History

1. PHYSICAL PROPERTIES OF WATER 5%
 - A. Chemical and Atmospheric Properties of Water
 - B. Biochemical Properties of Water

- II. THE ENVIRONMENTAL HISTORY OF WATER 55%
 - A. Water and Pastoralist Cultures
 1. Mongol Culture and Water
 2. Bedouin Culture and Water
 3. Maasai Culture and Water
 4. The First Nations of Eastern North America
 - B. The Great Transition: Water and the Neolithic Revolution
 1. The Neolithic Revolution in Southwest Asia, China, and Mesoamerica
 - a. Southwest Asia
 - b. China
 - c. Mesoamerica
 - d. The Expansion of Arable Land in Southwest Asia
 2. The Meaning and Role of Water in the First Urban Civilizations: Mesopotamia and Egypt
 - a. Mesopotamia
 - b. Egypt
 - c. Religious Beliefs
 3. A Second Comparison: China and the Indus River Civilization
 - a. China
 - b. The Indus River Civilization
 - c. Water and Early Agricultural Societies
 - C. The Wittfogel Thesis
 - D. The "Great Goddess" Hypothesis
 - E. The Role of Water in European Antiquity
 1. Water Usage and Problems in Ancient Greece
 2. Water in Ancient Greek Culture
 3. Water Use and Problems in Ancient Rome
 4. Water as a Factor in Roman Imperial Expansion and Collapse
 - F. The Second Great Transition: Urbanization and the Industrial Revolution
 1. Prologue: Water Management in Medieval China
 2. Water Management and the Growth of Early Modern Cities in Europe
 - a. Canals
 - b. Windmills
 - c. The Modern Period
 - d. Case Study: The Low Countries
 - e. Case Study: England
 - f. Case Study: Germany

3. Water as a Power Source: The Concept of Energy System Transitions
 - a. The Los Angeles Aqueduct
 - b. Soviet Management of the Aral Sea
 - c. The Growth of Hydroelectric Power
 - d. Case Study: The Piave River
 - e. Case Study: The Merrimack River
 - f. The LMEST and Canal Construction
 - g. Other Impacts of the LMEST
4. Industrial Water Technology in Global Applications
 - a. Case Study: Egypt, Revisited
 - b. Case Study: The Indus River Valley, Revisited
 - c. Case Study: China, Revisited

III. PRESENT-DAY WATER ISSUES 20%

- A. A Miniature History of Waterborne Diseases
- B. The Sanitary Revolution
- C. Water in the Industrialized World: The United States
 1. Drinking Water
 2. Bottled Water
 3. Sewer Systems
- D. Water in the Industrializing World: China
- E. Water in the Rural Global South
- F. Water in the Urban Global South—The Example of Bolivia
- G. Water and Agriculture
 1. The Ogallala Aquifer
 2. The Desert Southwest
 3. The Arabian Aquifer System
 4. Eutrophication
- H. Oceanic Water
 1. Saltwater Eutrophication
 2. Nonorganic Waste and Bioconcentration
 3. Pollution from the Transport of Oil
 4. The Great Pacific Garbage Patch

IV. WATER AND THE FUTURE OF HUMAN CIVILIZATION 20%

- A. Response to Scarcity, Example 1: Conservation and Reuse in Israel
- B. Response to Scarcity, Example 2: Desalinization in California
- C. Response to Scarcity, Example 3: Unusual Approaches
 1. The Proposed Rerouting of Siberian Rivers
 2. Operation Plowshare
 3. The South-North Water Transfer Project
 4. Iceberg Towing
 5. Other Possibilities
- D. Climate Change, International Relations, and Water
 1. The Rio Grande and the Colorado Rivers
 2. The Nu/Thanlwin/Salween River

3. Lake Victoria
4. Subsurface Aquifers
 - a. The Nubian Sandstone Aquifer
 - b. The Guarani Aquifer
5. The Convention on Long-Range Transboundary Air Pollution (LRTAP)