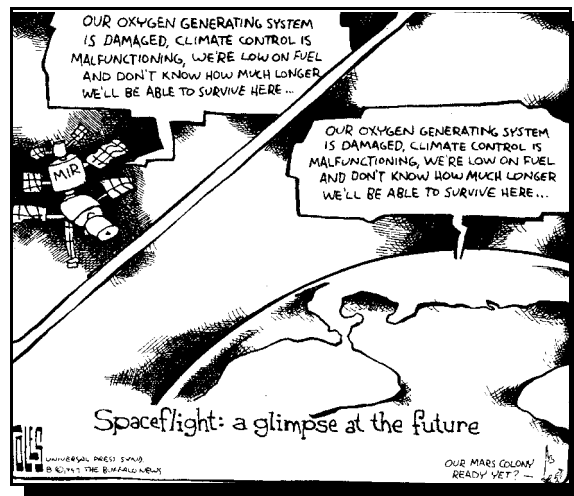


ECN398  
*Ecology, Economy and Society*  
Professor James L. Starkey

***The role of the complex interaction between economic, social and ecological forces in the rise and disintegration of complex societies and in the current global ecological crisis.***

*The Amazon forest is burning, the Indians are dying, and paradise is being lost. Why do we care? Is it about our worst fears about global warming may come true? Do we understand that once the forest is gone, it is gone forever? Isn't extinction inevitable anyway? In a world of war and starvation, with dislocation and violence, in the face of recession and economic uncertainty, do we really have the energy and compassion to care about the spotted owl? A few forest Indians? An undescribed and unknown species that may or may not be useful to us someday? Or do we, perhaps, perceive that there is still time to save something large and complex and immeasurably beautiful - Binka Le Breton 1993*

*There is the moral of all human tales;  
Tis but the same rehearsal of the past;  
First freedom, and the glory - when that fails  
Wealth, Vice, Corruption -  
Barbarism at last  
And History, with all her volumes vast,  
Hath but one page - Byron*



*But one must have an explanation of economic behavior. Neither man's curiosity nor his inherent ego allows him to remain contentedly oblivious to anything so close to his life. J. K. Galbraith, 1957*

*In the end, our society will be defined not only by what we create, but by what we refuse to destroy - John C. Sawhill, President, The Nature Conservancy 1990-2000.*

*Plus ça change, plus c'est la même chose?*

Romantics are often subject to fits of melancholy and despair over the course of human events so it does not seem incongruous that a romantic poet such as Byron would express, as he does in the lines above, so fatalistic and pessimistic a view of human history. Romantic movements typically emerge in periods of stress caused by radical economic and social changes and typically look fondly backward at the paradise that had been lost. Although the past may have left much to be desired, to the romantic, the present was usually viewed as worse. It seems inevitable then that the idealistic and sensitive become cynical when confronted with the detestable mix of arrogance, folly and cruelty that constitutes altogether too much of the history of humans and which seems to have escalated over time. In the present, not only has humanity continued its intra-species barbarism, it continues to wreak havoc on other species and entire ecosystems. Indeed, human economic activities now threaten to alter the dynamic processes of the biosphere in ways that are for the most part unpredictable, but are, to say the least, potentially catastrophic.

It is not our purpose to plumb the depths of the poetic soul, rather it is to study ecological economics from the perspective of history. Nevertheless, it is probably a good idea to keep Byron's poem in mind as you journey through this course of study. I think you will find evidence that Byron was every bit as good a historian as he was a poet.

Even a casual review of history sustains Joseph Tainter's quip that "civilizations are fragile and impermanent things." History seems to indicate that the clash of economy and ecology, combined with rigid or dysfunctional social and political systems has been an important element in the disintegration of many complex societies. The drama of rise and fall has been played out on many stages at different times, but, as Byron suggests, the plot seems to have been the same. We shall see.

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*...the master-economist must possess a rare combination of gifts. He must be a mathematician, historian, statesman, philosopher - in some degree. He must understand symbols and speak in words. He must contemplate the particular in terms of the general, and touch the abstract and the concrete in the same flight of thought. He must study the present in light of the past for the purposes of the future. No part of man's nature or institutions must lie entirely outside his regard. He must be purposeful and disinterested in a simultaneous mood; as aloof and incorruptible as an artist, yet sometimes as near the earth as a politician - J. Maynard Keynes*

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The purpose of the course is to give students some idea of the ecological nature of economic forces and the role they have played in causing and resolving significant human problems in the past and what problems, opportunities and constraints they pose for the future. The subject matter is structured around historical situations and is interdisciplinary. The analytical framework is also interdisciplinary, but at its heart the focus is on the economy. As the words of Keynes quoted above so eloquently, being a good economist requires many skills and abilities. It also requires the master-economist to broaden his "regard" into many disciplines usually considered to be outside the boundary of economics. Thinking about the world and

studying it as a “master-economist” is a tall order, which is, simultaneously, intellectually exciting and profoundly intimidating.

The second focus of ECN399X is the Global Ecological Crisis and the social and political problems it portends. The premise is that the root of the crisis is the functioning of the human economy. Therefore, any useful analysis of the ecological problem must comprehend human political economy. Similarly, any analysis of the economic activity that does not include an interface with the ecosystem is not only useless, it is dangerous. As the words of Binka Le Breton quoted above make strikingly clear, the ecological problem poses important and perplexing scientific, economic, social, political and ethical issues. And as Galbraith warns, these issues are too important to be ignored, and, one should emphasize, they must be dealt with simultaneously. Finally, although it has come to be something of a cliché, we must also heed the warning of Santayana that not understanding history is to risk repeating it.

### *The Analytical Framework*

Most fundamentally, the course will explore the complex interrelationships between economics, ecology and social justice. This interaction is obvious in the film *The Burning Season*, where Chico Mendes, an impoverished “rubber tapper” in the Brazilian Amazon fights to protect his rubber trees from the predation of state-subsidized cattle-ranchers. The film also confronts one with the broader issues of rainforest destruction, species extinction, cultural extinction, and global warming.

The unifying theme is the issue of whether the economies and the societies they support are sustainable given the ecological boundary conditions that constrain them. For example, in *The Burning Season* it is evident that rubber tapping is sustainable, but cattle ranching is not. The problem is that Brazil needs meat more than it needs rubber. Thus, we see ecological problems have their roots in social problems - the misery and poverty of Brazil’s urban masses are driving the destruction of the rainforest and all the environmental ills attendant to it.

The analytical framework we shall use, is the relatively new, and still developing field of Ecological Economics. Ecological Economics, which developed out of the pioneering efforts of Kenneth Boulding, Nicholas Georgescu-Roegen and Herman Daly, differs from “conventional” economics in several important ways.

It is difficult these days to not be aware of environmental problems such as global warming and climate change, species extinction, hazardous waste pollution, and epidemics of new and re-emerging diseases. Similarly, one would have to go to some extremes to avoid confrontation with social problems such as, inequality of wealth and income, degrading poverty, crime, famine and political corruption. What is not commonly appreciated is that all of the problems are connected.

Both “economics” and “ecology” have the same root word, the Greek *oikos* meaning “household.” Eco-logy then means the science of the household, while eco-nomics means the discipline that deals with the numerous aspects of managing the household. Logically, then Economics should be a sub-branch of Ecology, but historically it has not worked out that way. The development of Ecological Economics, and the *International Society for Ecological Economics* in 1988, is an attempt to root economics solidly within the boundaries of ecology.

The combination of the terms ecology and economics provides for a very catholic understanding of the term household which includes the social, political and natural households in which humans institutionalize the economies they require to produce what they need. It follows that a complete analysis of the situation of any individual or group requires a framework that includes economic, social and ecological factors.

Ecological Economics is part of the new “science of sustainability.” In 1987, the World Commission on Environment and Development, known as the Brundtland Commission, published a report titled, *Our Common Future*. In this report, “sustainable development” was broadly defined to be development that “meets the needs of the present without compromising the ability of future generations to meet their own needs.” Since then scientists, social theorists, economists, and others have struggled to define and operationalize the concept. In the process there has been much controversy, and little success. Given the enormous complexity of our biological, social and economic lives, one should not be surprised at this. The daunting complexity of the problem has forced those who have been searching for a meaningful and operational conception of sustainability into “crossing disciplinary orders, sometimes somewhat uncomfortably” [Melinda Kane, “Sustainability Concepts: From Theory to Practice,” Introduction to *Sustainability in Practice*, 2000, p. 20]. Sustainability science needs to “span the range of spatial scales between such diverse phenomena as economic globalization and local farming practices, ... environmental degradation resulting from multiple stresses, ... and a wide range of uncertainties in natural and socioeconomic systems” [Robert W. Kates *et al*, Sustainability Science, *Science* 292 (27 April, 2001) p. 541]. Clearly, such “nature-society interactions” require cross-disciplinary thinking and cooperation [Kates *et al* p. 541].

### *Ecological Economics*

J.M. Keynes once defined economics as a “method rather than a doctrine, an apparatus of the mind, a technique of thinking which helps the possessor to draw correct conclusions.” Economics, however, is far from free of doctrinal elements. Most fundamentally, the normative foundation of Economics rests on the unexamined and presumably universal principle that “more is better than less.” Given this doctrine, economic growth becomes the *sine qua non*, the prime directive as it were, of Economics. In short, economists use their mental “apparatus” in the service of a single doctrine - to find ways to increase the production of goods and services over time.

As a first principle, Ecological Economics rejects the pro-growth agenda of conventional economics in favor of the development of *sustainable economies*. Sustainable development suggests improvements in the quality of life do not lodge in mere quantitative growth, in short, more is not necessarily better than less. And, given the social and ecological cost of producing goods and services, “more” is probably worse. Consequently, GDP is not seen as a particularly good indicator of well-being. Ecological economists are working to develop alternative indicators such as the “Index of Sustainable Economic Welfare” or the “Genuine Progress Indicator” which take into account depletion of natural capital, the costs of pollution, and the social costs of poverty and misery. These indicators suggest that the economic growth of the past several decades has produced costs in excess of benefits. High rates of economic growth tend to produce not only ecological devastation, but high degrees of social

inequality as well.

As they are far less sanguine about the potential of substituting physical and human capital for natural capital, Ecological Economists emphasize the importance of conserving natural or ecological capital which provides essential ecological services. In the spirit of ecology, ecological economists tend toward seeing natural limits on economic growth, have more concern for the future, and worry more about irreversible decisions.

Second, Ecological Economics rejects the anthropocentric bias which justifies the valuation by economists of other life forms as mere “resources” with no intrinsic worth. The traditional jibe that the economist “knows the price of everything, and the value of nothing” does not apply to Ecological Economists who take seriously the words of William Blake, that “all that lives is holy.” Or, as a Balinese farmer would pray, *Om sarwa prani hitangkaram* (may all that breathes be well).

Third, Ecological Economics is more concerned with the etiology of “human wants” than conventional economics which simply takes them as a given, i.e. independent of economic and social forces. The social dynamics of conspicuous consumption as articulated by Thorstein Veblen and James Dusenberry, if taught at all in Economics classes, is presented as a *curiosum*, rather than as an ecologically dangerous social force. Rather than seeing it as a solution to ecological problems, the idea of “voluntary simplicity” is seen by mainstream economists as seditious because of the potential macroeconomic problems its practice would present. Moreover, for ecological economists there are “goods” and there are “bads.” An ecological economist, for example, would subtract the cost of the clean-up of a toxic waste dump from GDP rather than add it on as does conventional economic accounting.

Ecological Economics should be, at least in this context, broadly understood to mean the “study of human economic systems in relation to ecosystems.” Ecosystems, in turn, should be broadly understood to include any “system” that impacts on a human being’s access to the resources she needs to survive and prosper. It matters little to a starving person whether food is not available to her due to a drought-induced crop failure, a pest or fungus, or to her lack of an “entitlement” to food that might be abundant in supply. Similarly, a rubber tapper that is being exploited in a monopsonistic market in the Amazon rainforest is as threatened by a government-subsidized cattle rancher that threatens to destroy the rubber trees on which he depends for his livelihood as by any insect, or fungus. Indigenous people are decimated as effectively by disease (which is often the consequence of economic activities), loss of its habitat to miners or ranchers, or outright genocide.

In another dimension, the health of a community can be challenged by the “liquidation” of an important local employer that might follow a hostile takeover, or the flight of a corporation to a low wage country, or the depletion or poisoning by a corporation of an aquifer or lake or river, or by changes in government policy.

The basic point is, that while necessary, science and technology are not sufficient for the solution to ecological problems. Ecological problems have their roots in economics and politics. True solutions will require good science as well as economic, social and political change. More importantly, there will have to be more weight given to values other than to technical expertise.

Economists in the attempt to build a positivist science, have endeavored to forget the fact that before he published the *Wealth of Nations*, Adam Smith published, *A Theory of Moral*

*Sentiments.* For Smith, rational self-interest, and each individual's emotional concern for others were the "two parts of one human nature [Clive Splash [2000], "Reflections Upon the Role of Moral Sentiments in Economics," in *Sustainability in Question*, p. 137]. Smith insisted that "sympathy" and moral judgement were central to how "humans both operate and value the world around them" [Splash, p. 137]. Hence, values and emotion can no longer be disdained in the decision-making process. The risk assessor's rational calculation the risk of nuclear accidents is not to dominate how people "feel" about such risk. They may feel, out of sympathy with future generations, that it is wrong to burden them with mountains of radioactive waste buried in mountains, for example. Moreover, they may not want to have such risks imposed on them, even if the experts tell them it is in their material interest to do so. Emotion is a fundamental component of the human being and subjective feelings are an important component of human well-being. Ultimately what a "sustainable society" will be understood to be, will rest on what people perceive their "needs" to be. These needs will reflect rational, moral and emotional parts of humans.

### Sustainable development

Ecological Economist Neva Goodwin has characterized our current environmental situation as a "mess." [Neva Goodwin (2001), *Civil Economy and Civilized Economics*, G-DAE Working paper #1, p. 7]. The characteristics of this mess are as follows:

1. It has trans-generational aspects. Keynes once quipped that, "in the long-run we are all dead." While Keynes is surely dead, we are living with the consequences of the choices made by his generation, and future generations will have to live with those made now.
2. It has substantial global aspects. As we shall see in the Burning Season, land-use choices made in Brazil can influence the global climate. As we will see in our analysis of coal and nuclear power, choice of fuels to produce energy can have global consequences.
3. The trans-generational and global aspects of ecological issues raise the question of equity. How do current choices alter the distribution of wealth between present and future generations and rich and poor nations?
4. The effects of environmental degradation may be irreversible and may occur in "a non-linear, unpredictable fashion." [Goodwin p. 7]. That is, many natural systems may be chaotic in nature. Due to our limited comprehension of the complexity of such systems, there is a great deal of uncertainty regarding the effects of current environmental degradation on the future development of natural systems, and since humans depend on these natural systems, on the quality of human life in the future.

The response of Ecological Economics to this "mess" is the "Precautionary Principle which emphasizes the need to recognize uncertainty by taking extra precautions" [Goodwin p. 8]. When it comes to economic activities that are potentially harmful, the Precautionary Principle reverses the current "innocent until proven guilty" standard manifest in the law today, to one of

guilty until proven innocent. The precautionary principle mandates “foresight and prudence” in economic activities rather than coping with the ecological consequences of economic actions through punishment and remediation, especially since, in the light of possible irreversibility, remediation may not be possible, and the consequences may be catastrophic.

Sustainable development requires that “economic means” be directed toward improving human well-being, without imperiling the well-being of future generations. Further, it is asserted that fairness dictates that development be directed towards raising the living standard, to use Rawls’ term, of the “least advantaged” in the world.

### **Text for the Course:**

James L. Starkey, *Economy, Ecology and Society*. This book is a work in progress and will be supplied at a cost to be determined .

### **Examinations, Papers and Grades**

**ECN399X is a writing intensive class.** There will be no formal classroom examinations. The exams will be take-home, essay exams. You will also have to prepare three papers. These papers must be typed. Your grade will be calculated as follows:

- First Exam (20 points)
- Second Exam (20 points)
- Final Exam (20 points)
- Paper I (15 points)
- Paper II (15 points)
- Paper III (10 points)

There will be no scaling. Your grade will be based on the *absolute* number of points earned e.g. 85 points = B.

### **Papers**

***Papers must be typed and free of spelling and grammatical errors.*** I advise each of you to get several partners to proof and edit papers before they are submitted to me. You may revise your papers as often as you please, but certain rules must be followed. Each revision must come with cover sheet indicating exactly what revisions were made. Changes must be *italicized* . You must also submit the most recent draft along with my comments.

### **Paper I**

You are to view the film *Rapa Nui*, produced by Kevin Costner and written and directed by Kevin Reynolds. *Rapa Nui* is an eco-parable based on the story of the people of Easter Island. This film is available at Video Junction, and I will show it at times to be announced. This production has been called an eco-film, because it conveys a message about the ecological crisis. Someone not initiated into the mystery of Easter Island might not comprehend this message. Imagine that you, and an uninitiated friend, have just viewed the film. Using selected scenes from the film, illuminate your friend as to their ecological significance, i.e. inform them of the appropriate law(s) of ecological economics. In particular, I would like you to discuss the following statement made by the *Ariki*: “*more babies, that’s what we need, more of everything, isn’t it?*” Your paper should be no less than five, double-spaced pages long [12 font].

**Paper II.** Depending on the source of the information one reads the world is either on the precipice of massive ecological disruption due to global warming or is suffering under the delusions of many alarmist “chicken-littles” that would have us impose great costs on the world to reduce greenhouse gas emissions with no ostensible benefits. Indeed, there are those who assert that global warming will ultimately work to the benefit of humanity. Even a casual observer, however, soon notices a distinctive partisan pattern in the positions any individual might take on this issue. Those who sustain the hypothesis that global warming is anthropogenic in origin and will prove very harmful to humans are invariably political liberals. Those who deny global warming is happening, or deny it is being caused by human economic activity, or who deny it will be harmful or even insist it will be beneficial, are invariably political conservatives.

Your assignment is to search the web sites of several liberal and conservative organizations for information on global warming to confirm, with a brief report, the asserted partisan pattern. The second step is to write a short essay on why you think this polarity has emerged. Why have conservatives been drawn to facts that deny global warming and why have liberals been attracted to facts that make it very threatening?

**Paper III.** Several years ago, a resident of Uzbekistan, in the former Soviet Union, remarking on the appalling pollution fostered by the Soviet government, asked if there was “any other country in the world that poisoned its people” the way the Soviet Union did? The book, *A Civil Action* and the movie with the same title, and recent reports by the EPA of Dioxin contamination of the Woonsquatucket River have raised, once again, the awareness of the American public to the pervasiveness of toxic substances in our environment. The world was first warned about these substances in 1962 when Rachel Carson published *The Silent Spring*. In 1997, Carson’s warning was renewed by Sandra Steingraber in her book, *Living Downstream: An Ecologist Looks at Cancer and the Environment*.

The Aztecs and the Mayans believed that human sacrifice was necessary to keep their society going. In a five page paper (minimum), I would like you to explain in what sense is the United States using human sacrifice to keep its economy growing and healthy? How are people selected for sacrifice? What kinds of policy reforms would be necessary to stop this sacrifice?

### ***Schedule***

**1 - Introduction, course requirements and objectives - Review of the Syllabus.**

**2 - Is Humanity Suicidal? The Basic Dimensions of the Ecological Crisis.**

Reading: **Chapter 1** - The Global Ecological Crisis

**3 - Terminal Trajectories: The Mystery of Easter Island**

Reading: **Chapter 2** - A Didactic on Terminal Trajectories. The film *Rapa Nui*

**4 - Basic Interfaces: Economy, Culture and Nature. The Basic Laws of Ecological Economics**

Reading: **Chapter 3** - The Theoretical Framework - Ecology, Economy and Society. The film, *Run Lola Run*.

**5 - The Original Affluent Society?**

Reading: **Chapter 4** - The First (and last?) Affluent Society - Gatherer-Hunters.

**6 - The Ecology and Politics of the Eurasian Neolithic Revolution.**

Reading: **Chapter 5**- Paradise Lost?: The Neolithic Revolution: Hard Work, Bad Diet & Disease.

**7 - The Hydraulics of Political Power**

Reading: **Chapter 6** - The Origins of Despotism.

**8. The Real Horsemen of the Apocalypse or What the Hell is a Kurgan? Climate Change, Migration, War, Ecofeminism, The Aryan Myth.**

Reading: **Chapter 7** - Horses, Racism and the Gender Hierarchy.

**9- Microparasitism and Macroparasitism in Mesoamerica.**

**Reading: Chapter 8** - The End of the Aztec Hegemony: Micro and Macroparasitism in Mesoamerica. And **Chapter 9** - The Mystery of the Maya..

**10 - Feudalism: Who's on Top, and all Manor of Things.**

Reading: **Chapter 10** - The Feudal Economy: Built by the Horse, Destroyed by the Flea.

**11- Marx & Malthus on the Population Bomb.**

Reading: **Chapter 11**- On Population.

**12. Periodic Waves of State Breakdown in the Early Modern World - The English and the French Revolutions.**

Reading: **Chapter 12** - Its Population Stupid: The Demographics of Revolution.

**13 - Micro and Macro parasitism in Ireland**

Reading: **Chapter 13** - God Delivered the Fungus, but the English Brought the Famine

**14 - The Industrial Revolution.**

Reading: **Chapter 14** - My Kingdom for a Tree: The Ecological Basis of the Industrial Revolution. & the film *Germinal*

**15 - Disease, Power and Imperialism**

Reading: **Chapter 15** -The Dark side of the Industrial Revolution -TB, Cholera, Yellow Fever, Malaria and Syphilis.

**16 - Ecocide in the Soviet Union.**

Reading: **Chapter 16**: The Tragedy of the Socialist Commons.

**17. Rainforest Political Ecology - The Amazon Basin - Brazil**

Reading: **Chapter 17** - Rain Forest Politics: The Economics and Ecology of Irreversible Decisions & the film, *The Burning Season*

**18 Civilization and its Malcontents: The Politics of Ecology.**

Reading: **Chapter 18** - Civilization and its Malcontents

**19. The Politics of Information** - What causes cancer?

Reading **Chapter 19** - Civil Inaction: Science and Politics in the battle against cancer.

**20 - We Have Met the Enemy & It is Us!**

Reading: **Chapter 20** - Affluenza: Never has so much meant so little to so many.