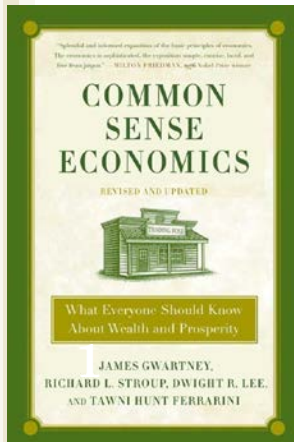


# MODULE H: THE ECONOMICS OF THE ENVIRONMENT



Common Sense Economics ~  
What Everyone Should Know  
About Wealth and Prosperity

<http://CommonSenseEconomics.com/>



Turn on the learning light!

# MARKETS AND RESOURCES

- Watch: [Are We Going to Use Up All Our Resources?](#) with Jay Richards
- Watch: [Resource Exhaustion of Oil Supplies](#) with John Stossel
- Read: [Are We Running Out of Resources?](#) by James Gwartney, Richard Stroup, Russell Sobel, and David Macpherson



# MARKETS AND RESOURCES

- Forecasts of resource exhaustion and why they have been wrong.
  - For centuries, people have been forecasting that the world will run out of resources. Why have they been so wrong?
    1. Humans Are Creators of Resources
      - Resources are created through human ingenuity. For example, oil was not a resource until humans discovered that it could be used as an energy source.
      - Humans not only consume resources, but they also discover how to expand them and use them more creatively.



# MARKETS AND RESOURCES EXTRA

- Forecasts of resource exhaustion and why they have been wrong.
  2. Market prices will assure future supplies.
    - If the scarcity of a resource increases, its price will rise. In turn, this will cause people to consume less of the resource, discover more of it, and create and development substitutes.
    - The English transition from wood to coal provides a good example. As wood prices rose, the English shifted to substitute energy sources, particularly coal.



# RESOURCES AND THE TRAGEDY OF THE COMMONS

- Watch: [Tragedy of the Commons](#) with Sean Mulholland
- Read: [Tragedy Make Simple—Where Have All the Fishes Gone?](#) By William J. Bennetta



# RESOURCES AND THE TRAGEDY OF THE COMMONS

- What is common ownership?
  - Commonly owned resource: A resource that is owned in common and that use of the resource is open to all. For example, ownership of fish in the ocean.
  - The term common ownership originated from commonly owned pastures around English villages. All villagers were permitted to freely graze their animals in the surrounding pastures, known as the “commons.”
  - In contrast with the open access of commonly owned resources, privately owned resources cannot be used without permission of the owner.



# RESOURCES AND THE TRAGEDY OF THE COMMONS

- What is the tragedy of the commons?
  - The tragedy of the commons is the overuse of the resource, sometimes to the point of exhaustion, that often results from the common ownership and open access to the resource.
  - With open access, each user can capture fully the benefit of resource use, but the cost is imposed on others. As a result, the users will over utilize the resource leading to inefficiency, congestion, and in some cases, exhaustion of the resource.
  - Examples include:
    - Excessive use of ocean fisheries, congestion of high use open access roads, and pollution of open access air and water resources.



# RESOURCES AND THE TRAGEDY OF THE COMMONS

- The tragedy of the commons does not occur when resources are owned privately. Why?
  - Private property rights allow an owner to exclude others from using the resource unless they are willing to pay for the use.
  - The owner derives the full benefit of from use of the resource, but also bears the full cost.
  - Thus, a private owner has an incentive to both use the resource wisely and conserve it for the future.





# UNDERSTANDING THE PROBLEM OF ENDANGERED SPECIES

- Watch: [Saving the Lions in Botswana](#) a TEDx talk with Mikkel Legarth
- Watch: [Enviropreneurs—Can One Person Save an Endangered Species?](#) with Laura Huggins



# UNDERSTANDING THE PROBLEM OF ENDANGERED SPECIES

- Property Rights, Incentives, and Endangered Species
  - Many countries pass laws banning the killing of endangered species or destruction of their habitat. While these seems sensible, often there are secondary effects.
  - Often these laws do not create incentives to protect the endangered species.



# UNDERSTANDING THE PROBLEM OF ENDANGERED SPECIES

- Property Rights, Incentives, and Endangered Species continued...
  - The story of the Lions in Botswana illustrate this point.
    - Before hunting lions was banned, lions and cattle farmers coexisted.
    - The farmers derived an income from the commercial hunting of lions.
    - Thus, the farmers had an incentive to protect the lions, even though lions would occasionally eat their cattle.



# UNDERSTANDING THE PROBLEM OF ENDANGERED SPECIES

- The story of the Lions in Botswana continued...
  - The incentive structure changed when the hunting of lions was banned.
  - The farmers no longer had an incentive to protect the lions. As result, the lions became “problem” animals.
  - Accordingly, the lions in the farming areas were wiped out.
- Good Intentions and Disastrous Results
  - The ban, and the effort to “protect” lions with laws, ignored incentives and lead to more lions being killed than ever before.



# UNDERSTANDING THE PROBLEM OF ENDANGERED SPECIES

- Incentives and Saving Endangered Species
  - Changes in incentives can help save endangered species. The Hank Fischer story and his role in the reintroduction of wolves in the West illustrates this point.
    - Ranchers were opposed the reintroduction of the wolves because they knew there would be some loss of their cattle to the wolves.
    - In order to overcome the opposition of the ranchers, Hank established a fund to pay ranchers that lost cattle and to pay them for allowing wolf dens on their land.



# UNDERSTANDING THE PROBLEM OF ENDANGERED SPECIES

- The Hank Fischer story continued...
  - This changed the wolf from being a liability for the ranchers, to an asset.
  - As a result of Hank and other initiatives like his, wolves are no longer on the endangered species list.
- An understanding of economics helps one understand how to protect endangered species.



# EXTERNALITIES AND THE ENVIRONMENT

- Watch: Externalities with Michael Munger



# EXTERNALITIES AND THE ENVIRONMENT

- What is an externality?
  - The uncompensated impact of a transaction between two parties on a third party.
  - This occurs because the property right of the third party is poorly defined and or enforced.
- Environmental Problems raised by externalities
  - When external costs are present, too much of the activity occurs because the parties engaging in the activity do not consider the cost imposed on the third party (or parties).
  - Externalities are the primary cause of environmental problems such as air and water pollution. These environmental problems result because it is difficult to restrict access to these commonly owned resources.





# EXTERNALITIES AND THE ENVIRONMENT

- Consider two alternative approaches
  - The imposition of a tax on the activity generating the external cost.
    - The tax will reduce the incentive of the parties to impose external costs on others. But, how large should the tax be? Nobody knows because there is no transaction that reveals the size of the external cost.



# EXTERNALITIES AND THE ENVIRONMENT

- Consider two alternative approaches continued...



- E.C. Pigou was the originator of the idea of the use of taxation to control externalities. Nonetheless, he recognized that this was an imperfect solution.
- “It is not sufficient to contrast the imperfect adjustments of unfettered enterprise with the best adjustment that economist in their studies can imagine. For we cannot expect that any state authority will attain, or even wholeheartedly seek that ideal. Such authorities are liable alike to ignorance, to sectional pressure, and to personal corruption by private interests. A loud voiced part of their constituents, if organized for votes, may easily outweigh the whole.”



# EXTERNALITIES AND THE ENVIRONMENT

- Consider two alternative approaches continued...
  - Bargaining
    - The parties can negotiate and reach a solution. This works in situations where the number of parties is small, such as in the case of apple growers and bee keepers. But, it works poorly when the number of parties are large such as in the case of auto emissions and air pollution.
- Solving externalities is difficult and there is no generalized solution.



# ECONOMICS AND PROTECTION OF THE ENVIRONMENT

- Read: [PC Oil Drilling in a Wildlife Refuge](#) by Pamela S. Snyder and Jane S. Shaw
- Read: [How to Be a Good Steward of Energy and the Environment](#) by Jay Richards



# ECONOMICS AND PROTECTION OF THE ENVIRONMENT

- Property Rights, Resource Use, and the Protection of the Environment
  - Private property rights provide owners with a strong incentive to protect valuable resources, including wildlife. The story of the Audubon society and the Rainey Wildlife Sanctuary illustrate this point.
    - The Audubon society has allowed the extraction of oil and natural gas at the Rainey Sanctuary since the 1940s. Why would a group, dedicated to the preservation of wildlife, allow drilling in a sanctuary?
      - Because the Audubon Society was the owner, it confronted the opportunity cost of failing to drill for and extract the oil.
      - As a result, the Audubon Society had an incentive to both extract the resources and protect the wildlife sanctuary.



# ECONOMICS AND PROTECTION OF THE ENVIRONMENT

- Property Rights, Resource Use, and the Protection of the Environment
  - The Audubon story continued...
    - The Audubon Society chose to drill with drilling techniques that minimized potential damage to the natural environment and used the funds to improve the sanctuary and expand their other wildlife protection projects.
- As this story indicates, property rights provide the incentives for both wise resource use and protection of the environment.



# ECONOMICS AND PROTECTION OF THE ENVIRONMENT

## ○ Global Warming

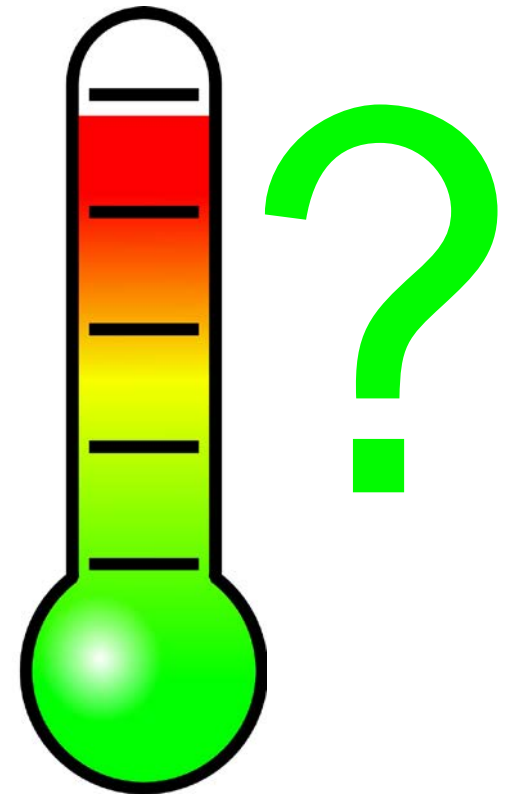
- When analyzing global warming one should ask four questions.
  1. Is the planet warming?
  2. If the planet is warming, is human activity causing it?
  3. If the warming of the planet is caused by humans, is that bad overall?
  4. If the warming of the planet is caused by humans and it is bad, would any of the policies advocated be effective?



# ECONOMICS AND PROTECTION OF THE ENVIRONMENT

## ○ Global Warming

- Question 1: Is the earth warming?
  - The earth's global temperature has both warmed and cooled depending upon which period of the earth's history one uses as a reference. Global temperatures rose during the latter part of the twentieth century. However, during the first part of this century, the warming trend has subsided.



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# ECONOMICS AND PROTECTION OF THE ENVIRONMENT

## ○ Global Warming

- Question 2: Are humans causing it?
  - Many argue that carbon dioxide emissions from the burning of fossil fuels is causing the earth's warming. In addition to fossil fuels there are other natural sources of greenhouse gas emissions. Which cause is the largest contributor may be difficult to know, but human produced emissions may be a factor.



# ECONOMICS AND PROTECTION OF THE ENVIRONMENT

## ○ Global Warming

- Question 3: Is warming bad overall?
  - This is difficult to determine. Warming is likely to adversely affect some parts of the planet by causing droughts or coastline erosion.
  - But, it is also likely to benefit other parts of the planet. The warming and increased levels of carbon dioxide will lead to longer growing seasons and higher crop yields.
  - It is not obvious, whether on balance, the net impact will be positive or negative.



# ECONOMICS AND PROTECTION OF THE ENVIRONMENT

## ○ Global Warming

- Question 4: Do our current policies help?
  - Unfortunately, current policies to reduce global warming, such as the Kyoto Protocol, would do little to prevent global warming. For example, Kyoto is estimated to reduce global temperatures by 0.07 °C by 2050, while costing trillions of dollars.
  - Moreover, the largest adverse impact of these policies will be felt by the poor. The higher energy costs that will result, will substantially increase their cost of living.



# ECONOMICS AND PROTECTION OF THE ENVIRONMENT

- What is the most sensible approach?
  - Measures of environmental quality indicate that countries with more economic freedom and higher per capita income levels have cleaner environments. This suggests that more economic freedom and higher income levels will lead to future improvements in the environment.

