



**WELCOME!**

**ECON 342**

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**ENVIRONMENTAL ECONOMICS**

**FALL 2014**

# Lecture Agenda

## 1. Syllabus

- ❖ Class webpage

## 2. About me

## 3. Introduction to environmental economics



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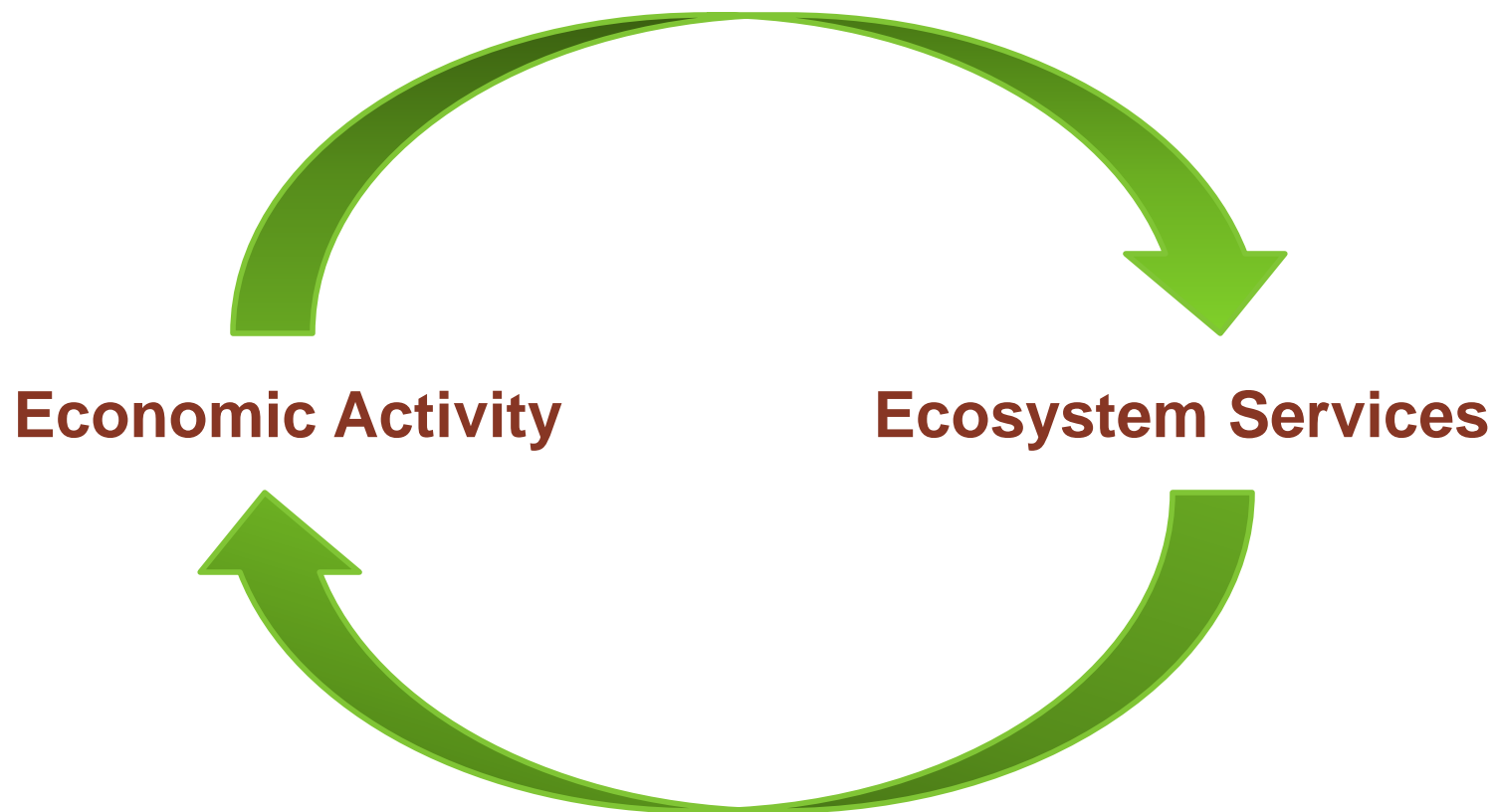
## 3. Introduction to environmental economics



Let me introduce myself...



# Research



# Invasive Species

- *Linaria vulgaris*



- Lionfish



- Emerald Ash Borer



# Climate Change

- **Energy production**



- **Carbon permits and albedo effect**



- **Health**





# Spatial Management



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# Economics *for* the Environment

- Economics can provide important insights into environmental policy
- Environmental consequences from economic activity gaining traction within society
- Structure of the course
  1. Economic insights into environmental policy
  2. Application

# National Environmental Policy Act (NEPA) of 1969

- Directs the integration of effort across agencies, executive departments, and branches of government in the U.S.
- Guides U.S. federal environmental policy
- Requires that environmental impact of public policy proposals be addressed
  - Calls for an Environmental Impact Statement (EIS) on proposals or major federal actions

# Environmental Policy Planning

- Environmental planning involves many segments of society
- In the U.S., the Environmental Protection Agency (EPA) acts as liaison to numerous constituents within each sector

# Environmental Policy Planning

## PRIVATE SECTOR

Environmentalists

Private Industry

Scientists

Economists

Labor Unions

Private Citizens

ENVIRONMENTAL  
PROTECTION  
AGENCY

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graph LR; subgraph Private_Sector [PRIVATE SECTOR]; direction TB; P1[Environmentalists]; P2[Private Industry]; P3[Scientists]; P4[Economists]; P5[Labor Unions]; P6[Private Citizens]; end; subgraph Public_Sector [PUBLIC SECTOR]; direction TB; PB1[Executive Branch]; PB2[Congress]; PB3[Judiciary]; PB4[Food and Drug Administration]; PB5[Occupational Safety and Health Administration]; PB6[Other Administrative Agencies]; PB7[State and Local Governments]; end; EPA[ENVIRONMENTAL PROTECTION AGENCY]; P1 --- EPA; P2 --- EPA; P3 --- EPA; P4 --- EPA; P5 --- EPA; P6 --- EPA; EPA --- PB1; EPA --- PB2; EPA --- PB3; EPA --- PB4; EPA --- PB5; EPA --- PB6; EPA --- PB7;
```

## PUBLIC SECTOR

Executive Branch

Congress

Judiciary

Food and Drug Administration

Occupational Safety and  
Health Administration

Other Administrative Agencies

State and Local Governments

**Source:** Based on Vaupel (1978), Figure 5-3, p. 75.

# Economics and the Environment

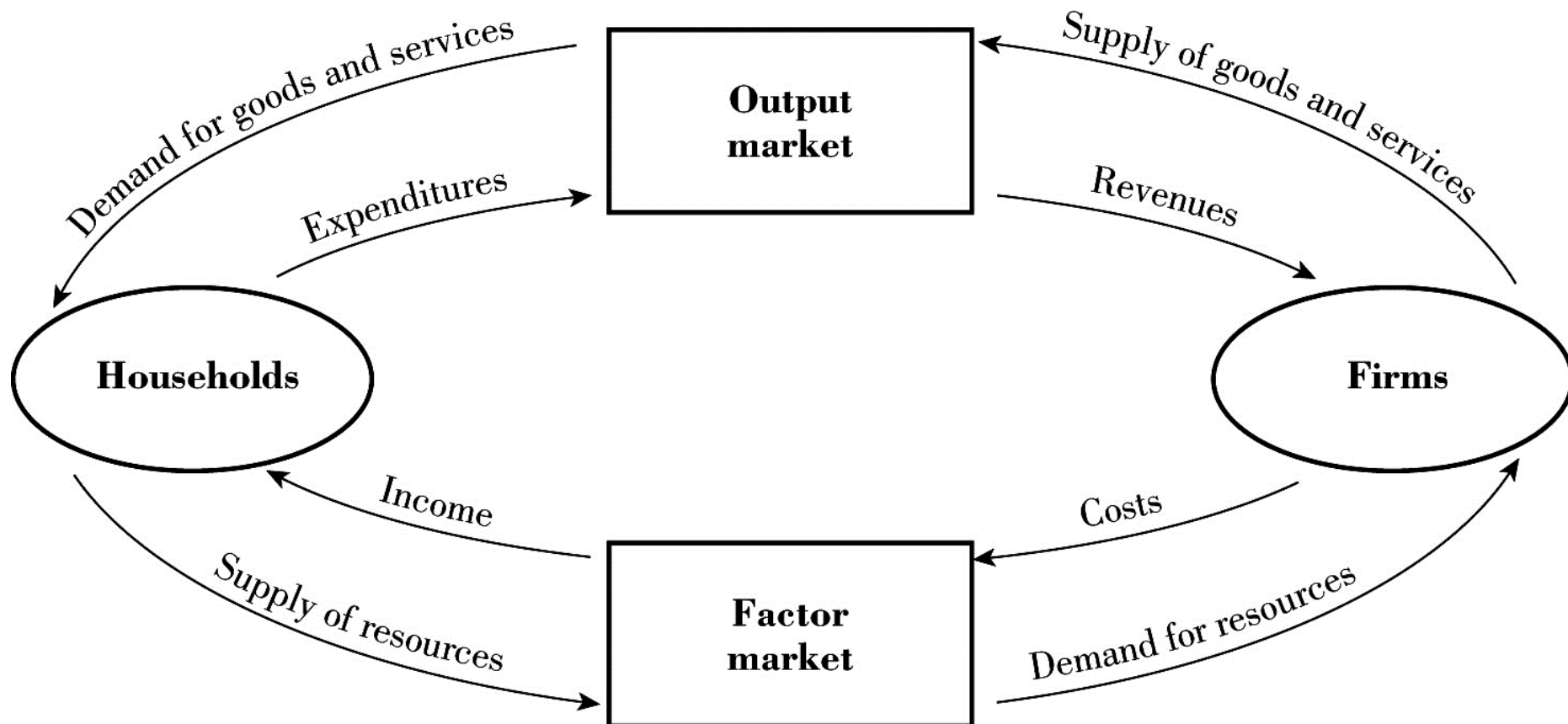
- Economic theory explains what we observe in reality, including environmental problems
- Recognize the link between economic activity and the environment using models



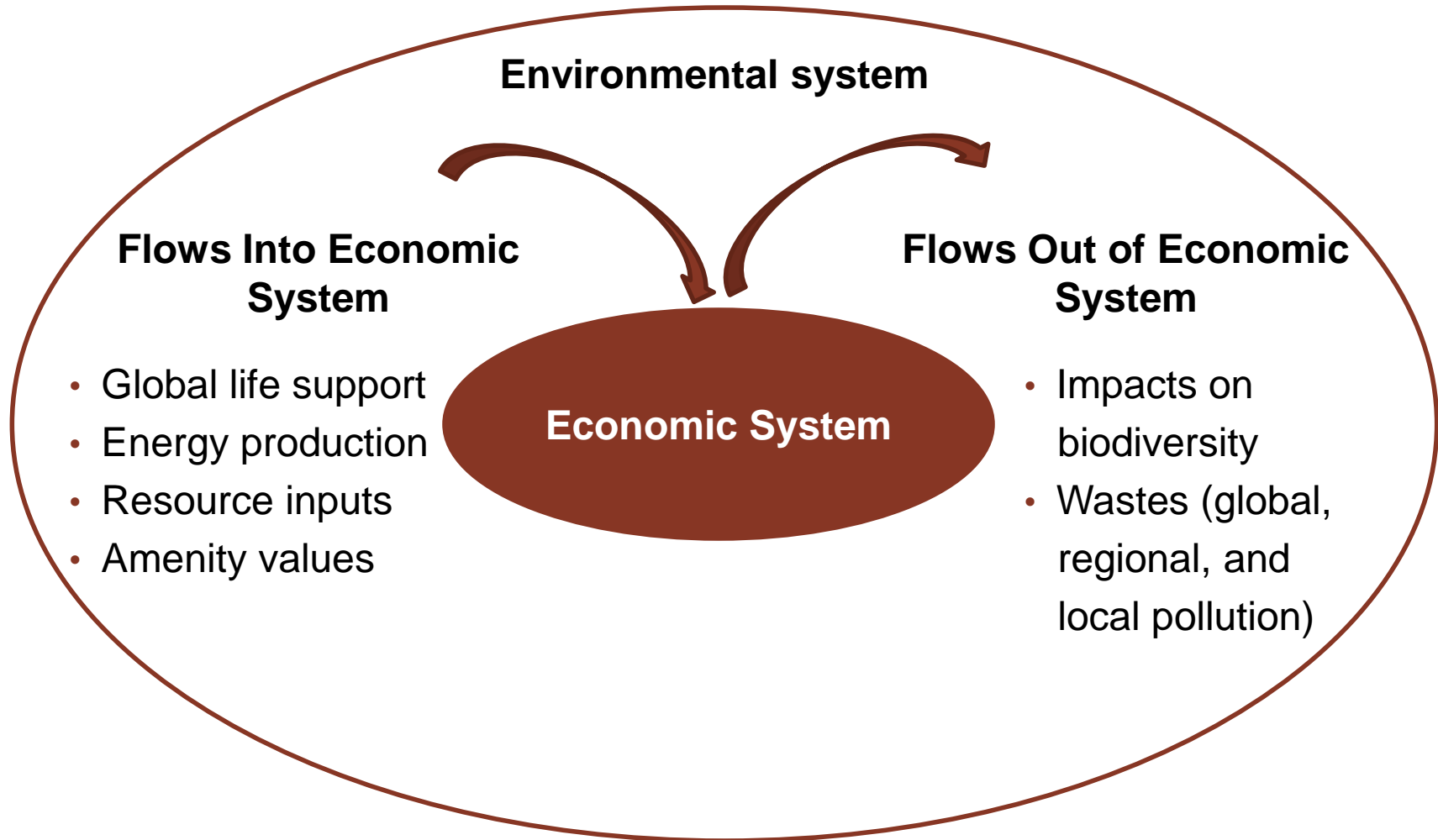
# Economic System: Circular Flow Model

- Shows the real and monetary flows of economic activity through the output and factor markets (see next slide)
  - Forms the basis for modeling the relationship between economic activity and the environment
  - But does not explicitly show the linkage between economic activity and the environment

# Economic System



# Economy-environment interactions



# Economy-environment interactions

- Additional economic **demands on** the environment can impact the service **flows from** the environment.
  - Examples
    - Waste sink versus life supporting functions (climate regulation)
    - Resource inputs versus amenity values
- Exogenous versus endogenous impacts

# Class objectives

- 1. Create a better understanding of the feedback loops between economic and environmental systems.
- 2. Behavioral underpinnings matter for economic policy.
  - Environmental resources are scarce and using them results in an opportunity cost.
- 3. Free market system can result in 'wrong' level of environmental quality.
  - Market failures
  - Government interactions
  - However, markets can be a solution.
- 4. Economic growth gives rise to a series of environmental consequences that have to be dealt with.