TEACHER'S GUIDE
P. 135 Defined
P. 136 Content standards
P. 137 Materials
P. 137 Procedure
P. 140 Lesson outline
P. 142 Closure
P. 143 Assessment
P. 143 Overheads

VISUALS
Visuals for overhead projector.
Copy to transparent paper for overhead.

P. 148 Visual-1: Opportunity cost defined
P. 149 Visual-2A: Incentives
P. 150 Visual-2B: Incentives matter
P. 151 Visual-3: Ownership
P. 152 Visual-4: Ben Cone
P. 153 Visual-5: Conservation incentives

LESSONS
Copy and handout to students.

P. 156 Lesson-IA: Endangered Species Act
P. 159 Lesson-IB: The tree farmer
P. 160 Lesson-IC: Woodpecker pals
P. 161 Lesson-II no materials needed
P. 161 Additional Reading: Environmental overregulation
P. 163 Lesson assessment
The opportunity cost of any action is the value of the next best alternative given up. But how do we decide which is the best alternative? What motivates us to do things? Incentives. An incentive is something that induces us into action.

Would you mow your neighbors’ lawn for two dollars or four dollars? Or, would it take more than ten dollars? What would motivate you to mow your neighbors’ lawn? The incentives provided will determine whether you will, or will not, mow the lawn. These incentives could be financial, $20 to mow the lot, or they could be intrinsic, helping an elderly neighbor. Suppose your school is having a campus clean-up this Friday. What would it take to get you and your family to come help pick up litter from around the school grounds? What would it take to get the students to help? Would a free lunch for helpers motivate students to become trash collectors? Would it motivate you?

Assume for a moment that your school has an open attendance policy; students can come to class if they wish but attendance is not required. If you tell your students that grades will be given based solely on the final exam with all questions taken from the text, do you expect to have a high rate of attendance? If grades are based solely on attendance and participation instead, do you expect to see more students in class? Why?

Incentives can change behavior. They can be in the form of a reward or a punishment. Receiving a good grade in class for attending regularly is a reward. Buying a child ice cream for being good at the dentist’s office is a reward. Earning high wages is a reward for being good at producing something others desire.

While rewards can encourage certain behavior, punishment can deter it. A poor grade given for shoddy class work and a child placed in time out for being naughty are both punishments that motivate people to act in different ways. The death penalty is a punishment for intentionally taking the life of another individual. Like it or not, threats of severe punishment influence the way people act. Fines for speeding are a punishment that encourage people to obey the legally set speed limit. We don’t get paid or rewarded for driving at or below the speed limit but punished for going beyond it.

Incentives can modify behavior in predictable ways. When people are punished for doing a certain action, whether by law, cultural norms, or through fines, they are likely to do less of that activity.
When rewarded, they are likely to do more of it.

It is important to keep in mind, however, that **incentives** may have some consequences that were not anticipated. These are called **unintended consequences**. Recall the Friday campus clean up. Do you know any faculty, staff, or students that may call in sick on Friday morning? Knowing that it is a day to clean up may encourage some school members not to show up. School members not showing up is an **unintended consequence**.

**CONCEPTS**

1. Opportunity cost
2. Incentives
3. Unintended consequences

**OBJECTIVES**

1. Know the meaning of opportunity cost.
2. Understand that incentives matter.
3. Realize that even well-intended actions may have unintended consequences.

**CONTENT STANDARDS**

**NATIONAL CONTENT STANDARDS IN ECONOMICS**

1. (Standard-1) Productive resources are limited. Therefore, people cannot have all the goods and services they want; as a result, they must choose some things and give up others.
2. (Standard-2) Effective decision making requires comparing the additional costs of alternatives with the additional benefits.
3. (Standard-3) People must choose which methods to use to allocate different kinds of goods and services.

**MONTANA SOCIAL STUDIES CONTENT. (STANDARD 5)**

1. (Benchmark-1) Identify and explain basic economic concepts and analyze the impact of them.

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2. (Benchmark-2) Apply economic concepts to explain historical events, current situations, and social issues.
3. (Benchmark-3) Assess the costs and benefits to society of allocating goods and services through private and public sectors.
4. (Benchmark-4) Describe how personal points of view affect economic decisions.

**TIME REQUIRED**
1-2 class periods (or more)

**MATERIALS**
Overhead projector
Transparency pen
Visuals for overhead projector: Copy to transparency.
- Visual-1: Opportunity cost defined
- Visual-2A: Incentives
- Visual-2B: Incentives matter
- Visual-3: Ownership
- Visual-4: Ben Cone
- Visual-5: Conservation incentives
Lesson worksheets: Copy for each student.
- Lesson-IA: Endangered Species Act
- Lesson-IB: The tree farmer
- Lesson-IC: Woodpecker pals
- Lesson-II no materials needed
- Additional Reading: Environmental overregulation
- Lesson assessment

**PROCEDURE**
1. Review the concept opportunity cost: The value of the next best alternative given up. Display Visual-1: Opportunity cost defined (this is the same as in Module-2). Remind the students that by choosing to do one activity they give up the opportunity to do other things. Remind them that when the consequences of one activity changes, the activity chosen may also change. Recall the activity in Module-2 and students’ changing attitudes about evening study.
given an exam, or no exam, the following day.

2. Now introduce the concept of incentives. Display Visual-2A: Incentives. Discuss with the students how behavior can be altered through the use of reward and punishment. Display Visual-2B: Incentives matter. Explain to students that our actions are influenced by the incentives that exist. We tend to do more of what we are rewarded for and less of what is punished.

3. Go over the attendance example with students. Ask students, if attendance were open, and they were free to attend school as they wished, who would be attending today. Work with them to understand that attendance depends upon the incentives provided. If grades and graduation are not dependent upon attendance, many students will not attend every day. Remind them that in college attendance is not always required. While some college students have perfect attendance in their classes, others have poor attendance. The variation is the result of the incentives provided and students’ opportunity costs. A class in which grades are dependent upon participation and in-class discussion is likely to encourage better attendance rates than a class with grades based on one or two exams that are derived from the textbook. Incentives matter. Attendance will also be influenced by other types of opportunity cost. If a student can earn $100 during the same hour as class, time spent working may be more highly valued than time spent in class. The $100 is an opportunity cost, it is also an incentive to do something else.

4. Refer back to Module-1: Scarcity Lesson-III: The Gift of Life. Question: Why don’t more people donate their organs? Discuss these ideas again with the class. Remind them that in the exercise two alternatives were examined to motivate people to donate organs. One article discussed putting a price on organs, an action considered unethical to some people. The other, Lifesharers, is trying to motivate people to donate their organs by ensuring them that they will be among the first to receive them in the case that they themselves need an organ transplant. Both methods change the incentives to increase organ donations. At present in the United States, donating organs is an altruistic activity. It may make you
feel good to offer your organs in the case of an untimely death, but there is little other reward to yourself or family. The lack of organ donations is an unintended consequence of the zero price on organs. Have the class think about the likely consequences of a price paid for organs.


*Question:* Ask students which column has the animals with the largest populations. The animals in the other column are more scarce. Remind students that something is scarce when the desire for it is greater than its availability. Discuss why the animals in one column may be scarcer than the animals in the other. All the animals in column A can be owned, they are domesticated. The animals in column B are wild animals. While living in the wild these animals cannot be owned. Having clear ownership changes the incentives. There is a reward for raising dogs, horses, cows, and chickens. They can be kept as pets for personal benefit or sold for financial revenue. These rewards from ownership motivate people to raise domesticated animals. As the price of beef goes up, more cattle are raised.

6. Raising wild animals can be more difficult. First, it is hard to pen in wild animals, especially large ones and those that can fly. Their habitat often reaches beyond a single land owner’s property line. Second, in the United States and many other countries, it is illegal to own wild animals until they are dead, and there are regulations on killing them. As a result, there is little incentive for most people to raise wild animals or spend their resources to help keep them alive. As the price of ivory goes up, the number of elephants declines.

7. The consequence of the reward for raising domesticated animals and the lack of a reward for raising wild ones is that more domesticated animals are raised by private individuals than wild animals. Of course, some wild animals fair very well in a human adjusted environment. Ranches, for example, provide great feed for deer, elk, and antelope. As a result, more deer and elk frequently feed on ranch forage than a rancher may like, though it may please hunters. This external benefit (the ranchers provision of feed for game animals
that enhances the hunting opportunity for other individuals) will be the story of another module. To summarize the point, if individuals realize a benefit that is at least as large as the costs, there is an incentive to provide more of the good or service, animals included. If provision of the good or service does not return an equal or greater benefit, the good or service will not be provided.

8. Another way to look at the incentives provided from ownership is to think about how you treat items that you own and do not own. Does your school loan anything, like textbooks, to students? How do students treat them? What incentives are provided to students to take care of the items on loan? Berry College in Georgia learned the hard way about the incentives of ownership. The Berry College student council decided to use student fees to provide bikes for the free use of all students. “At first it was great,” claimed one member of the student body. The bikes were left around campus for the use of any student as long as they remained on campus. After a week or two some of the bikes no longer worked. Over time only a few worked. And after a month, some of the bikes were found hanging from trees. Though students paid for the bikes through their fees, they had no individual ownership in the bikes. Because any student was free to use the bikes there was little incentive for one individual to take great care of a bike when another student could come along and ride it carelessly. After two failed attempts at providing free use of the bikes, Berry College now rents the bikes to students. Now the student council has recourse for any damage done or loss incurred by a single individual, the renter, and the bikes are better cared for.

LESSON OUTLINE:

LESSON-I: THE ENDANGERED SPECIES ACT

MATERIALS:
- Lesson-IA: Endangered Species Act
- Lesson-IB: ESA the tree farmer
- Lesson-IC: ESA woodpecker pals
- Visual-4: Ben Cone
Handout Lesson-IA: Endangered Species Act. Have students read the article. Briefly discuss the implications of the Endangered Species Act. You may want to read the additional resources article, Environmental Overregulation, at the end of this module, and add some of the stories to your discussion. Split the class into two (or four) groups and appoint a reporter for each. Half of the class will be land owners. They are tree farmers in North Carolina. Their ultimate goal is to make a profit. Emphasize this goal to them. Have them read Lesson-IB: ESA tree farmer. The other half of the class will be advocates for the red cockaded woodpecker. These individuals are worried about the demise of the woodpecker and are trying to protect the species at a low cost to themselves. Remind them, as volunteers, they have limited resources to use for woodpecker protection. Have this half of the class read the description: Lesson-IC: ESA woodpecker pals. Give each group five to ten minutes to discuss their options. Each group is to come up with a plan of action that will best achieve their stated goal. Again emphasize the goal of each group.

When a plant or animal has been listed under the Endangered Species Act (ESA) in the United States, the Fish and Wildlife Service is supposed to protect that species. Though well intended, this also means that the agency can restrict the rights of landowners that provide habitat for endangered species. A forest or tree farm owner, for example, that provides habitat for the northern spotted owl or red cockaded woodpecker, both listed under ESA, may lose the rights to harvest timber or do other activities on the land. To these landowners the species is a liability, not an asset. The landowner now has the incentive to discourage the creation of habitat for these species. The unintended consequences of the ESA are to discourage landowners from enhancing habitat for species in peril. These species could be better protected by rewarding landowners than punishing them for providing wildlife habitat.

Once students have had time to work in their groups, bring them back together. Have the reporters relay how their group responded to the incentives and what they plan to do to meet their goal. Display Visual-4: Ben Cone. The story of Ben Cone is real. Cone was prohibited from removing timber on 22 percent of his land because it was home to 29 Red Cockaded Woodpeckers.
Cone was forced to pay all expenses, including paying the biologist to survey his land for woodpeckers, without compensation. As a result, he changed the way he managed his land. Discuss the incentives the Endangered Species Act (ESA) provides for landowners like Ben Cone. Other analysis shows that Cone is not alone in his response to the restrictions on his land (see Lueck, Dean and Michael, Jeffrey A., “Preemptive Habitat Destruction Under the Endangered Species Act (ESA),” April 2000. www.ssrn.com/abstract=223871 for more evidence).

Understanding the unintended consequences from the Endangered Species Act (ESA), work with students to create some better incentives to protect species and habitat on private land. Have students shift back into their role play and think about what incentives may encourage habitat protection. There have been many proposals to reform the Endangered Species Act (ESA) over the past 30 years and some policy changes. Have students examine some of the proposals and policies. Have them think about the incentives provided. Visual-5: Conservation incentives lists a few of the new policies that aim to change the incentives of private land managers that provide habitat for threatened and endangered species. Briefly discuss some of these options. Other policies, such as Habitat Conservation Plans assist landowners after restrictions have been made, but provided little compensation before the new incentives.

**LESSON-II: CONSERVATION INCENTIVES**

Have students pick a conservation policy and analyze the incentives provided. Does the policy encourage landowners to provide more or less habitat? Are there any secondary consequences of the policy? Do landowners perceive species to be a liability or an asset? This is a great opportunity to have students write individual reports, have them give a presentation, or set up a debate.

**CLOSURE**

**LESSON REVIEW**

1. ✽ **Question:** What is opportunity cost?
Answer: The value of the best alternative.

2. Display Visual-1: Opportunity cost defined, and review the definition of opportunity cost.

   Question: Ask students why it is important to understand incentives.
   Answer: Incentives change people’s behavior. To understand why people act the way they do, we need to look at the incentives provided.

4. Question: How are opportunity cost and incentives related?
   Answer: When incentives change, opportunity cost may also change.

ASSESSMENT

MULTIPLE-CHOICE QUESTIONS

1. Question: What is opportunity cost?
   a. The money paid for a valuable opportunity.
   b. Irrelevant for most choices people make.
   c. The highest valued alternative foregone when a choice is made.
   d. The interest earned on investment.

2. Question: Why is it important to understand incentives?
   a. This is not an important part of economics.
   b. They always affect behavior as intended.
   c. They affect the way we behave.
   d. They force us to make choices we would rather not make.

3. Question: Why is it important in economics to understand incentives?
   a. Incentives provide a benefit to one person at a cost to another.
   b. Incentives affect people’s behavior.
   c. Incentive is another word for a reward.
   d. Incentives are always negative.
4. **Question:** Which of the following policy actions is most likely to encourage a farmer to protect a species?
   a. Listing the species under the Endangered Species Act.
   b. Paying the farmer compensation for protecting the species.
   c. Telling the farmer he is not allowed to farm within a mile radius of the species.
   d. Having government take over the land where the species has been found.

5. **Question:** Why are there more chickens than bald eagles?
   a. People can own chickens and can benefit from that ownership.
   b. People can sell bald eagles for profit.
   c. People are only willing to protect bald eagles if they are paid for their efforts.
   d. People cannot have ownership rights on chickens.

**Answers:**
1. c.
2. c.
3. b
4. b.
5. a

**Discussion/Essay Questions**

1. **Question:** When the local community had a clean the river day they provided hats and T-shirts for everybody that helped. Johnny thought this was great and wears his T-shirt daily. Janey decided not to help. Why would Johnny and Janey respond differently given the same incentives?
   
   **Answer:** Johnny and Janey may feel differently about the river and have different uses for it. They may also have a different value for the T-shirt and hat. Janey did not go because she had a higher opportunity cost to do something else. That is, she valued a different activity more than helping clean the river, even considering the T-shirt and hat.
2. **Question:** Why are we likely to see an increase in the number of cattle when the price of cattle goes up and a decrease in the number of African rhinoceros when the price of rhinoceros horn goes up?

**Answer:** People can own cattle. There is incentive to raise more cattle when the price increases because they can be sold and revenues can be earned to help pay for the investment. In most cases people cannot own rhinoceros. People therefore do not have much incentive to invest in raising rhinoceros because the benefits may be accrued by someone else.
NOTES
ICENTIVES MATTER

OVERHEAD VISUALS

\[ 5x + 50 + 250 + x = 25 \]
VISUAL-1: OPPORTUNITY COST DEFINED

OPPORTUNITY COST: THE VALUE OF THE NEXT BEST ALTERNATIVE GIVEN UP
INCENTIVES MATTER

Opportunity cost revisited

Module-5
Visual

VISUAL-2A: INCENTIVE

INCENTIVE:
Something that induces someone to act in a certain way.
INCENTIVES MATTER

They change the way that people behave.
INCENTIVES MATTER

MODERN OPPORTUNITY COST

VISUAL-3: OWNERSHIP

PIG
DOG
CAT
HORSE
CHICKEN
COW
RED WOODPECKER
SPOTTED OWL
BLACK RHINO
GRIZZLY BEAR
Bald EAGLE
TIGER

COLUMN A
COLUMN B
**INCENTIVES MATTER**

**OPPORTUNITY COST REVISITED**

**VISUAL-4: BEN CONE**

**WHO:**
Ben Cone, a tree farmer and wildlife advocate

**WHERE:**
Cone’s 7,200 acre forest in North Carolina

**WHEN:**
1990s

**WHAT:**
Cone was prevented from harvesting 1,560 acres of his forest because it was home to 29 red-cockaded woodpeckers. A habitat intentionally created to encourage flourishing wildlife by growing trees to 80 years of age and creating small harvests to mimic natural processes.

**WHY:**
The red-cockaded woodpecker is listed under the Endangered Species Act. The act allows the U.S. Fish and Wildlife Service to prohibit activity on land that may harm a listed species.

**RESULT:**
Cone’s land value declined by $2 million. Cone now harvests more trees at a younger age, about 40 years old, to discourage red-cockaded woodpeckers from colonizing on his land.

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NEW INCENTIVES UNDER THE ENDANGERED SPECIES ACT:

1. Partners for Fish and Wildlife
2. Conservation Banking
3. Landowner Incentive Programs
4. Private Stewardship Grant Program
5. Wildlife Habitat Incentive Program
Lessons Worksheets

INCENTIVES MATTER
LESSON-IA: The Endangered Species Act

THE ENDANGERED SPECIES ACT

The Endangered Species Act (ESA) of 1973 [Section 1] protects plants and animals that are listed by the federal government as “endangered” or “threatened.” Two sections, [Section 7, Section 9], are central.

[Section 9] makes it unlawful for anyone to “take” a listed animal, and this includes significantly modifying its habitat. [Section 3] This applies to private parties and private land; a landowner is not allowed to harm an endangered animal or its habitat on his property.

[Section 7] applies not to private parties but to federal agencies, but it covers their issuing permits for private activities, such as 404 permits issued by the Corps of Engineers to people who want to do construction work in waters or wetlands. Specifically, [Section 7] imposes an affirmative duty on federal agencies to ensure that their actions (including permitting) are not likely to jeopardize the continued existence of a listed species (plant or animal) or result in the destruction or modification of critical habitat. See 50 C.F.R. § 402.01 (a). Both [Section 7 and Section 9] allow “incidental” takes, but only with a permit.

The ESA has so much potential to affect private property that it provokes heated debate and, sometimes, alarming newspaper headlines. Three cases in particular have become famous. The first was the Tellico Dam, which was begun before the ESA was enacted in 1973. The project came to a halt when the Secretary of the Interior declared a small fish called the snail darter to be endangered. Its habitat was thought to be limited to the part of the Little Tennessee River that was to be inundated by the reservoir behind the dam. The case reached the Supreme Court, which concluded that the ESA required it to stop construction of the dam, even though $53 million had already been spent. Tennessee Valley Authority vs. Hill, 437 U.S. 153 (1978). Eventually Congress directed that the Tellico Dam be completed, and President Carter declined to veto the
bill. Meanwhile, populations of the snail darter had been transplanted to other nearby rivers, and evidence of other natural populations of them had been discovered as well. The snail darter was upgraded to merely “threatened” in 1984.

The second famous case was the 1990 listing of the northern spotted owl as endangered, with the result that millions of acres of Pacific Northwest forests became protected habitat. See Robertson vs. Seattle Audubon Society, 503 U.S. 429 (1992). The timber industry was alarmed at the loss of millions of acres of timberlands, labor unions worried about the loss of jobs, and home building and real estate interests argued that there would be even wider economic harm. President Bush, campaigning for his second term as President, said “[i]t is time to make people more important than owls.”

The third case was that of an immigrant who found that his farm near Bakersfield, California, was listed as habitat for the Tipton kangaroo rat and could not, for that reason, be plowed. He plowed anyway and was jailed, reportedly, for five months. In a related story, it was reported that restrictions on clearing brush in rat habitat had prevented firefighters from plowing a firebreak, causing more than a dozen houses to burn. The facts about these cases, however, were disputed, and it is hard to know where the truth lies.

The ESA retains its power to alarm people and business interests, especially when the economic costs are high and the species unglamorous. The statute, after all, protects insects such as the Delhi sands flower-loving fly and Hungerford’s crawling water beetle as well as the bald eagle and grizzly bear. In August 1999 Colton, California, made the news because the Delhi sands flower-loving fly was interfering with plans to develop an industrial park. Although the law contains some provisions for considering the economic cost of protecting plants and animals, congress wrote the most important ESA provisions in sweeping and near absolute terms. In the Tellico Dam case, the Supreme Court said that Congress had intended endangered species to be afforded the highest of priorities. 437 U.S. at 169.
LESSON-IA: The Endangered Species Act

LESSON-1B: ESA tree farmers

TREE FARMERS

You are a tree farmer in North Carolina. You have about 100,000 acres on which you grow Southern Pine. You harvest trees on a rotational basis ensuring that you will always have some standing trees of varied age. This enables you to harvest some trees, usually 75 to 80 years old, each year from which you can generate a profit. You could harvest your trees at a younger age. The timber would be worth slightly less, but importantly, it would also decrease the diversity of wildlife you care for.

You are a wildlife advocate. You have become a very good land steward and clear-cut only small acreages each year to simulate the effect of small intense fires while also making a living. The openings create an edge for wildlife, providing them both forage and cover. Your land has become very attractive to wild turkey, quail, and deer. You have won conservation awards for your stewardship. You have done such a good job managing your old growth pines that the Fish and Wildlife Service recently found a red cockaded woodpecker colony on your land. The red cockaded woodpecker prefers trees that are 75 to 120 years old. It excavates cavities in living pine trees. The older trees often have a soft core allowing the birds to more easily carve out their home. The bird requires large home ranges of up to 500 acres per colony.

If you continue to manage your timber on a 75 to 80 year rotation, you will likely encourage more woodpeckers to make your forest their home. Nobody is paying you to protect wildlife habitat, and you make your living by cutting some trees each year. If the woodpeckers take over, your livelihood will be lost.

**QUESTION:**

What will you do to ensure your future livelihood?
LESSON-1C: ESA Woodpecker pals

WOODPECKER PAL

The red cockaded woodpecker has been on the endangered species list since 1970. Though recovery efforts continue, there are only about 10,000 birds living today. The bird population has declined as a result of habitat loss and the removal of many old growth southern pine forests. This small bird, about seven inches long has black and white strips, with a black cap that encircles white cheek patches. The male has a red streak on each side of the black cap, its namesake.

In order for the birds to survive, more habitat must be protected. The red cockaded woodpecker prefers southern pine trees that are 75 to 120 years old. It excavates cavities in living pine trees. The older trees often have a soft core allowing the birds to more easily carve out their home. The birds have been found in managed forests, where undergrowth has been cleared allowing trees to grow at a faster rate. The bird requires large home ranges of up to 500 acres per colony.

The red cockaded woodpecker feeds primarily on wood-boring insects, beetles, wood roaches, ants, centipedes, caterpillars, and spiders; occasionally the adults will be observed feeding on blueberry, sweet bay berries, and poison ivy.

Recently, the birds have been found on private land where trees are managed for timber. Your group consists of bird watchers and others interested in the survival of the red cockaded woodpecker. Under the Endangered Species Act you can have habitat protected. The law prohibits the harvest of timber on public or private land within ½ mile radius of any found nesting site.

Your goal is to protect the habitat of the birds to ensure their long term survival. Knowing that there is a nearby landowner with at least one known nesting site and other potential habitat, what are you going to do to achieve your goal?

QUESTION:

Your goal is to protect the habitat of the birds to ensure their long term survival. Knowing that there is a nearby landowner with at least one known nesting site and other potential habitat, what are you going to do to achieve your goal?

Southern Pines Ecosystem project: Red cockaded woodpecker. Available online at www.sagecouncil.com/woodpecker.html. (cited 9/2/05)
My first reaction if I spotted a red cockaded woodpecker in our yard would probably be to fill the bird feeder and toss around some bread. If I saw him twice, I’d most likely buy another birdhouse, with a hole fitted to woodpeckers. The last thing I’d do is run for my gun, or cut down the tree. But that’s exactly what people are doing, thanks to the pro-bird bureaucrats in the federal government.

In their study of red cockaded woodpeckers in North Carolina, “Preemptive Habitat Destruction Under the Endangered Species Act,” economists Dean Lueck, at Montana State University, and Jeffrey A. Michael, at North Carolina University, show that landowners have “preemptively destroyed” the habitats of endangered species in order to avoid potential land-use regulations prescribed under the Endangered Species Act.

"Under the ESA it is not only illegal to kill an endangered species, but it is also illegal to damage their habitat," explain Lueck and Michael. "By preventing the establishment of an old-growth pine stand, landowners can ensure that red cockaded woodpeckers do not inhabit their land and avoid ESA regulations that limit or prohibit timber harvest activity."

Checking data on timber harvesting for 16 years in more than 1,000 individual forests, the professors found that "increases in the proximity of a plot to red cockaded woodpeckers increases the probability that the plot will be harvested and decreases the age at which the forest is harvested."

It’s best to cut down the trees, in short, if a woodpecker is spotted anywhere nearby. It’s sort of like neighbors not wanting a new pool hall to open in a nearby storefront, lest it attract the wrong characters. In this case, it’s old-growth trees that might attract the wrong thing, a bird in allegedly short supply accompanied by its allies from a heavy-handed regulatory system.

T.R. Mader, research director at the Abundant Wildlife Society of North America, provides a specific example: “An elderly couple in Georgia, needing money for medical expenses, sought to sell timber on their private land only to be stopped by a bird, the red cockaded woodpecker. No, the bird doesn’t live on their land, but U.S. Fish and Wildlife Service (FWS) and the Georgia Forestry Commission officials reportedly found 17 trees with ‘possible’ abandoned red cockaded woodpecker nests. The family has lived there for 80 years. Nobody, including the FWS, has ever seen this woodpecker on the property.” Still, no birds, no timber harvesting, no money...
for medical expenses.

The conclusion by Lueck and Michael? “The Endangered Species Act actually reduces the amount of endangered species habitat.”

It’s the same with mice. A study published last December in *Conservation Biology* examined the reaction of private landowners to the listing under the Endangered Species Act of the preble’s meadow jumping mouse as “threatened.” More than 30,000 acres in Colorado and Wyoming are listed as “critical habitat” for the mouse, meaning mandatory set-asides and restricted building options for landowners. What the study found was that landowners, once a species is listed, are more likely to destroy needed habitat than they are to adopt conservation measures.

More is being destroyed, unfortunately, than wildlife habitat:

In California, people have seen their homes burn to the ground because they weren’t permitted to create a fire-wall by plowing under brush on their own property, brush that was officially designated as “critical habitat” for kangaroo rats.

In New York, a court, citing endangered species law, ruled that property owners couldn’t install a short snake-proof fence to prevent rattlers from freely traversing their land.

In Washington state, four firefighters died in an out-of-control fire in the Okanogan National Forest after repeated requests to obtain water from a river containing “endangered” fish were denied by the U.S. Forest Service.

Robert J. Smith, director of environmental studies at the Cato Institute, provides the lesson that the government is teaching: “Make sure there is nothing on your land that might attract wildlife or rare species. It will merely bring oppressive attention from federal bureaucrats.” The solution that people have come up with when they spot something that’s allegedly endangered on their property? It’s called “shoot, shovel, and shut up.”

The government’s answer, in short, has backfired. What started out as a goal of protecting bald eagles and grizzlies has turned into a bureaucracy that now puts rats and bugs ahead of property rights and the lives of firefighters.

**References**


Ralph R. Reiland is the B. Kenneth Simon Professor of Free Enterprise at Robert Morris University and a columnist at the Pittsburgh Tribune-Review.
MULTIPLE-CHOICE QUESTIONS

1. **Question**: Opportunity cost is:
   a. The money paid for a valuable opportunity.
   b. Irrelevant for most choices people make.
   c. The highest valued alternative foregone when a choice is made.
   d. The interest earned on investment.

2. **Question**: It is important to understand incentives because:
   a. This is not an important part of economics.
   b. They always affect behavior as intended.
   c. They affect the way we behave.
   d. They force us to make choices we would rather not make.

3. **Question**: Why is it important in economics to understand incentives?
   a. Incentives provide a benefit to one person at a cost to another.
   b. Incentives affect people’s behavior.
   c. Incentive is another word for a reward.
   d. Incentives are always negative.

4. **Question**: Which of the following policy actions is most likely to encourage a farmer to protect a species?
   a. Listing the species under the Endangered Species Act.
   b. Paying the farmer compensation for protecting the species.
   c. Telling the farmer he is not allowed to farm within a mile radius of the species.
   d. Having government take over the land where the species has been found.

5. **Question**: Why are there more chickens than bald eagles?
   a. People can own chickens and can benefit from that ownership.
   b. People can sell bald eagles for profit.
   c. People are only willing to protect bald eagles if they are paid for their efforts.
   d. People cannot have ownership rights on chickens.
Lesson Assessment

Discussion/Essay Questions

1. **Question**: When the local community had a Clean the River Day they provided hats and T-shirts for everybody that helped. Johnny thought this was great and wears his T-shirt daily. Janey decided not to help. Why would Johnny and Janey respond differently given the same incentives?

2. **Question**: Why are we likely to see an increase in the number of cattle when the price of cattle goes up and a decrease in the number of African rhinoceros when the price of rhinoceros horn goes up?