

Ecosystem Services - The Benefits We Get from Nature Comprehension Questions

We know that ecosystems like the Everglades provide numerous benefits to the economy and our quality of life. One way to think about these benefits is to conceptualize them as “services” that ecosystems provide.

Ecosystems provide us with “natural capital” whose value is far greater than one might expect. In fact, economists estimated the worldwide value of ecosystem services at a staggering \$125 trillion in 2011

Directions: Learn more about how economists place monetary value on ecosystem services by reading *The Benefits We Get from Nature* ([attached below](#)), and answering the reading comprehension questions ([attached below](#)).

Everglades Literacy Lesson Connections:

Grade 7 Lesson 1: Discovering what wetlands do

<https://www.evergladesliteracy.org/seventh-grade>

-Through building a wetland model, students will learn how wetlands in the Everglades function and why it is important to protect them. Students will then associate objects as metaphors for the natural functions of wetlands.

Grade 8 Lesson 2: Threats to the Everglades

<https://www.evergladesliteracy.org/eighth-grade>

-Students will evaluate different benefits (ecosystem services) that the Everglades provides to humans. They will learn about six different threats that impact the Everglades ecosystem and humans, and design a poster for each threat.

ECOSYSTEM SERVICES

The Benefits We Get from Nature

By Andrew Stainback, Ph.D.

Since the days of ancient Greece, we have recognized the detrimental impact humans can have on nature. Commenting on the economic value of soil lost to deforestation 2,400 years ago, Plato wrote: “The land was the best in the world, [but now] all the richer and softer parts of the soil having fallen away, the mere skeleton of the land is left.”

Today, we can go well beyond Plato and put a value on nature’s benefits in a way everyone can understand: dollars and cents. In the last two decades, this novel way of understanding a vital aspect of the relationship between nature and people has become widely accepted.

UNDERSTANDING THE “ECOSYSTEM SERVICE” CONCEPT

We know that ecosystems like the Everglades provide numerous benefits to the economy and our quality of life. One way to think about these benefits is to conceptualize them as “services” that ecosystems provide. It is relatively easy to place a value on some services, such as food, timber, medicine, and recreational activities, because they can be bought and sold in markets.

However, other ecosystem services, such as flood protection, climate regulation, and natural habitats, are typically provided to us by nature “free of charge,” making it more difficult to determine their economic value. For example, wetlands provide a natural habitat for juvenile fish and they filter water. These functions are



Outdoor recreation at Alligator Reef in the Florida Keys. Photo by Luis Garcia, John Marshall Everglades intern

then transformed into commercially and recreationally valuable fish and clean water for household use.

In other words, ecosystems provide us with “natural capital” whose value is far greater than one might expect. In fact, economists estimated the worldwide value of ecosystem services at a staggering \$125 trillion in 2011 – far more than worldwide GNP of nearly \$79 trillion.

But perhaps a more important issue in terms of the Everglades is how much of that value is lost when an algae bloom occurs, a surface flow of water is diminished or a wetland area is commercially developed.

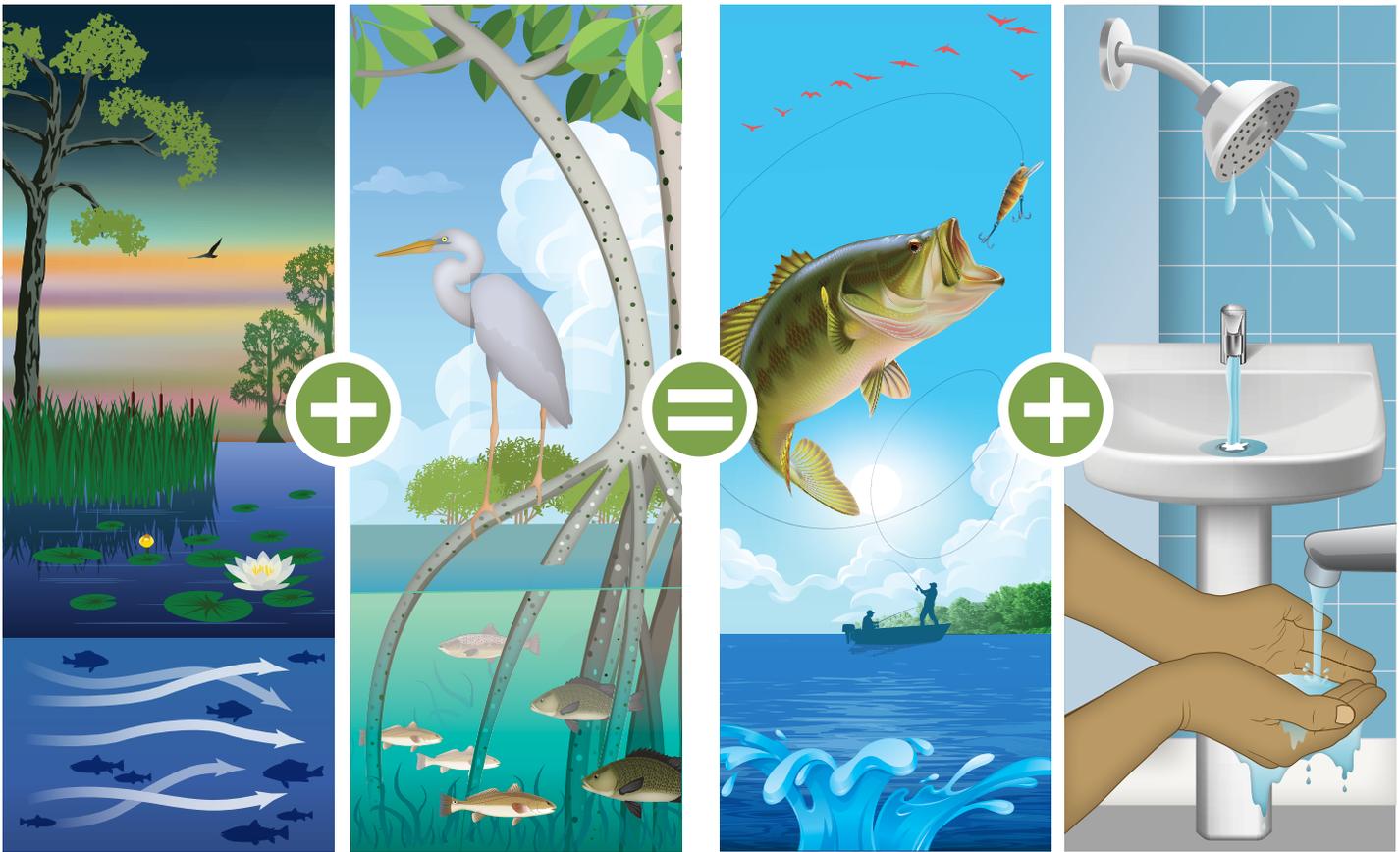
Putting a monetary value on lost ecosystem services can help communicate the implications of ecosystem loss and degradation to policymakers and the public.

ECOSYSTEM SERVICES IN FLORIDA

In Florida, several studies have estimated the value of various types of ecosystem services. A recent study by The Everglades Foundation found that Florida Bay provides at least \$455 million each year in ecosystem services such as wildlife habitat, recreation, and climate change mitigation¹. These “free” ecosystem services directly impact the economic well-being of residents. For instance, recreational fishing in the bay alone supports over 4,000 jobs². Another economic study estimated that restoring the Everglades could save billions of dollars in reducing the desalination costs of municipal water providers in Southeast Florida³.

To the north, a real estate study found that improving water quality around homes in Lee and Martin counties (which suffered massive algae blooms in 2018) could increase total property values by about \$1 billion⁴. In addition, a national study estimated that coastal wetlands provide more than \$20 billion in hurricane and tropical storm protection annually⁵.

Obviously, there are many reasons to protect nature that have nothing to do with money, like preserving the natural beauty



Wetlands provide important benefits like filtering water and providing habitat for juvenile fish.

These benefits support commercially and recreationally important fish and provide clean water for household use.

of the Everglades, protecting its unique habitats, and inspiring future generations. However, as Florida's population continues to grow, putting increased pressure on the Everglades, understanding the economic value of ecosystem services is crucial to making well-informed policy decisions.

1. Stainback A. (2016). The Economic Significance of Florida Bay (p. 53). The Everglades Foundation.
2. Stainback A. et al. (2019). Recreational Fishing in Florida Bay: Economic Significance and Angler Perspectives. *Tourism in Marine Environments*, 14(1), 89–105.
3. McCormick B. et al. (2010). Measuring the Economic Benefits of America's Everglades Restoration. *Mather Economics*.
4. O'Connor B. (2015). The Impact of Ambient Estuarine Water Quality on Florida Property Values (p. 54). Florida Realtors.
5. Costanza R. et al. (2008). The Value of Coastal Wetlands for Hurricane Protection. *Ambio*, 37(4), 241–248.

Mangroves in Everglades National Park.

Photo by Luis Garcia, John Marshall Everglades intern



Ecosystem Services - The Benefits We Get from Nature

Comprehension Questions

1. **True/False** (Choose one) - To better understand the environment's worth, humans have translated nature's benefits into economic value in dollars and cents.
2. What are some ecosystem services that are easier to place an economic value on because they are bought and sold in markets?

3. Economists estimated the worldwide value of ecosystem services at ____ in 2011.
 - a. \$120 million
 - b. \$125 billion
 - c. \$120 trillion
 - d. \$125 trillion
4. What does putting a monetary value on lost ecosystem services do?

5. **True/False** (Choose one) - Ecosystem services such as wildlife habitat, recreation, and climate change mitigation, do not directly impact the economic well being of residents.
6. Recreational fishing in Florida Bay alone supports about how many jobs?
 - a. 4,000
 - b. 4,500
 - c. 40,000
 - d. 400
7. What did the real estate study mentioned in the article determine?

8. It is estimated that coastal wetlands provide more than \$____ in hurricane and tropical storm protection annually.
 - a. 2 trillion
 - b. 20 million
 - c. 2 billion
 - d. 20 billion
9. **True/False** (Choose one) - Wetlands provide important benefits like filtering water and providing habitat for juvenile fish.
10. According to the article, when it comes to the Everglades, what is something Floridians can do to make well-informed policy decisions?

Ecosystem Services - The Benefits We Get from Nature

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Floridians can understand the economic value of ecosystem services.