



## What are Ecosystem Services?

The many natural ways that biodiversity sustains and fulfills life.

### Provisioning Services

food  
fuel  
medicine

### Regulating Services

pollination  
water quality  
climate regulation

### Cultural Services

recreation  
education  
spiritual values

### Habitat Services

migratory species habitat  
habitat for genetic diversity

# Ecosystem Services, Markets, and the U.S. Fish and Wildlife Service

## Ecosystem Services Concept

*Benefits obtained from ecosystems can be viewed as “natural capital.”*

The notion of ecosystems providing important services is not new. However, assigning ecological, socio-cultural, and economic values to ecosystem services is causing us to think differently about conservation. For example, quantifying ecosystem services as “natural capital” creates innovative financial incentives for conservation. Striking a balance between ecology and economy promises to provide practical ways to link the environment and people, and lead us toward more sustainable solutions.

## Market-Based Approach

*Nearly \$1 billion changed hands in global ecosystem markets in the last decade.*

An ecosystem services market is an organizational structure for buying and selling units of environmental benefit called *credits*. These markets provide an essential link between the people who are willing to pay for actions that improve the environment and the people who can put conservation actions on the ground. Water quality, carbon, wetlands, and protected species’ habitat are examples of actively traded services. Assigning economic value to these services is creating a shift in how society looks at sustainability, social responsibility, and business opportunities.

## Role of the U.S. Fish and Wildlife Service

*Environmental markets and incentive programs can support the Service’s mission.*

In 2007, a Memorandum of Understanding between the Service, NRCS, and AFWA was developed to explore how establishing viable markets for the exchange of habitat values would result in net conservation benefits for protected or at-risk species. Emerging markets and traditional incentive programs can work in concert with traditional ESA recovery tools such as Candidate Conservation Agreements and Habitat Conservation Plans. Examples of Service programs that use market-based tools for conserving trust resources include:

**Conservation Banks (ESA Sections 7 & 10).** In exchange for permanently protecting and managing habitat, the Service approves credits that land owners may sell to others whose projects result in unavoidable impacts to listed species. Over 120 banks, protecting more than 100,000 acres for 60 species, have been approved across the U.S. since the 1990s.

**Partners for Fish and Wildlife (Recovery).** This program provides technical and financial assistance (incentive payments for Ecosystem Services) to private landowners and Tribes who want to restore native habitat on their lands.

When we see land as a community to which we belong,  
we may begin to use it with love and respect.

~Aldo Leopold





## Environmental Markets in Oregon

*Oregon leads the nation in creating market-based frameworks that efficiently maintain and encourage ecological benefits while sustaining local economies.*

Recent legislation, **Oregon Senate Bill 513** (SB513), serves to establish policy and make legislative findings regarding ecosystem services and encourage state agencies to take certain actions related to ecosystem services and markets.

Ground breaking pilot programs, such as the **Willamette Partnership – Counting on the Environment**, encourages environmental restoration with innovation. The Partnership has created an accounting system which allows buyers and sellers to trade in multiple types of ecosystem credits, including wetlands, salmon habitat, upland prairie habitat, and water temperature. A diverse group of partners led by Defenders of Wildlife is helping the Partnership develop additional metrics for sagebrush, oak woodland, and floodplain habitats.

Traditional **Mitigation Banking**, programs set up to compensate for impacts to wetlands and species, are strong in Oregon. This includes 25 wetland banks; a wetland in lieu fee program; a programmatic stream mitigation framework under development; and a regional program and conservation strategy for vernal pools, which offers an efficient and effective approach where species and wetland mitigation needs overlap.

## Market-Based Opportunities for USFWS and Partners

*The Service encourages staff and partners to explore the ability of emerging environmental markets to conserve our trust resources.*

**Market Incentives.** Opportunities exist for incorporating voluntary market mechanisms (for example Salmon Safe certification, grass banking, and payments for watershed services); traditional payment incentive programs (such as NRCS Farm Bill programs); and mitigation programs (like offsets from Natural Resource Damage Assessments) with existing Service conservation tools (such as Safe Harbor Agreements and Candidate Conservation Agreements).

**Carbon.** Secretarial Order 3289 (2009) encourages Department of Interior agencies to account for carbon sequestered in projects agencies authorize or review. The Oregon Fish and Wildlife Office has created an assessment tool, the *Carbon Sequestration Road Map*, to assist staff and partners in identifying both monetized and non-monetized carbon sequestration opportunities.

**Candidate Conservation Banking.** Pilot projects are in development across the country to expand the conservation banking concept to non-listed imperiled species including, among others, the Greater sage-grouse.

**Aquatic Species Conservation Banking.** The application of conservation banking to aquatic species such as salmon and Oregon chub is being considered.

**Tribes.** Our work with Tribes can be expanded to increase opportunities that include market-based conservation such as carbon sequestration, conservation banking, etc.

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