

Frequently Asked Questions about Ecosystem Services

The primary purpose of these Frequently Asked Questions (FAQs) and their respective responses is to provide you with a better understanding of the many issues that are relevant to the concept and application of ecosystem services. These FAQs will be expanded over time to cover more ecosystem services related subject matter, and responding to questions and developing issues brought to our attention. After each FAQ response is Suggested Reading, provided to supplement the response but not meant to be the only sources for additional information on that issue.

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Frequently Asked Questions

- 1. What do we mean by ecosystem services (ES)?**
- 2. What are the benefits provided by ecosystem services?**
- 3. What are some types of ecosystems?**
- 4. What is the relationship between the type of ecosystem and the services produced by that ecosystem?**
- 5. What do we mean by an ecosystem services approach?**
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- 9. What are examples of payments for ecosystem services?**
- 10. What are ecosystem services markets?**
- 11. What are barriers to the development of ecosystem services markets?**
- 12. What might stimulate the development of ecosystem services markets?**
- 13. How is EPA involved with ecosystem services?**
- 14. How is the Forest Service involved with ecosystem services?**

1. What do we mean by ecosystem services (ES)?

Ecosystem services are the benefits that people receive from the environment.¹ To avoid possible double accounting issues when valuing these services, and any misunderstanding between ecosystem functions and ecosystem services, from an economics perspective a more precise definition would be “the things or characteristics of nature *directly valued by humans.*”² (emphasis added)

Sometimes other related words may be used in place of the term ‘benefits’, for example ‘goods and services’, or ‘end products’. While use of the term ‘ecosystem goods and services’ appears to have caught on as being synonymous with ‘ecosystem benefits’, some experts (e.g., Brown et al; Hawkins – see below) point out that there is a distinction between ecosystem goods and ecosystem services. Brown et al summarize this distinction as -

“Ecosystems goods are the generally tangible, material products that result from ecosystem processes, whereas ecosystem services are in most cases improvements in the condition or location of things of value.” (pp.3-4)

In combining two words into a term that takes on its own lexicological meaning, it is important to understand what each word means within the context of that term. The Millennium Ecosystem Assessment (MA), a seminal study (see below), defines an ecosystem as a “dynamic complex of plant, animal, and microorganism communities and the nonliving environment interacting as a functional unit.”

The MA mentions that benefits from ecosystem services include provisioning services, regulating services, cultural services, and supporting services.¹

¹ *Millennium Ecosystem Assessment.*

² *An assessment of market-based approaches to providing ecosystem services on agricultural lands.* T. Kroeger and F. Casey.

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Suggested Reading

- *Millennium Ecosystem Assessment.* Island Press. December 2005.
<http://www.millenniumassessment.org/en/index.aspx>
- *An assessment of market-based approaches to providing ecosystem services on agricultural lands.* T. Kroeger and F. Casey. *Ecological Economics* 64 (2007).
<http://ecosystemmarketplace.com/index.php>
- *Ecosystem Services: Benefits Supplied to Human Societies by Natural*

Ecosystems. Issues in Ecology. Ecological Society of America. No. 2, Spring 1997.

<http://www.epa.gov/owow/watershed/wacademy/acad2000/pdf/issue2.pdf>

- *Ecosystem Goods and Services: Definition, Valuation and Provision*. Thomas C. Brown, et al. USDA – Forest Service. May 31, 2006.

http://www.fs.fed.us/rm/value/docs/ecosystem_goods_services.pdf

- *Economic Valuation of Ecosystem Services*. Katherine Hawkins. October 2003.

<http://www.regionalpartnerships.umn.edu/public/Valuation%20of%20Ecosystems.pdf>

- *Ecosystem Services Fact Sheet*. Ecological Society of America.

<http://www.esa.org/ecoservices/comm/body.comm.fact.ecos.html>

2. What are the benefits (i.e., services) provided by ecosystems?

Benefits from ecosystem services include: *provisioning services, regulating services, cultural services, and supporting services*. A more complete description of each service is in the following table.

Ecosystem Services and Sub-categories

source: Adapted from Table C1 – *Millennium Ecosystem Assessment*

Service	Sub-category	Service	Sub-category
<u>Provisioning Services</u>		<u>Cultural Services</u>	
Food	Crops Livestock Capture fisheries Aquaculture Wild plants and animal food products	Cultural diversity	Spiritual and religious Values
Fiber	Timber Cotton, silk, hemp Wood fuel	Knowledge systems	Educational values
Genetic resources			Inspiration
Biochemicals, natural medicines, and pharmaceuticals			Aesthetic values
Fresh water			Social relations
			Sense of place
			Cultural heritage values
			Recreation and ecotourism

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Service	Sub-category	Service	Sub-category
<u>Regulating Services</u>		<u>Supporting Services</u>	
Air quality regulation		Soil formation	
Climate regulation	Global Regional and local	Photosynthesis	
Water regulation		Primary production	
Erosion regulation		Nutrient cycling	
Water purification and waste treatment		Water cycling	
Disease regulation			
Pest regulation			
Pollination			
Natural hazard regulation			

Suggested Reading

- *Millennium Ecosystem Assessment*. Island Press. December 2005.
<http://www.millenniumassessment.org/en/index.aspx>
 - *Ecosystem Services: Benefits Supplied to Human Societies by Natural Ecosystems*. Gretchen C. Daily, et al. Issues in Ecology. Ecological Society of America. No. 2, Spring 1997.
<http://www.epa.gov/owow/watershed/wacademy/acad2000/pdf/issue2.pdf>
- for other tables providing specific ecosystem services descriptions, see Tables 3-2 and 3-3 in:
- *Valuing Ecosystem Services – Toward Better Environmental Decision-Making*. National Research Council. 2004.
http://www.nap.edu/booksearch.php?term=valuing%20ecosystem%20services&record_id=11139
 - *Economic Valuation of Ecosystem Services*. Katherine Hawkins. October 2003.
<http://www.regionalpartnerships.umn.edu/public/Valuation%20of%20Ecosystems.pdf>

3. What are some types of ecosystems?

The Millennium Ecosystem Assessment describes 10 types of ecosystems:

- coastal
- cultivated
- dryland
- forest
- inland water
- island
- marine
- mountain
- polar
- urban

Suggested Reading

- *Millennium Ecosystem Assessment*. Island Press. December 2005.

<http://www.millenniumassessment.org/en/index.aspx>

classifying ecosystem goods and services provided by estuaries:

- *The Economic and Market Value of Coasts and Estuaries: What's at Stake?* Ed. L.H. Pendleton. Restore America's Estuaries.

<http://estuaries.org/assets/documents/FINAL%20ECON%20WITH%20COVER%20PDF%205-20-2008.pdf>

4. What is the relationship between the type of ecosystem and the services produced by that ecosystem?

Main ecosystem types and their services

source: Table 2.1. *Assessing the Economic Value of Ecosystem Conservation*. World Bank.

<i>Ecosystem service</i>	<i>Ecosystem</i>									
	<i>Cultivated</i>	<i>Dryland</i>	<i>Forest</i>	<i>Urban</i>	<i>Inland water</i>	<i>Coastal</i>	<i>Marine</i>	<i>Polar</i>	<i>Mountain</i>	<i>Island</i>
Freshwater			x		x	x		x	x	
Food	x	x	x	x	x	x	x	x	x	x
Timber, fuel, fiber	x		x			x				
Novel products	x	x	x		x		x			
Biodiversity regulation	x	x	x	x	x	x	x	x	x	x
Nutrient cycling	x	x	x		x	x	x			
Air quality and climate	x	x	x	x	x	x	x	x	x	x
Human health		x	x	x	x	x				
Detoxification		x	x	x	x	x				
Natural hazard regulation			x		x	x			x	
Cultural and amenity	x	x	x	x	x	x	x	x	x	x

Suggested Reading

- *Assessing the Economic Value of Ecosystem Conservation*. Stefano Pagiola, et al. World Bank. Environment Department Working Paper No. 101. October 2004.

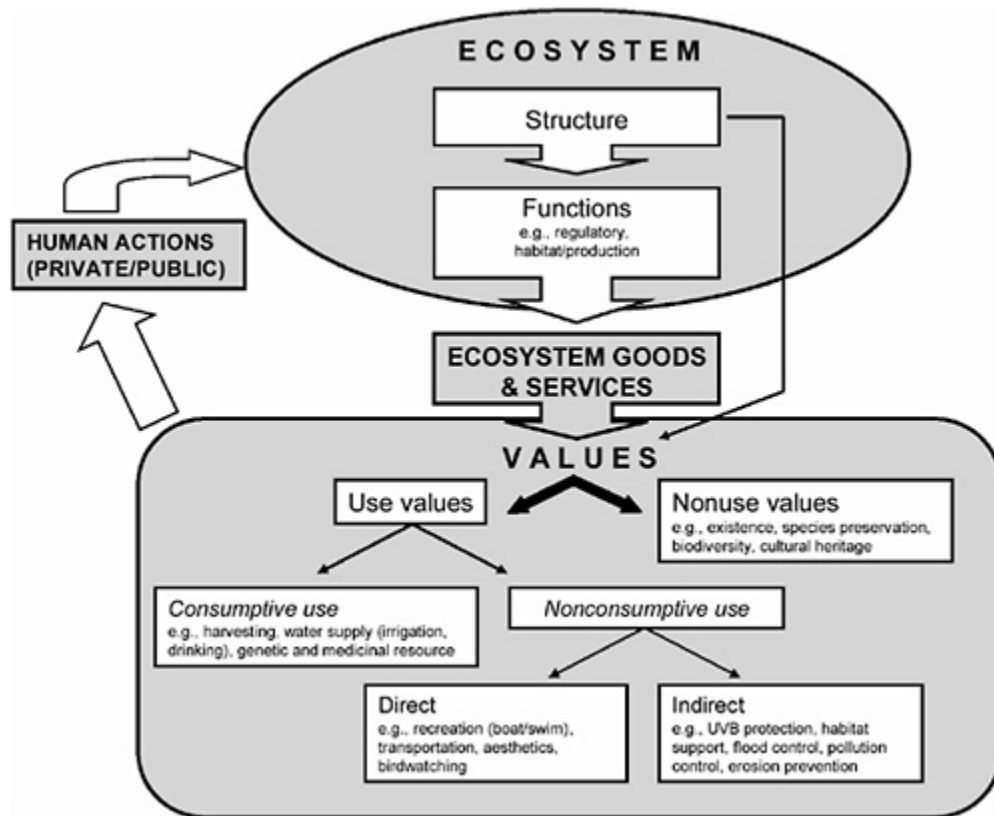
<http://129.3.20.41/eps/othr/papers/0502/0502006.pdf>

5. What do we mean by an ecosystem services approach?

The ecosystems services approach means that ecosystem services and valuation are integrated into ecosystem management, policy, and planning – i.e., ecosystems services and valuation is considered an important tool for decision-makers, particularly as it relates to the implications for decisions on ecosystem services and human well-being.

Connections Between Ecosystem Structure and Function, Services, Policies, and Values.

source: Figure 7-1. *Valuing Ecosystem Services – Toward Better Environmental Decision-making*. NRC.



Suggested Reading

- *Valuing Ecosystem Services – Toward Better Environmental Decision-Making*. National Research Council. 2004.

http://www.nap.edu/booksearch.php?term=valuing%20ecosystem%20services&record_id=11139

- *Research Prospectus – Willamette Ecosystem Services Project*. Western Ecology Division, EPA. May 2007.

<http://www.epa.gov/wed/pages/publications/authored/EPA600R-07057WillametteEcosystemProspectusBrochure.pdf>

6. Is there an important perspective to be aware of in an ecosystem services approach?

Ecosystem services explicitly recognize the interrelationship and interdependence between people and the environment. More specifically,

“... people are integral parts of ecosystems and that a dynamic interaction exists between them and other parts of ecosystems, with the changing human condition driving, both directly and indirectly, changes in ecosystems and thereby causing changes in human well-being. At the same time, social, economic, and cultural factors unrelated to ecosystems alter the human condition, and many natural forces influences ecosystems.” *

With this specific emphasis on people, this is clearly an anthropocentric perspective. That is, values derived for these services are human values.

* Millennium Ecosystem Assessment.

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Suggested Reading

- *Millennium Ecosystem Assessment*. Island Press. December 2005.

<http://www.millenniumassessment.org/en/index.aspx>

- *Ecosystem Services: Benefits Supplied to Human Societies by Natural Ecosystems*. Issues in Ecology. Ecological Society of America. No. 2, Spring 1997.

<http://www.epa.gov/owow/watershed/wacademy/acad2000/pdf/issue2.pdf>

- *Valuing Ecosystem Services – Toward Better Environmental Decision-Making*. National Research Council. 2004.

http://www.nap.edu/booksearch.php?term=valuing%20ecosystem%20services&record_id=11139

7. What does ecosystem services valuation mean?

Ecosystem services are produced by the structures and processes of ecosystems, as influenced by human activity. These ecological features and their interactions can be described as the *ecological (or biophysical) production function*. The relationship between ecosystem services and human health might be characterized by a *health production function*. The economic value to society of an ecosystem service refers to its contribution to human welfare (through improving health, recreation, goods and services, or other aspects of well-being). Economic value is measured as society's willingness-to-pay to preserve the ecosystem service, which is influenced by the quality and reliability of the service, its scarcity and degree of substitutability by other services, and the availability of complementary services—the *economic production function*. Once the physical effects of ecosystem services (and changes therein) on human health and well-being have been quantified, economic methods can be used to estimate the value of these changes. *

* Ecological Research Program Multi-Year Plan, FY 2008-2014. EPA. February 2008. §1.2.2

<http://www.epa.gov/ord/npd/pdfs/ERP-MYP-complete-draft-v5.pdf>

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Suggested Reading

- *Valuing Ecosystem Services – Toward Better Environmental Decision-Making*. National Research Council. 2004.

http://www.nap.edu/booksearch.php?term=valuing%20ecosystem%20services&record_id=11139

- Ecological Research Program Multi-Year Plan, FY 2008-2014. EPA. February 2008.

<http://www.epa.gov/ord/npd/pdfs/ERP-MYP-complete-draft-v5.pdf>

- *A New View of the Puget Sound Economy – The Economic Value of Nature's Services in the Puget Sound Basin*. Earth Economics. 2008.

http://www.eartheconomics.org/resources/publication_documents/A_New_View_of_the_Puget_Sound_Economy.pdf

- *Special Benefit from Ecosystem Services – Economic Assessment of the King Conservation District*. Earth Economics. July 2006.

http://www.eartheconomics.org/resources/publication_documents/KCD_Special_Benefit_Analysis.pdf

- *The Value of Ecosystem Services: Principles for Valuing Fish Habitat*. Daniel D. Huppert. PowerPoint presentation.

<http://www.nero.noaa.gov/hcd/socio/DanHuppert.ppt#256,1>, The Value of Ecosystem Services: Principles for Valuing Fish Habitat

- *Economic Valuation of Ecosystem Services*. Katherine Hawkins. October 2003.

<http://www.regionalpartnerships.umn.edu/public/Valuation%20of%20Ecosystems.pdf>

A good site for background on environmental economics related issues:

- NOAA Coastal Services Center.

<http://www.csc.noaa.gov/coastal/economics/envvaluation.htm>

8. Are there relevant studies of ecosystem services for the Pacific Northwest?

There are a number of recent studies that have addressed ecosystem services in the Pacific Northwest. In reading these studies, it is important to keep in mind the current 'state of the art' with regard to the underlying science and economic issues. These studies contribute to our current understanding of ecosystem services and valuation of these services, and that continuing research will provide us better knowledge to improve our ecosystem management planning and decisions.

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Suggested Reading

- *A New View of the Puget Sound Economy – The Economic Value of Nature's Services in the Puget Sound Basin*. Earth Economics. 2008.

http://www.eartheconomics.org/resources/publication_documents/A_New_View_of_the_Puget_Sound_Economy.pdf

- *An Ecological Economic Assessment of King County's Flood Hazard Management Plan*. P. Swedeen and J. Pittman. Earth Economics. August 2007.

[http://eartheconomics.org/resources/publication_documents/Ecological Economics Assessment of King County Flood Hazard Management Plan.pdf](http://eartheconomics.org/resources/publication_documents/Ecological_Economics_Assessment_of_King_County_Flood_Hazard_Management_Plan.pdf)

- *Ecosystem Services Enhanced by Salmon Habitat Conservation in the Green/Duwamish and Central Puget Sound Watershed*. Earth Economics. February 2005.

http://www.eartheconomics.org/resources/publication_documents/WRIA_9_Ecosystem_Service_Analysis.pdf

- *Technical Memo on the Economic Analysis of Ecosystem Services in the Lents Area*. ECONorthwest. 2004. Lents neighborhood, Portland, Oregon.

http://www.econw.com/reports/Economic-Analysis-Ecosystem-Services-Lents_ECONorthwest.pdf/

- *Ecosystem Services in Washington State*. EOE (Encyclopedia of Earth). 2007.

http://www.eoearth.org/article/Ecosystems_services_in_Washington_state

- *Valuing Puget Sound's Valuable Ecosystem Components*. T.M. Leschine, A.W. Peterson. Prepared for Puget Sound Nearshore Partnership, Technical Report 2007-07.

http://www.pugetsoundnearshore.org/technical_papers/social_values.pdf

- *About Ecosystem Services Markets*. The Willamette Partnership.

<http://www.willamettepartnership.org/about-markets>

Ecosystem services valuation studies outside the Pacific Northwest

- *Valuing New Jersey's Natural Capital*. New Jersey Department of Environmental Protection. April 2007.

<http://www.state.nj.us/dep/dsr/naturalcap/>

- *The Economic Values of Whangamarino Wetland – Other Ecosystem Services*. New Zealand department of Conservation. May 2007.

<http://www.doc.govt.nz/templates/MultiPageDocumentTOC.aspx?id=44466>

- *The Value of the World's Ecosystem Services and Natural Capital*. Robert Costanza, et al. Nature. vol 387, 15 May 1997.

<http://www.nature.com/nature/journal/v387/n6630/pdf/387253a0.pdf>

Sites which contain several references on ecosystem services and related issues

- World Resource Institute.

<http://www.wri.org/project/ecosystem-services-review>

- *The Ecosystem Services Project*. CSIRO (Australia)

<http://www.ecosystemsproject.org/html/aboutus/index.htm>

- Oregon State University

<http://oregonstate.edu/instruct/anth481/ectop/ecservices.html>

- *Accounting for Ecosystem Services Associated with Agricultural Production in New Zealand*. Lincoln University (New Zealand).
<http://ecovalue.uvm.edu/newzealand/>
- *Natural Capital Project Toolbox*. Natural Capital Project.
<http://www.naturalcapitalproject.org/toolbox.html>
- Gund Institute for Ecological Economics. University of Vermont.
<http://www.uvm.edu/giee/?Page=default.html>
- Ecological Research Program, EPA.
<http://www.epa.gov/ord/erp/factsheets.htm>
- *More About Ecosystem Services*. U.S. Forest Service. June 2008.
http://www.fs.fed.us/ecosystems-services/About_ES/index.shtml

9. What are examples of payments for ecosystem services? *

Government or public payments: Through conservation incentives, tax credits, and subsidies, the government may compensate private landowners for protecting, enhancing, or restoring an ecosystem service.

Voluntary private payments: Businesses, nongovernmental organizations, and conservation groups may provide payments to landowners for philanthropic, public relations, or ethical reasons or to protect investments. For example, a developer may pay a forest landowner to maintain an attractive view. An interest group may pay for hunting leases on private land. A bottled water company may protect its water source by paying upstream landowners to implement good management practices.

Regulation-driven private payments: To comply with national policy (no net wetlands loss) or to more efficiently comply with regulations (water quality and safe drinking water standards), regulated entities may choose alternatives to traditional pollution control measures. For example, the Environmental Protection Agency watershed-based permit for the Tualatin River basin in Oregon allows wastewater treatment plants to enter into a trading scheme to achieve the permit requirement for temperature. Instead of installing refrigeration systems at two Tualatin River treatment plants (at a cost of more than \$60 million), a wastewater utility can pay upstream farmers to plant shade trees in the riparian area (at a cost of about \$6 million). Flow augmentation and irrigation with effluent wastewater are also part of the trading strategy to comply with temperature regulations.

* This FAQ and response from: *About Ecosystem Services - Frequently Asked Questions*. U.S. Forest Service.
http://www.fs.fed.us/ecosystems-services/About_ES/faq.shtml

10. What are ecosystem service markets? *

In a traditional market system, people regularly come together to buy and sell goods or services. Effective markets require secure property rights, sufficient demand, access to market information for all stakeholders, and established legal institutions. The US market in sulfur dioxide is a good example of a fully functioning environmental market. This relatively new market effectively reduced sulfur dioxide emissions and set the lowest price at which emission reductions could be achieved.

Markets for ecosystem services are based on the same premise: 'Sellers' are landowners that provide clean air, clean water, wildlife habitat, and other goods and services by sustainably managing their forests, wetlands, and grasslands. 'Buyers' of these goods and services are power plants, water treatment facilities, developers, and others who invest in conservation – either by purchasing credits to offset air emissions, water discharges, or habitat/wetland destruction or as a good will gesture to improve the corporate image.

* This FAQ and response from: *About Ecosystem Services - Frequently Asked Questions*. U.S. Forest Service.
http://www.fs.fed.us/ecosystemservices/About_ES/faq.shtml

Suggested Reading

- *Creating Markets for Ecosystem Services: Notes from the Field*. James Salzman. New York University Law Review. Vol. 80, no. 6. 2005.
<http://www1.law.nyu.edu/journals/lawreview/issues/vol80/no3/NYU302.pdf>
- *Ecosystem Services Markets*. Alicia Robbins. College of Forest Resource, University of Washington. October 2005.
<https://digital.lib.washington.edu/dspace/bitstream/handle/1773/2244/tp12.pdf;jsessionid=C6C550E710A5321240F6F6D9DB77A404?sequence=1>
- Willamette Partnership.
<http://www.willamettepartnership.org/>
- *Policy Cornerstones and Action Strategies for an Integrated Ecosystem Marketplace in Oregon*. The Institute for Natural Resources. July 2008.
http://inr.oregonstate.edu/download/ES_Cornerstones_July2008.pdf
- *Ecosystem Marketplace*. The Katoomba Group.
<http://ecosystemmarketplace.com/index.php>

- *An assessment of market-based approaches to providing ecosystem services on agricultural lands.* T. Kroeger and F. Casey. *Ecological Economics* 64 (2007).

<http://ecosystemmarketplace.com/index.php>

11. What are barriers to the development of ecosystem service markets? *

Since ecosystem services are traditionally considered free, there is no means to explicitly attach a monetary value to these services. Lacking a role in the formal market place, ecosystem services are often undervalued and in some cases exploited. For most ecosystem services, systems to set limits, clarify ownership rights, assign values, quantify delivery of services, and target benefits to buyers have not yet been developed.

Some additional barriers to the development of ecosystem service markets include uncertainty about the quality of the services (whether actions to enhance or improve ecosystem services are permanent and do not lead to ecosystem service decline in other areas); the potentially high transaction costs of quantifying and verifying the services; the need to aggregate landowner activities to a scale that attracts investment; and the lack of knowledge and interaction among buyers and sellers.

While there is growing recognition of the public benefits provided by forests, the idea of landowner compensation for these benefits is not similarly understood or accepted. An open, active dialogue is needed to encourage businesses and the public to re-examine the notion that ecosystem services are free, and take a critical look at the prospect of paying for these services. Research and demonstration projects are needed to improve the credibility of land management practices that enhance and maintain the delivery of ecosystem services.

* This FAQ adapted from: *About Ecosystem Services - Frequently Asked Questions.* U.S. Forest Service.

http://www.fs.fed.us/ecosystems/services/About_ES/faq.shtml

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Suggested Reading

- *Creating Market for Ecosystem Services: Notes from the Field.* James Salzman. *New York University Law Review.* Vol. 80, no. 6. 2005.

<http://www1.law.nyu.edu/journals/lawreview/issues/vol80/no3/NYU302.pdf>

- *An assessment of market-based approaches to providing ecosystem services on agricultural lands.* T. Kroeger and F. Casey. *Ecological Economics* 64 (2007).

<http://ecosystemmarketplace.com/index.php>

- *About Ecosystem Services Markets.* The Willamette Partnership.

<http://www.willamettepartnership.org/about-markets>

12. What might stimulate the development of ecosystem service markets?

Effective markets for ecosystem services are almost always associated with public policy or a regulatory framework. For example, the active carbon trading markets in Europe are a result of the greenhouse gas limitations set in the [Kyoto Protocol](#). Wetland mitigation banking is a result of [national policy and regulation](#). Cost savings associated with the use of forests and forestry practices as an alternative to engineering solutions may drive some ecosystem service trades. For example, it may be more cost effective for a municipality to pay upstream landowners to reduce erosion than to dredge sediment from dams and waterways. Other motives - altruism, improvement of corporate image, and philanthropy, for example – may also play a role in future market development.

Investors are most attracted to ecosystem service markets that have universally accepted standards; an internationally fungible, tradable unit; risk mitigation; legal and financial accountability; an insurance product; and a scalable solution.

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- * This FAQ and response from: *About Ecosystem Services - Frequently Asked Questions.* U.S. Forest Service.

http://www.fs.fed.us/ecosystems/services/About_ES/faq.shtml

Suggested Reading

- *Creating Market for Ecosystem Services: Notes from the Field.* James Salzman. *New York University Law Review.* Vol. 80, no. 6. 2005.

<http://www1.law.nyu.edu/journals/lawreview/issues/vol80/no3/NYU302.pdf>

- *An assessment of market-based approaches to providing ecosystem services on agricultural lands.* T. Kroeger and F. Casey. *Ecological Economics* 64 (2007).

<http://ecosystemmarketplace.com/index.php>

- *About Ecosystem Services Markets.* The Willamette Partnership.

<http://www.willamettepartnership.org/about-markets>

13. How is EPA involved in ecosystem services?

For more than 30 years, the U.S. Environmental Protection Agency has studied the impacts of human activities on the environment. However, the contributions of nature's services have not been fully considered by policy makers and planners, largely because of the lack of scientific and socioeconomic knowledge to do so. There is growing recognition globally that the full range of benefits derived from ecosystem services needs to be considered if we are to continue to benefit from them.

Scientists at EPA are studying ecosystem services to gain a better understanding of how to enhance, protect, and restore the services of nature. Their discoveries are providing the information needed by national, regional, and local decision makers to make clear how our choices affect the type, quality, and magnitude of the services we receive from ecosystems.

- from: Research to Value Ecosystem Services. ERP, EPA.

<http://www.epa.gov/ord/npd/pdfs/erp-overview-fact-sheet-final.pdf>

EPA is also entering into new partnerships and collaborations “with states, tribes and territories, communities, universities, federal agencies, non-governmental organizations, and others to ensure the best scientific tools and information are developed for use in making decisions about ecosystem services.

- from: *In the Spotlight*. Ecological Research Program, EPA. July 2008.

<http://www.epa.gov/ord/erp/spotlight.htm#partnerships>

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Suggested Reading

- Ecological Research Program Multi-Year Plan, FY 2008-2014. EPA. February 2008.

<http://www.epa.gov/ord/npd/pdfs/ERP-MYP-complete-draft-v5.pdf>

- *Research Prospectus – Willamette Ecosystem Services Project*. Western Ecology Division, EPA. May 2007.

<http://www.epa.gov/wed/pages/publications/authored/EPA600R-07057WillametteEcosystemProspectusBrochure.pdf>

- Ecological Research Program, EPA.

<http://www.epa.gov/ord/erp/factsheets.htm>

- Program Overview Fact Sheets. ERP, EPA. July 2008.

<http://www.epa.gov/ord/erp/factsheets.htm>

14. How is the Forest Service involved? *

The Forest Service is working to advance market-based approaches to conservation and stewardship on private and community lands. Valuing ecosystem services presents an opportunity to promote public awareness of the importance of forests and grasslands to human well-being; provide an economic incentive for private landowners to own and sustainably manage their land; encourage ecological restoration; and inspire individual efforts to reduce consumption of natural resources and minimize human impact of ecosystems.

Our state & private forestry, research, national forest and rangeland management, and international programs staffs are working closely together to communicate an ecosystem services perspective and explore opportunities for market-based conservation.

* This FAQ and response from: *About Ecosystem Services - Frequently Asked Questions*. U.S. Forest Service.
http://www.fs.fed.us/ecosystemservices/About_ES/faq.shtml