
Ecosystem Services

Date for discussion: July 6, 2012

Definition

For purposes of the PEG discussion, ecosystem services are the *public benefits provided by natural resources and green infrastructure*. Some examples are recreation, flood mitigation, pollination of crops, carbon sequestration, stormwater management, and cultural and spiritual satisfaction. A variety of techniques can be used to assign value to those services, however some services are difficult to quantify in terms of dollars or other metrics. Most studies address at one specific type of benefit, because it can be challenging to understand how ecosystem services work together.

Why should we care about ecosystem services?

Unfortunately it's easy for many people to forget that it's often in all of our best interests to take care of natural resources. In fact, big problems such as flooding and landslides sometimes happen when we don't. Yet, controversy has arisen over actions that the City of Portland has taken in the past to address these issues because some don't think those actions are the City's responsibility. Because of that, it is important that the Comp Plan clearly communicate the practical reasons for taking good care of the existing natural resources and improving their function, where possible. The questions below have to do with how we describe those practical reasons – What language should be used? Where? How does that get translated into decisions about the Comp Plan Map (i.e. where growth should go) and the Comp Plan project list (i.e. what infrastructure improvements are needed to serve that growth)?

Relevance to other PEG topics

The topic of ecosystem services is related to all WH&E discussion topics, and also relates to discussions in other PEGs including Economic Development, Networks, and Infrastructure Equity.

Questions for discussion

When considering **ecosystem services and the Comprehensive Plan**:

- How should the Comp Plan policies describe the community benefits, including monetary value, provided by Portland's natural resources?
- How should ecosystem services be considered when making decisions about how to accommodate future growth, including decisions about land uses, urban design, transportation and infrastructure?
- Is it important that the term "ecosystem services" be used in the Comp Plan policies? Or, is it more useful to refer to specific types of ecosystem services?

Why incorporate the concept of "ecosystem services" in the Comp Plan?

Without policies that clearly state the public benefits of protecting and caring for natural resources and green infrastructure, community members may not understand the reasons for particular City requirements or investments. The policies also provide a legal basis for a number of City activities, including:

- Zoning provisions, design requirements and development standards;
- Capital investments in green streets and natural area acquisitions; and
- Land use and transportation plans.

By highlighting the ecosystem services provided by natural resources and green infrastructure, planning processes can explain not only the kinds of actions desired in an area (e.g. protect riparian corridors) but also the expected outcomes of those actions (e.g. cleaner water and less erosion).

Proposal for PEG consideration

1. **Policies:** Include the term “ecosystem services” in the Environmental Chapter’s goal and in the Comp Plan’s glossary of terms. Within the policies, focus on the specific services and benefits provided by natural resources, such as water quality, hazard mitigation or recreational uses, rather than repeating the term throughout the chapter.
2. **Maps:** Use the Natural Resource Inventory and other relevant environmental data (e.g. soils conditions) to identify where to focus growth and where to prioritize natural resource preservation and enhancement. In addition, use demographic and socioeconomic data to assess the potential equity impacts of the current and future distribution of natural resources and other green infrastructure.
3. **Projects:** Identify infrastructure investments to preserve and enhance natural resources and other green infrastructure necessary to provide a range of ecosystem services to support future growth, protect health and safety, and maintain community resiliency. Support capital funding (infrastructure dollars) to fund the protection and maintenance of natural resources and other green infrastructure that provide clear public benefits related to the missions of City of Portland bureaus. (For example: Sewer funds for reducing and treating stormwater runoff from development.)

Previous City of Portland policies and planning processes

City of Portland policies and planning processes developed prior to the Portland Plan refer to an array of ecosystem services, without specifically using the term. Academics, economists and planners use the concept of ecosystem services for conducting economic and environmental analyses because it associates specific values (often monetary) to natural resources. This approach can aid in evaluating the practical benefits of particular proposed actions. While this can be helpful, some people find the term hard to understand. Another limitation is that it only accounts for the direct benefits of natural resources to people – it doesn’t recognize for benefits of those resources for other species or for ecosystems.

Resources

1. ***Comprehensive Plan (2006), pg. 8-5. Policy 8.15*** Conserve significant wetlands, riparian areas, and water bodies which have significant functions and values related to flood protection, sediment and erosion control, water quality, groundwater recharge and discharge, education, vegetation, and fish and wildlife habitat. Regulate development within significant water bodies, riparian areas, and wetlands to retain their important functions and values. (A similar policy exists for uplands.)
2. ***2005 Portland Watershed Management Plan (2005), pg. 40. Channel and Floodplain Function Objective:*** Protect and restore the extent, connectivity and function of streams, other open drainageways, wetlands, riparian areas and floodplains to improve bank stability and natural hydrologic functions and reduce risk to development and human safety.
3. ***Climate Action Plan (2009), pg. 51. Urban Forestry and Natural Systems Action (ii):*** Acquire, restore and protect natural areas to promote functional watersheds and forest ecosystems, reduce the urban heat island effect, improve air and water quality, connect habitats, and contribute to regional health, biodiversity, and resiliency.
4. ***Portland Plan (2012), pg. 88. Policy Healthy Connected City Policy 25:*** Preserve and restore habitat connections and tree canopy to link stream and river corridors, landslide-prone areas, floodplains, wetlands and critical habitat sites into a system of habitat corridors. This provides

connections for wildlife, supports biodiversity, improves water quality, reduces risks due to flooding and landslides, and supports Portland's adaptation to climate change.

5. **Urban Forestry Action Plan (2007), pg. 6. Goal 3:** Manage the urban forest to maximize community benefits for all residents. (The plan's introduction outlines an array of environmental, social and economic benefits provided by the urban forest.)
6. **South Waterfront Plan (2002), pg. D-3. Greenway and Parks Policy:** Create an exemplary open space network that embraces the river as the district's "front yard" and provides a range of urban amenities, beauty and ecological functions.
7. **2005 Portland Watershed Management Plan (2006), pg. 41. Economic Considerations Objective:** Implement and support watershed actions in ways that are cost-effective and equitable, taking into consideration local and regional economic goals, indirect costs, externalities and ecosystem services.
8. **Portland Plan (2012), pg. 89. Healthy Connected City Action 116:** Adopt an updated citywide natural resource inventory as a basis for updating the City's Comprehensive Plan, including new integrated policies to address watershed health and job goals. Integrate watershed health criteria into the analysis of alternative growth and land use scenarios. Establish criteria and methods to assess the watershed impacts of public policy and investment. Develop policies addressing ecosystem services and the value of natural resources, green infrastructure and related investments.