

Ecological Significance

Ecological Approach to Infrastructure Development



Purpose

The Ecological Approach to Infrastructure is an ongoing planning effort to link transportation and environmental decision-making. The Ecological Approach focuses on the region's ecologically significant natural resources, while using mapping technology to help better inform planning decisions. Avoiding or minimizing environmental impacts early in the transportation planning process can lead to significant cost reduction and a streamlined environmental review process. Early avoidance can also advance projects while preserving and restoring wildlife habitat, improving water quality, protecting cultural and historical resources, and reducing stormwater and flooding issues.

What it is

The 2011 Ecological Approach to Infrastructure report highlights areas of ecological significance for the purpose of identifying areas that offer exceptional promise for conservation of viable, functional landscapes through time. In addition, smaller, yet functional patches that support regionally or nationally significant communities or populations of species of conservation concern and deserve special consideration as ecologically significant areas, are also highlighted.

Coverage

The ecological significance layer was created for the eight-county East-West Gateway planning region surrounding St. Louis in Missouri and Illinois. This includes the Illinois counties of Madison, Monroe, and St. Clair, and the Missouri counties of Franklin, Jefferson, St. Charles, and St. Louis, and the City of St. Louis.

Cost

FREE. Initial data gathering, conceptualization of methods, and technical work was completed by Missouri Resource Assessment (MoRAP) and East-West Gateway staff and paid for by funding from the Missouri and Illinois Departments of Transportation.

Explanation of the Significance Ranking

Significance was assigned to land cover patches based on values for attributes such as size, area of significant natural communities, and number of rare species occurrences. From there, land patches were ranked in tiers.

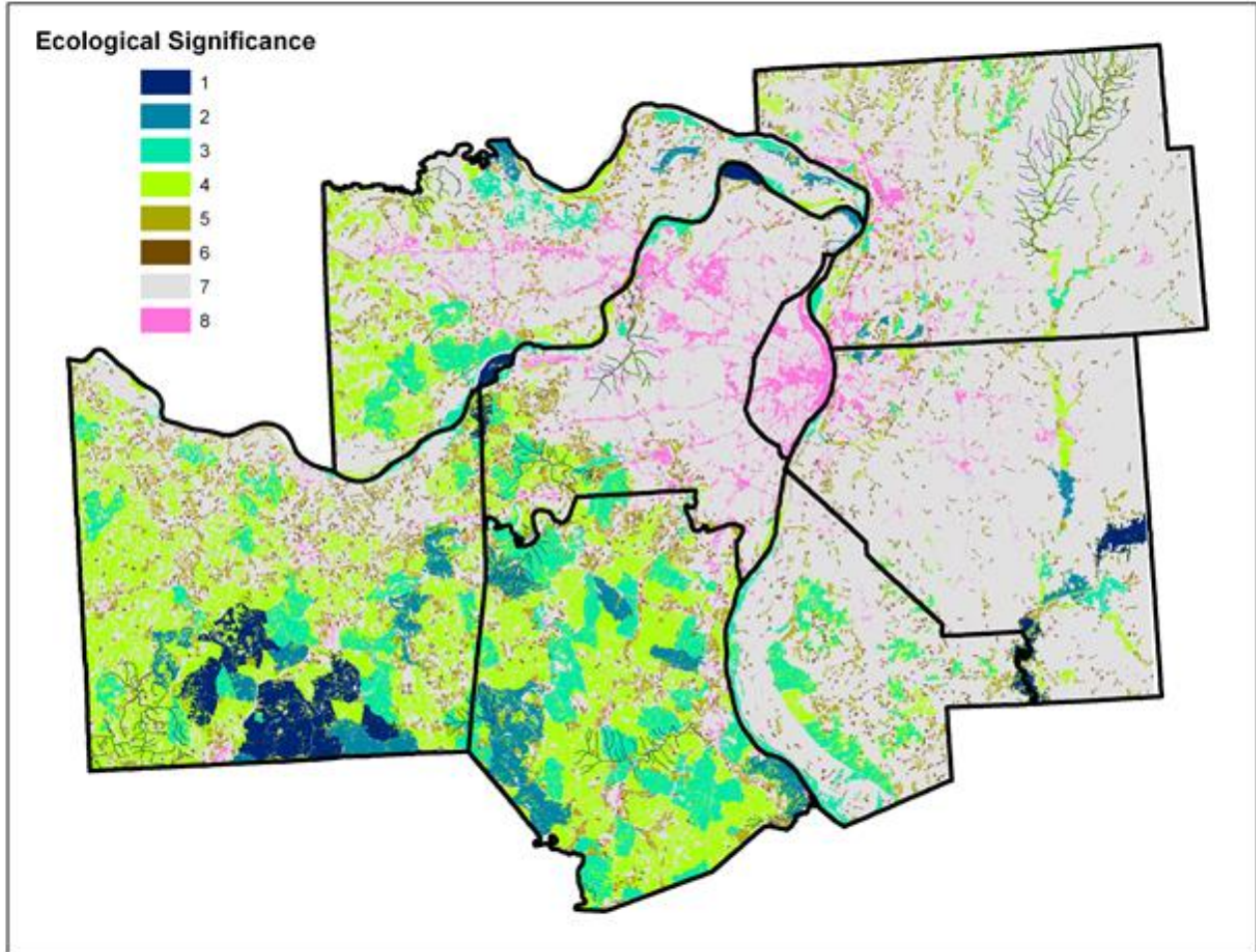
- Tier 1 – Maximum Significance. Only 2.9% of the study region is ranked Tier 1. This selection set consisted of 50-meter buffers on either side of the center line of streams within watersheds identified as aquatic conservation opportunity areas in Missouri or biological significant streams in Illinois. The focus for Tier 1 is on riverine communities of conservation significance, and coarse-filter elements of natural diversity (e.g. large patches and large areas of significant natural communities).
- Tier 2 – Very High Significance. This selection includes patches constituting 2.7% of the region. The focus for Tier 2 is both on coarse-filter (large patches, area of significant natural communities) and fine-filter (globally rare species) elements of natural diversity.
- Tier 3 – High Significance. This tier comprises 7.1% of the region and incorporates a variety of coarse-filter and fine-filter targets, as well as the area of public lands, which relates to maintenance of long-term ecosystem functionality.
- Tier 4 – Medium Significance. Approximately 14.7% of the region is Tier 4, which includes all remaining natural and semi-natural patches > 100 ha (hectares), and all cultural and successional vegetation types that are immediately adjacent to Tier 1, 2, or 3 patches. Emphasis is on overall ecosystem functionality based on patch size.
- Tier 5 – Medium Low Significance. This tier is approximately 4.1% of the region and consists of all remaining natural and semi-natural patches between 20 ha and 100 ha,

and also emphasizes functionality. These patches may require additions or active management to remain viable over time.

- Tiers 6, 7, & 8 are of Low Significance, Very Low Significance, and Minimum Significance respectively. Together, they make up 68.5% of the region and include the smallest patches of natural and semi-natural land, cropland, and areas of urban high intensity.

Depiction of the Ranking

One of images from the report (see below) highlights the few remaining areas that comprise the top three tier levels of ecological significance.



How to get it

The Ecological Approach to Infrastructure Development Report can be found at www.ewgateway.org/eco. For questions regarding the data, email gisservices@ewgateway.org.



EAST-WEST GATEWAY
Council of Governments

Creating Solutions Across Jurisdictional Boundaries

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