

CONSERVATION PLANNING APPLICATION USES DRCOG REGIONAL LAND COVER DATA

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Purpose: The High Line Canal Conservancy's stormwater transformation project is helping revitalize a 70-mile linear park-like amenity in the Denver metro area. As part of a recent Pisces Foundation grant, Biohabitats assisted the conservancy in conducting an opportunity analysis along the canal to evaluate the stacked benefits for water quality, habitat and social improvement projects. DRCOG's 1-meter regional land cover data, from the Regional Data Catalog, provided information about habitat connectivity, habitat quality and stream- and lakeside vegetation across the six jurisdiction project area.

Overview of analysis approach: Although the canal is a man-made feature, the analysis was based on it serving as a riparian-like (stream side) habitat for birds, pollinators, reptiles and small mammals. Initial evaluation of habitat quality and connectivity was therefore completed by aggregating multiple cover classes from the land cover dataset and filtering the information to only include areas within a ¼-mile riparian buffer of the canal (see figure on reverse). The vegetation land cover data was then quantified along canal reaches to determine the total acreage of each vegetation type and the riparian-like habitat areas. The analysis results provided valuable information for comparing riparian habitat quantity and quality along the canal (see figure on reverse), and for identifying areas where ecological values could be improved or protected. The results were integrated with water management opportunities and social vulnerability mapping to develop concepts for stacked management approaches with the greatest benefits for wildlife, habitats and people.

Potential future opportunities and next steps:

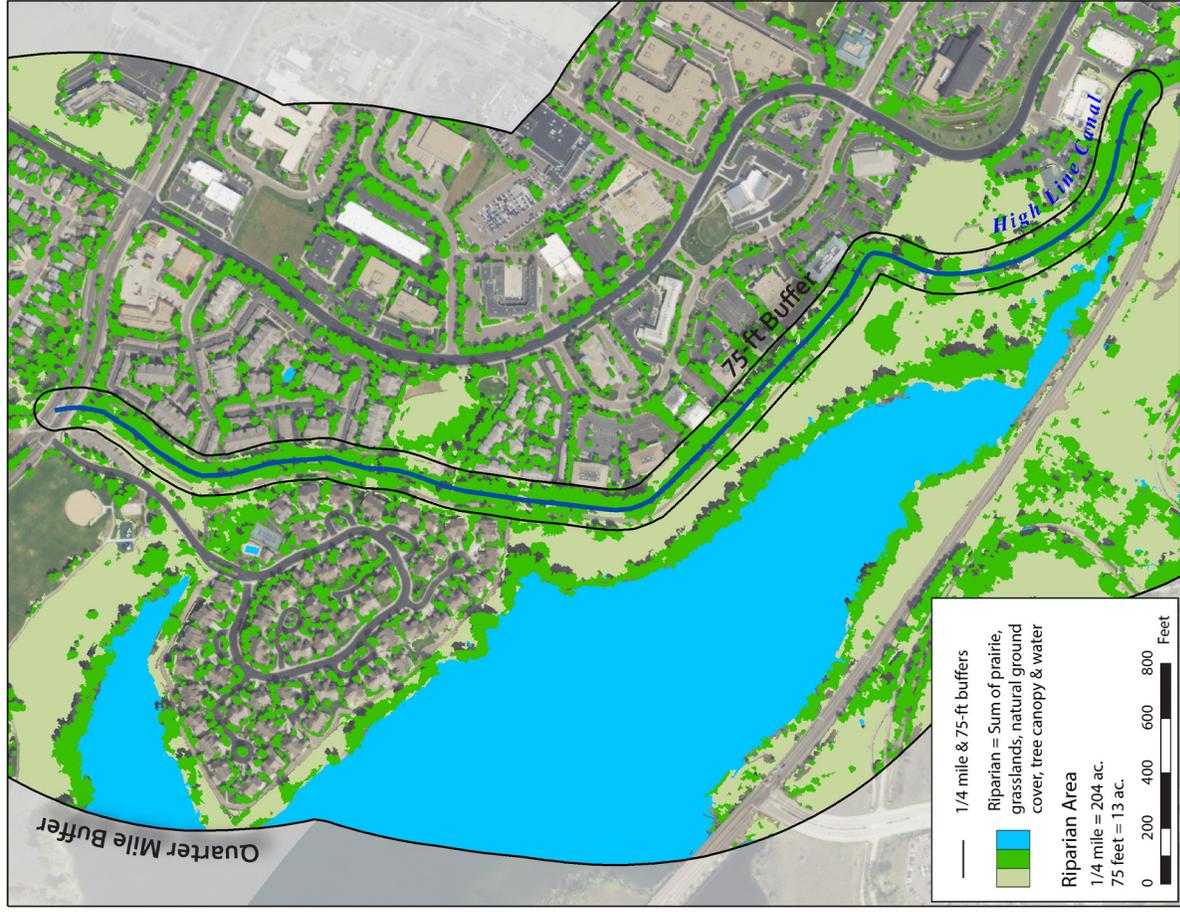
Across the country, there is an urgent need for improved conservation and restoration planning to reduce the rapid loss of habitat, as evidenced by recent reports of national bird population declines. An integrated land and water planning approach is also critical for watershed protection and climate resiliency. Local, high resolution land cover data provides a bridge to implementation for planners. For example, future analysis proposed by the Denver Metro Nature Alliance will focus on habitat prioritization and connectivity by summarizing vegetation classes, defining focal species and determining thresholds for habitat patch size to support the focal species. The information would be used to define and locate core habitats across the project area, representing the main hubs of habitat connectivity and areas where high biodiversity likely exists. Any remaining non-vegetated classes from the 1-meter planimetric data are then converted into a layer representing barriers that can impede movement of the focal species (roads, buildings, parking lots). This information can then be used in connectivity analysis software, which uses algorithms from electronic circuit theory to predict connectivity in heterogenous landscapes. These connectivity predictions, along with the identification of pinch-points, provide valuable information for locating areas with conservation and restoration potential.

Given the importance of conservation, restoration and other nature-based solutions for maintaining ecosystem functions and climate-resilient communities, the availability of high resolution land cover data will be integral to supporting these efforts in the future.

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High Line Canal Segment Example

High score riparian vegetation and connectivity in buffer



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Low score riparian vegetation and connectivity in buffer

