



CALIFORNIA ESSENTIAL HABITAT CONNECTIVITY PROJECT



Frequently Asked Questions About the Data

This document is intended to provide succinct answers to the most commonly asked questions about the essential habitat connectivity data sets. For further detail on answers to any of these questions, please refer to *Chapter 2. Methods* of the report cited immediately below.

How shall I cite this data?

Preferred citation for the data is the same as that of its accompanying report:

Spencer, W.D., P. Beier, K. Penrod, K. Winters, C. Paulman, H. Rustigian-Romsos, J. Strittholt, M. Parisi, and A. Pettler. 2010. California Essential Habitat Connectivity Project: A Strategy for Conserving a Connected California. Prepared for California Department of Transportation, California Department of Fish and Game, and Federal Highways Administration.

Why do some areas I know are natural and even in protected status not show up as Natural Landscape Blocks?

Most likely, omission is due to the broad scale of this statewide modeling effort. Natural Landscape Blocks were delineated based on an index of ecological condition modified by considerations of conservation protection status and high biological value. Lands included in Natural Landscape Blocks met a set of criteria based on a combination of these factors. Initial application of the rules resulted in thousands of potential Natural Landscape Blocks, many of which were too small to be reasonably assessed at the statewide level. Consequently, preliminary blocks < 2,000 acres in size were eliminated.

Why were some blocks linked and not others?

Omission of a modeled linkage is likely due in part to both the scale of the statewide analysis and the constraints of the project. Rules were necessary to prioritize the hundreds of potential connections between blocks that could be modeled. One early rule was to limit the linkage modeling to blocks $\geq 10,000$ acres in size and not entirely edge-affected – that is, semi-linear with all portions 1 km from the block's edge. Members of a technical advisory group for this project recognized the value of leaving polygons that did not meet this criteria in the GIS layer of Natural Landscape Blocks, even though linkages were not modeled to them. Once a larger set of rules for determining where to model connections between the remaining blocks was derived, many of these 2,000 – 10,000 acre and edge affected blocks did in fact become subsumed as “stepping stones” within Essential Connectivity Areas.

What do “less cost” and “more cost” represent in the legend for Essential Connectivity Areas?

Essential Connectivity Areas were created using least-cost corridor models run on a resistance surface. Another way to think of Essential Connectivity Areas is as “paths of least resistance” The resistance surface represents the per-pixel cost of movement across the landscape for an ecological movement of interest such as species migration or gene flow. . However, for this statewide modeling effort, it was not possible to model movements of particular focal species or genes across the landscape. Therefore, the resistance layer was based primarily on landcover naturalness, under the assumption that less human-modified areas are less resistant to most ecological movements of interest.

Were ownership or land protection status factored in to “cost”?

Current ecological condition, independent of ownership or protection status, was used to build the cost, or resistance, layer. This layer was then modified to assign slightly lower resistance to lands that are protected against habitat conversion and managed for ecological values. Some private lands may meet this last criteria, but such lands would be difficult to identify statewide with existing data. The cost layer was not modified on private lands that may indeed be managed in perpetuity for ecological values.

Were anticipated urban growth or any other threats factored in to “cost”?

Again, the data required to factor in growth or other threats (e.g. fire, invasive species) is not readily available in a standardized format across the state. Such parameters were not factored in to this analysis.

Why is there an overlap area between some Essential Connectivity Areas and Natural Landscape Blocks and how do I treat such an area?

Centroids rather than edges of the Natural Landscape Blocks were used as the termini for least-cost corridor modeling because (1) this is repeatable and (2) it provides the least-cost corridor model sufficient “room to roam” between landscape blocks. Using block edges can constrain the least-cost corridor such that it may simply identify the shortest route between the facing Natural Landscape Block edges, potentially omitting more functional or lower cost routes.

Since any given area in a Natural Landscape Block is not necessarily in protected status, both layers should be considered together when planning for the conservation of connected lands. The Essential Connectivity Area portion of the overlap contains more data for determining the lowest resistance or least cost path.