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CHAPTER IV-D

*..... Geographic Information Systems (GIS) Applications*

GIS-BASED MODEL TO SUPPORT PROGRAMMATIC SECTION 7 CONSULTATIONS ON  
THE CANADA LYNX IN COLORADO

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Abstract

*Project Period:* February 15, 2001 – September 15, 2001

The Colorado Department of Transportation (CDOT), on behalf of the Federal Highway Administration (FHWA), is in the process of conducting programmatic section 7 consultations on the Canada lynx. CDOT divided Colorado into eight consultation units where lynx habitat and highways intersect. A programmatic is nearing completion for one of the units; others will be developed in order of priority. The programmatic builds on the idea that the highest conservation needs for lynx, such as structures that allow it to cross roads, are not necessarily located within project limits. The programmatic therefore identifies locations that form the greatest barriers to movement, develops conservation measures for those areas, and provides agreements between the U.S Fish and Wildlife Service (FWS), FHWA, and CDOT to implement those measures.

To assess barriers to movement and other conservation needs, CDOT, with the assistance of the remote sensing unit of the U.S. Bureau of Reclamation and the FWS, constructed a GIS-based model of lynx habitat. The model is designed to identify likely movement corridors and their intersection with roadways. It was assembled using detailed watershed-based vegetation maps (developed by the US Bureau of Land Management and the Colorado Division of Wildlife), digital elevation models, as well as slope and aspect data. The process yielded several potential corridors. Their intersection with roadways was verified on the ground. CDOT then developed design recommendations for structures that connect lynx movement corridors across a highway. When constructed, these crossings will compensate for impacts associated with highway projects in the consultation unit and form the basis for a programmatic section 7 consultation.