



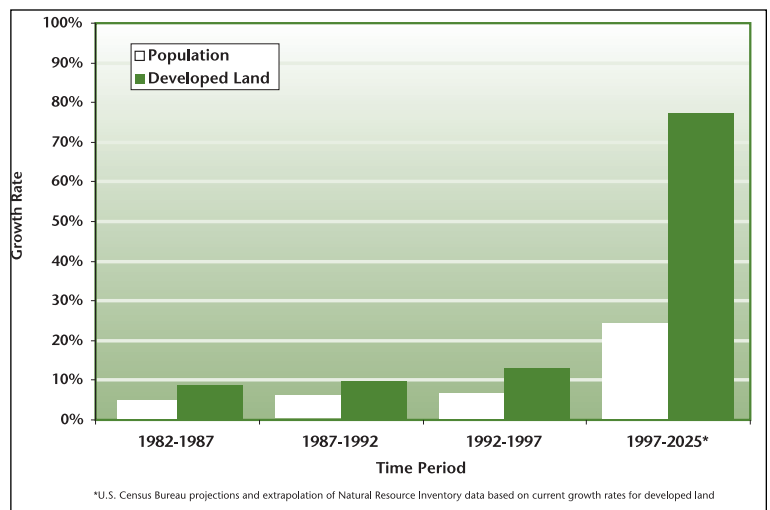
# INTRODUCTION

The U.S. is outgrowing the American dream. Between 1950 and 1990, urban land area increased more than twice as fast as population. Development sprawls into rural and natural areas, consuming over two million acres of farmland, open space and wildlife habitat per year. While largely influenced by demographic and socio-economic factors, public policies on transportation and land use have played an important role in shaping development patterns. If the rate of development continues at its current pace and follows today's sprawling model, the amount of land developed in the next 25 years will equal the total amount developed since the country's founding.<sup>1</sup>

As of January 2003, more than 1,300 species of plants and animals had been listed as threatened or endangered by the federal government. The continued existence of many of these species, and of many others that are not on the list, will depend on the availability of quality habitat. Unfortunately, that habitat is being rapidly lost to sprawling development largely ushered in by transportation policies that are focused on building roads without sufficient efforts to minimize environmental impacts. Even species not threatened by the loss of habitat may be vulnerable to another ill brought on by transportation projects — the intro-

duction of foreign species, which can harm native species through displacement or predation. Together, the loss, degradation or fragmentation of habitat and the spread of invasive species are the greatest threats to biodiversity.<sup>2</sup> These dual forces are responsible for what conservation biologists now predict will be the “sixth great extinction” — the loss of a third of the world's plant and animal species within the next 50 years.<sup>3</sup>

Road and highway construction is one of the chief culprits responsible for the loss of biodiversity. Roads harm the natural environment in many ways: they pollute streams and wetlands, they cause roadkill, and they promote land development that consumes natural habitat. The emergence of a new field of study, road ecology, underscores the importance of trans-





portation's impact on biodiversity. Road ecology "uses the science of ecology and landscape ecology to explore, understand, and address the interactions of roads and vehicles with their surrounding environment."<sup>4</sup>

Transportation agencies have long-recognized the impact that their projects have on biodiversity. Since the early 1970's agencies

have been assessing the environmental impacts of federally-funded projects through Environmental Impact Statements required under the National Environmental Policy Act (NEPA). But recently, some agencies have sought better approaches to addressing environmental impacts and thereby improving transportation project delivery.

This report showcases innovative programs and partnerships pioneered by state and local agencies across the nation to more effectively coordinate transportation, land use, and resource planning and investments. These case studies demonstrate how transportation agencies can both improve project delivery and better protect environmental and cultural resources. These goals can be achieved by planning early in the process for biodiversity conservation, by integrating environmental knowledge into transportation plans, and through better coordination among agencies. This report will examine some innovative programs that already incorporate these ideas, and that may serve as models for the rest of the nation. But first, it will examine how roads and highways and the development they facilitate threaten the country's natural heritage.

1. National Resources Inventory. Natural Resources Conservation Service. U.S. Department of Agriculture, Washington, DC. 2001.
2. G. Ohland and H. Dittmar. Biodiversity and Smart Growth: Sprawl Threatens Our Natural Heritage. Funders' Network for Smart Growth and Livable Communities. Translation Paper Number 10, October 2002.

3. Center for Biodiversity and Conservation, American Museum of Natural History. Humans and Other Catastrophes: Perspectives on Extinction. A summary of the April 1997 symposium of the same name.
4. Richard T. T. Forman, Daniel Sperling, et al. Road Ecology: Science and Solutions. (Washington, DC: Island Press, 2003) xiv.