



SUPPORTING SAFE TRAVEL FOR OREGON'S WILDLIFE

Wildlife everywhere faces a growing challenge: moving safely across an increasingly fragmented landscape. Roads, urban development, and other human-made barriers can make it harder for animals to access food, shelter, and breeding areas, while also increasing the risk of wildlife-vehicle collisions. To address this issue, researchers at Portland State University (PSU) worked on a groundbreaking effort to understand and protect the travel patterns of Oregon's wildlife.

The Oregon Connectivity Assessment and Mapping Project (OCAMP) was a multi-year collaboration aimed at mapping wild species' habitats and travel corridors across the state. The research team created an interactive Priority Wildlife Connectivity Areas Map of Oregon, which can be used to protect wild animals' ability to move from place to place. The project was funded in part by the Oregon Department of Transportation (ODOT), to help the agency identify and mitigate the impacts of transportation infrastructure on Oregon's wildlife.

ABOUT THE PROJECT

In June of 2019, the Oregon Legislative Assembly passed House Bill 2834, which mandated that the Oregon Department of Fish and Wildlife (ODFW) develop a Wildlife Corridor Action Plan to provide guidance for the designation and protection of wildlife corridors in Oregon. The bill also directed

the Oregon Department of Transportation (ODOT) to establish a program to reduce wildlife-vehicle collisions in areas where wildlife corridors identified in the Wildlife Corridor Action Plan intersect with proposed or existing public roads.

Rachel Wheat, the Wildlife Connectivity Coordinator for ODFW, was the project coordinator. The PSU research team was led by Martin Lafrenz of the Geography department, Catherine De Rivera of Environmental Sciences and Management, and Daniel Taylor-Rodriguez of the Department of Mathematics and Statistics.

Lafrenz is a geomorphologist who studies human alteration of the water cycle and the landscape, De Rivera studies how anthropogenic changes in habitat connectivity affect animal populations and ecosystems, and Taylor-Rodriguez focuses on applying statistical methods to large scale problems, with an emphasis on ecological applications. The research was supported by PSU masters students Amanda Temple, Claire Brumbaugh-Smith, and Alana Simmons, and PhD students Leslie Bliss Ketchum and Jacob Schultz.

A large number of researchers, conservation groups, agencies and others were involved in helping to complete OCAMP – part of Oregon's larger conservation strategy – and the data used in the project came from many sources.

“A lot of biologists worked on this project, and many of them know each other. So we reached out to certain people, and then they reached out to more people. There were a lot of connections that happened, for over a year, and people supplied us with whatever data they had on animal presence or tracking,” Lafrenz said

Lafrenz’s team mapped out key habitats and travel routes used by different species, and Taylor-Rodriguez’s team used the data to ensure that the maps aligned with real-world species movement and habitat use.

CONNECTING SCIENCE TO TRANSPORTATION SOLUTIONS

While the Priority Wildlife Connectivity Areas map has many applications — from land conservation to renewable energy siting — one of the most immediate uses is in transportation planning. ODOT can use this map to identify road segments that pose the greatest risk for wildlife-vehicle collisions and determine the best locations for wildlife crossings, such as underpasses or overpasses.

Wildlife-vehicle collisions are not only a danger to animals but can also endanger human safety, and can be costly. Strategic planning informed by OCAMP data means transportation agencies can reduce these risks while supporting Oregon’s biodiversity.

In the past, connectivity mapping in Oregon relied heavily on expert opinion, which left decision-makers without the robust data needed to guide policy and planning. The OCAMP project filled

a major knowledge gap, with science-based connectivity models for 54 species representing different movement patterns and habitat needs. These models were combined to create the Priority Wildlife Connectivity Areas Map, which offers a statewide picture of the most critical areas for wildlife movement.

ODFW has presented the Priority Wildlife Connectivity Areas map and tools to organizations including the Association of Oregon Counties and the League of Oregon Cities, as well as Federal land management agency partners.

“There are applications for the Bureau of Land Management, the U.S. Forest Service, the Fish and Wildlife Service, Land Trusts, soil and water conservation districts, watershed councils; basically anyone that’s working in the conservation realm can benefit from this specific tool. There are also use cases for members of the public,” Wheat said.

THE RESEARCH TEAM

Principal Investigator

Martin LaFrenz, Portland State University

The Oregon Connectivity Assessment and Mapping Project (OCAMP) was a multi-year, collaborative effort to analyze and map statewide wildlife habitat connectivity for Oregon’s wildlife. Learn more at: <https://www.oregonconservationstrategy.org/success-story/the-oregon-connectivity-assessment-and-mapping-project-ocamp/>



The Transportation Research and Education Center (TREC) at Portland State University (PSU) is a multidisciplinary hub for all things transportation. We are home to the Initiative for Bicycle and Pedestrian Innovation (IBPI), the data programs PORTAL and BikePed Portal, the Better Block PSU program, and PSU’s membership in PacTrans, the Pacific Northwest Transportation Consortium. Our continuing goal is to produce impactful research and tools for transportation decision makers, expand the diversity and capacity of the workforce, and engage students and professionals through education, seminars, and participation in research.