



# Spatial modeling to maximize western gray squirrel habitat

A WDFW wildlife diversity grant project

The western gray squirrel was recently listed as endangered in Washington due to ongoing habitat loss and fragmentation over the past two decades. Habitat destruction on private forest lands poses a significant threat to the recovery of western grey squirrels, particularly in Klickitat County.

This project uses spatial prioritization modeling to help identify key landowners who could help preserve western gray squirrel habitat by following best land management practices. This can help create connected primary and secondary habitat patches that can form a cohesive landscape network critical for the survival and recovery of the western gray squirrel.



Credit: Ron LeValley

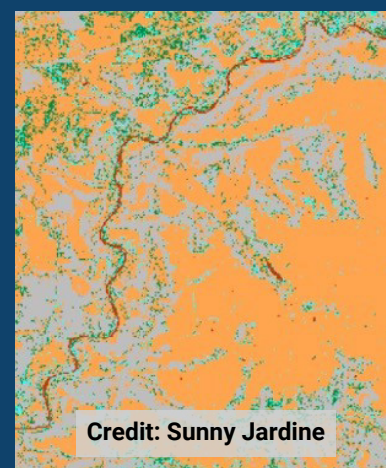
**Project name:** Maximizing Habitat Restoration for the Endangered Western Gray Squirrel in Washington State with a Spatial Prioritization Model

**Primary species benefitting:** Western gray squirrel

**Grant total:** \$100,724

**Grantee & associated entity:** Dr. Sunny Jardine, University of Washington

There are thousands of private forest landowners in Klickitat County whose forest practices have the potential to degrade habitat for the endangered western gray squirrel. Voluntary cooperative agreements are the only means of protecting western gray squirrel habitat on private lands, yet participation and full implementation are still limited. Identifying high-priority landowners is essential for effectively targeting resources to improve the adoption of and adherence to best practices for protecting and restoring western gray squirrel habitat. The project integrates remote sensing data products with optimization approaches to understand how to prioritize limited resources to recruit private landowners to help protect western gray squirrel habitat.



Credit: Sunny Jardine



## Project goals and outcomes

- Develop geospatial data layers and interactive maps of primary and secondary habitat for Washington’s western gray squirrel population.
- Develop resources that discuss the current data limitations to defining western gray squirrel habitat and potential for future analyses to improve habitat identification.
- Develop a flexible spatial prioritization model to identify landowners with habitat that most supports squirrel conservation at a landscape level, enabling targeted incentives for voluntary cooperative agreements.

## Using data and technology to improve conservation decision making

There is growing interest in exploring how optimization, remote sensing data streams, artificial intelligence, and machine learning can help managers make better decisions about how to invest scarce conservation resources. This project’s calibrated spatial prioritization model helps conservationists effectively implement recovery actions by applying well-established methods for cost-effective resource investments. To ensure future compatibility and the potential for expansion, the project packages all data and code with a user manual, allowing future users to integrate new information as it becomes available.



Credit: Ron LeValley

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