

# Wild and Scenic Rivers in Oregon

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# Introduction

“It is hereby declared to be the policy of the United States that certain selected rivers of the Nation which, with their immediate environments, possess outstandingly remarkable scenic, recreational, geologic, fish and wildlife, historic, cultural or other similar values, shall be preserved in free-flowing condition, and that they and their immediate environments shall be protected for the benefit and enjoyment of present and future generations (Wild & Scenic Rivers Act, October 2, 1968).”

In 1968, the United States Congress created the Wild and Scenic Rivers System. These rivers are deemed as having exceptional natural, cultural, and/or recreational values. The Wild and Scenic Rivers Act is notable in that it not only seeks to protect the extraordinary characteristics of these rivers, but also realizes the potential for their recreational use and development. This investigation will attempt to discover similarities amongst Oregon’s Wild and Scenic Rivers, and use the similarities to extrapolate the best recreational rivers in Oregon.

The process for designating rivers as Wild and Scenic is complex, but these rivers generally contain the following characteristics:

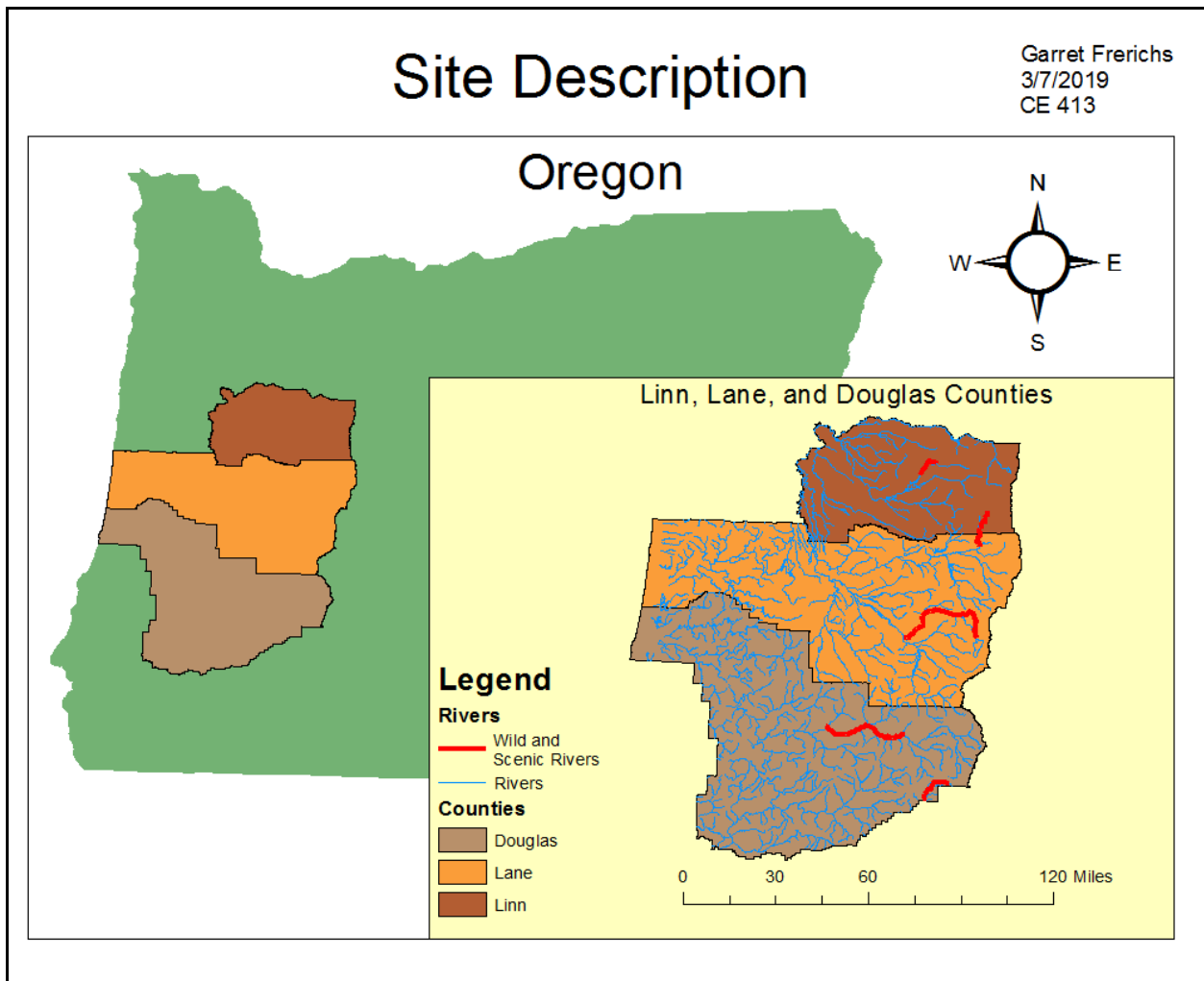
- Watersheds essentially primitive
- Waters unpolluted
- Shorelines are largely undeveloped
- Readily accessible by road

These criteria will serve as the starting point for my investigation into locating the potentially best recreational rivers in Oregon.

# Site Description

This project will examine Linn County, Lane County, and Douglas County. These counties cover Interstate 5 from just north of Salem to just south of Roseburg and extend from the beginning of the Cascade mountain range to the Oregon Coast Mountain Range/coast. Much of this regions Geology is governed by ancient floods depositing nutrient rich sedimentary soils on the valley floor. Many of the regions rivers originate in the Cascade Mountain Range (east) and the Oregon Coast Mountain Range (west). The specific vegetation is widely varied due to the large area, but is mostly a forest vegetation region.

	Linn County	Lane County	Douglas County
Land Area (Sq. Mi.)	2,290 (99.2%)	4,453 (96.4%)	5,134 (98.1%)
Water Area (Sq. Mi.)	19 (0.8%)	169 (3.6%)	98 (1.9%)



# Data

<u>Name</u>	<u>URL</u>	<u>Data Type</u>	<u>Geographic Coordinate System</u>
National Wild and Scenic River Segments (Feature Layer)	<a href="https://enterprisecontent-usfs.opendata.arcgis.com/datasets/national-wild-and-scenic-river-segments-feature-layer">https://enterprisecontent-usfs.opendata.arcgis.com/datasets/national-wild-and-scenic-river-segments-feature-layer</a>	Shapefile	GCS_North_American_1983
Counties	<a href="https://spatialdata.oregonexplorer.info/geoportal/details?id=02fae1737bb34333bf05e3d9685d5363">https://spatialdata.oregonexplorer.info/geoportal/details?id=02fae1737bb34333bf05e3d9685d5363</a>	Shapefile	NAD_1983_Oregon_Statewide_Lambert_Feet_Intl
Oregon Rivers	<a href="https://spatialdata.oregonexplorer.info/geoportal/details?id=01606665b1034dc6877fbad58bb9879a">https://spatialdata.oregonexplorer.info/geoportal/details?id=01606665b1034dc6877fbad58bb9879a</a>	Shapefile	NAD_1983_Oregon_Statewide_Lambert_Feet_Intl
Urban Growth Boundaries	<a href="https://spatialdata.oregonexplorer.info/geoportal/details?id=dd3a1c8fbd7448e2a8e9351c8b1a4e03">https://spatialdata.oregonexplorer.info/geoportal/details?id=dd3a1c8fbd7448e2a8e9351c8b1a4e03</a>	Shapefile	NAD_1983_Oregon_Statewide_Lambert_Feet_Intl
Watersheds	<a href="http://www.horizon-systems.com/NHDPlus/NHDPlusV2_17.php">http://www.horizon-systems.com/NHDPlus/NHDPlusV2_17.php</a>	Shapefile	GCS_North_American_1983

# GIS Methods

## 1) Projecting all data

All data was projected to NAD\_1983\_Oregon\_Statewide\_Lambert\_Feet\_Intl

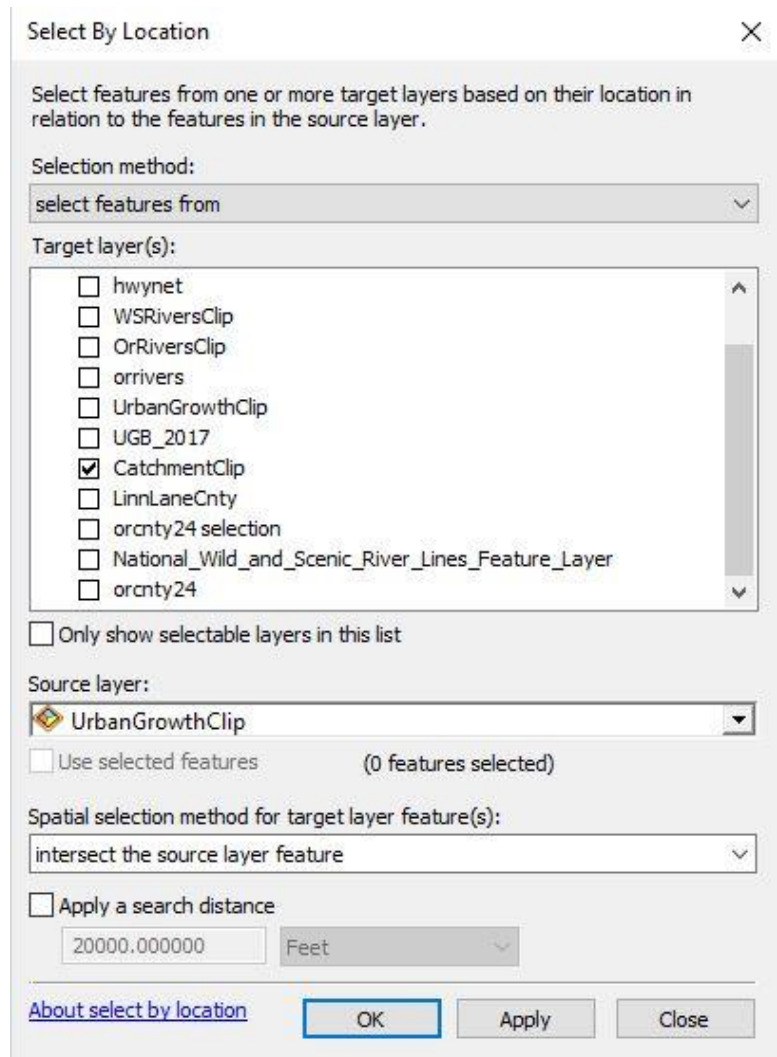
## 2) Clipping all data to only that which is contained within the project site

All data was clipped based on a layer made from the selection of Linn, Lane, and Douglas counties.

## 3) Filtering potential rivers for primitive watersheds and undeveloped shore lines

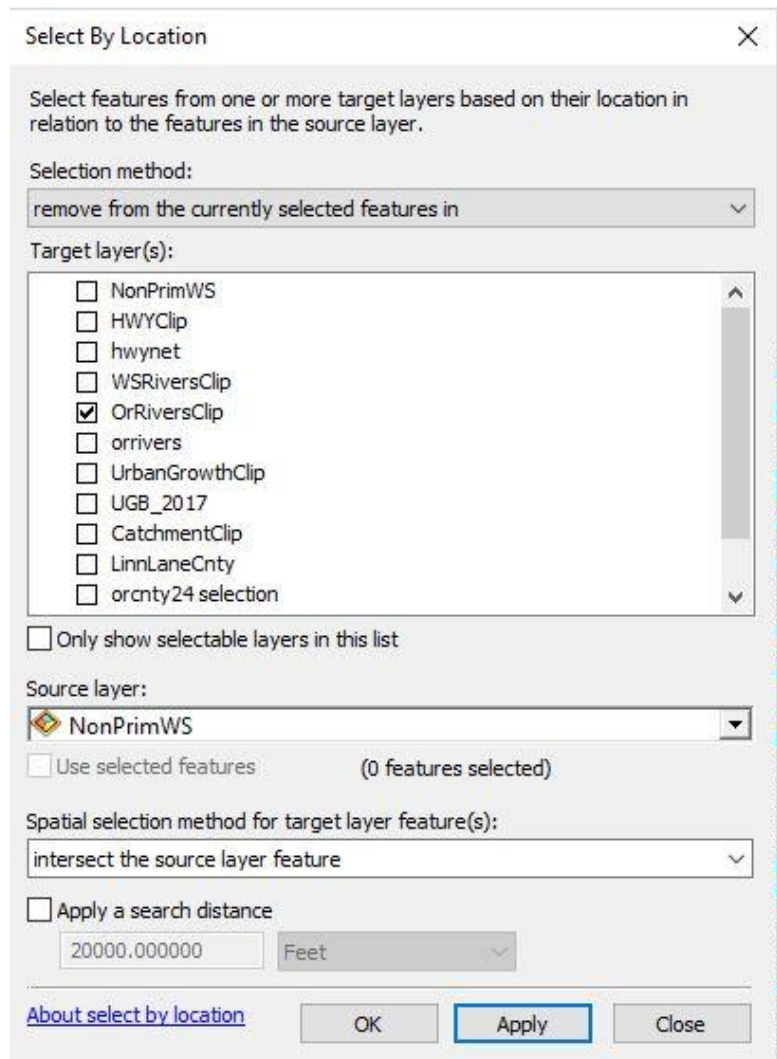
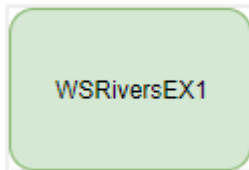
Select the catchments that intersect Urban Growth boundaries and create a layer from the selection.

Output:



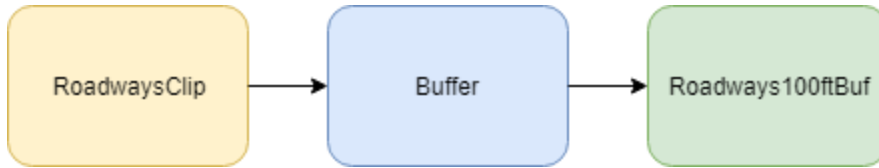
Select all rivers from the Oregon Rivers layer clip. Then, use Select By Location to deselect all rivers that intersect the layer “NonPrimWS”

Output:



### 3) Filtering rivers for ease of accesses from roadway

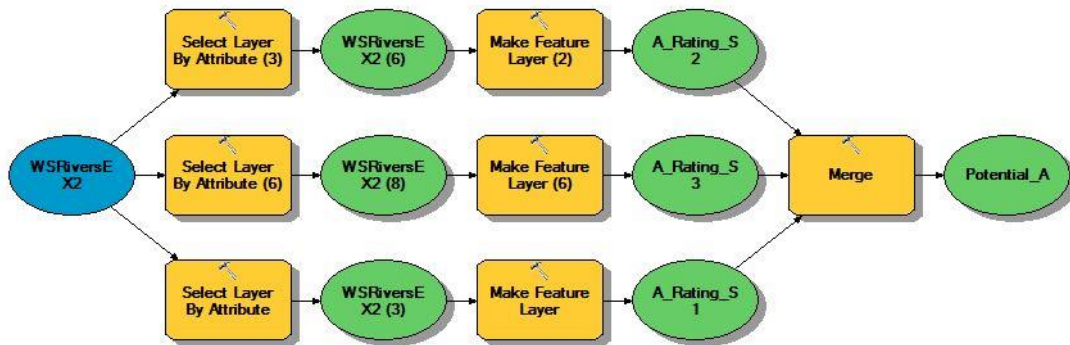
Create a buffer around roadways



As before, use select by location to select features from “WSRiversEX1” that intersects “Roadways100ftBuf”. Create a layer from selected features, WSRiversEX2.

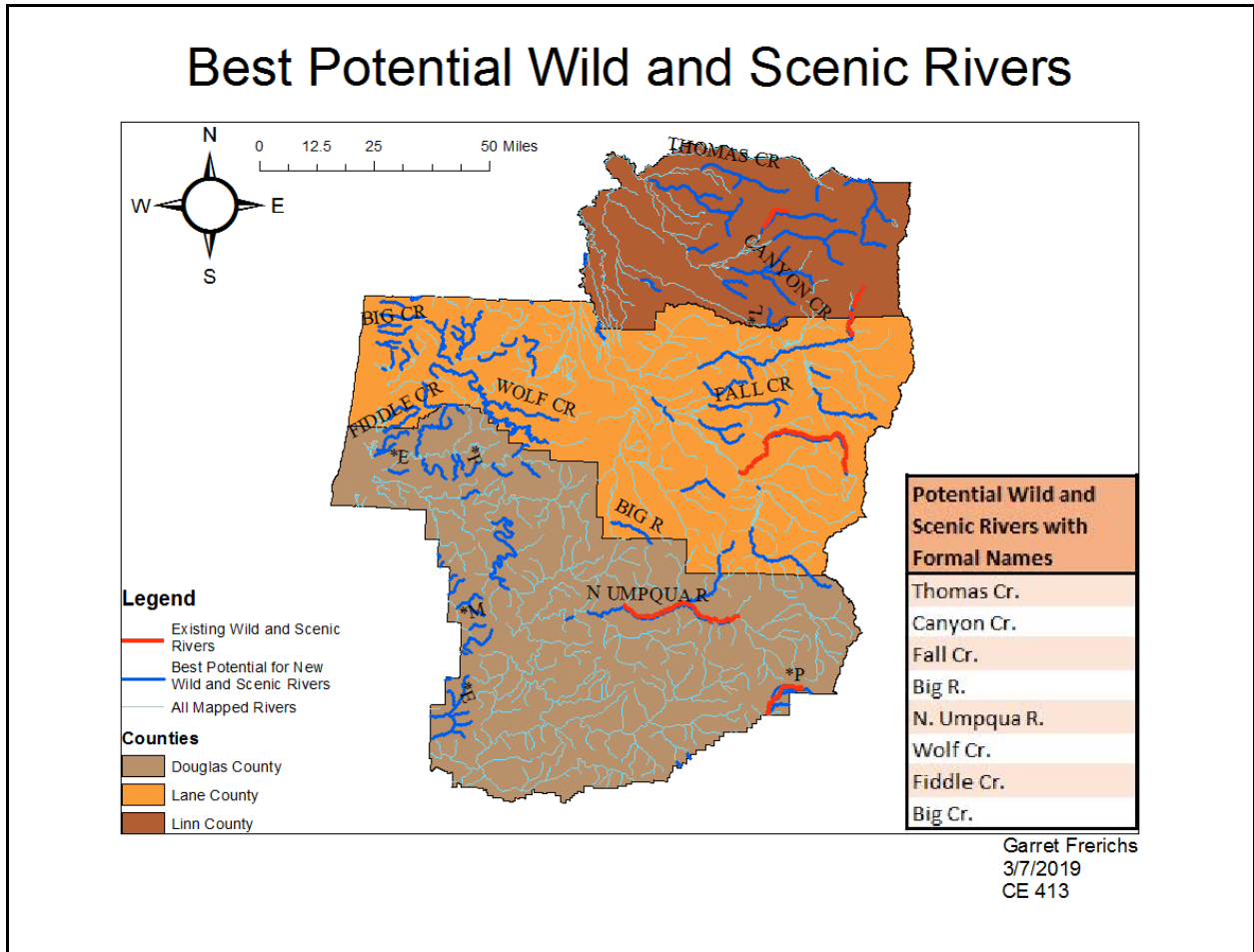
#### 4) Filtering rivers by water quality

This layer, WSRiversEX2, was then filtered through information found in its attributes such as its temperature and habitat diversity. This was done with model builder.





# Results



This map depicts rivers in Douglas, Lane, and Linn County that this process has outlined as potential having high recreational and scenic values. Pictures of what a few of these rivers look like can be found on the next page.

Images of some of the rivers this project has isolated:



Photo of Thomas Creek featured in a kayaking magazine



Canyon Creek, a popular hiking destination



Fall Creek, known for excellent swimming holes



Toketee Falls on the North Umpqua River

As seen in the images, many of the rivers that this process isolated could definitely be described as scenic and as having great recreational value. As for accomplishing the goal, to isolate rivers with high scenic and recreational value, this project was successful. However, it can be called into question what the odds are that any river selected in the projects site has these features. By the nature of how rivers are formed and flow, they are often in scenic areas by default. Furthermore, the watersheds used from NHDPlus data did not perfectly mesh with the rivers. Perhaps isolating catchments of this rivers using GIS and a DEM would provide better results

## Appendix

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