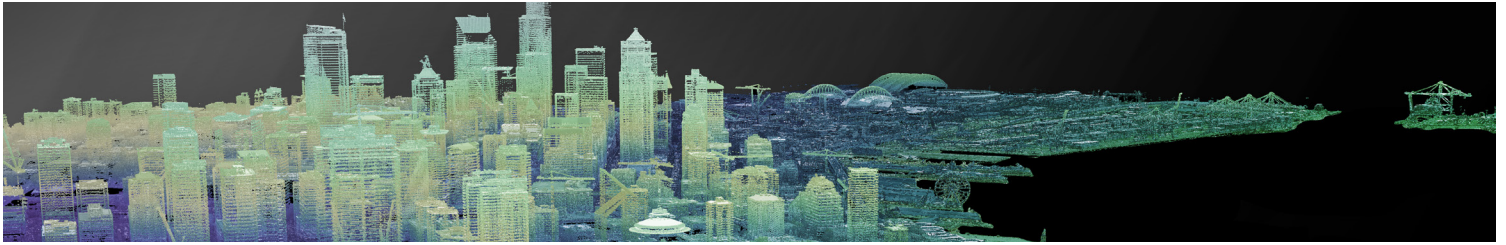
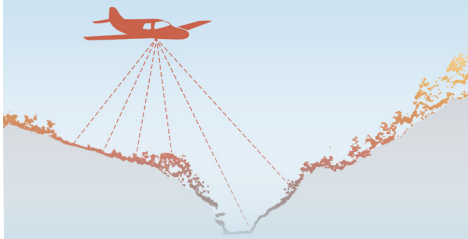


# The Washington Geological Survey Lidar Program



## WHAT IS LIDAR?

Light Detection and Ranging (Lidar) is a technique to measure the distance from a sensor to an object, which is similar to radar. When mounted on a light aircraft, lidar can very accurately measure the elevation of the earth, even in areas covered by vegetation.



## STATE LIDAR PROGRAM

The Washington Geological Survey (WGS) is funded by the Washington State Legislature to collect and disseminate lidar data and derived products.

The goals of the program are:

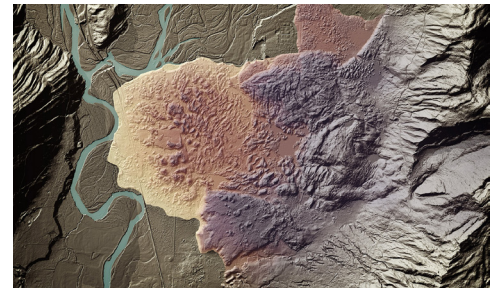
- » Collect consistent, high-quality lidar data at a statewide scale
- » Provide lidar data for all applications and use cases in Washington
- » Create a centralized lidar database available for public download
- » Provide outreach to inform, educate, and assist with lidar collection and interpretation.

## WHAT IS LIDAR USED FOR?

Lidar provides high quality, accurate elevation data for many natural resources applications.

### GEOLOGIC HAZARDS

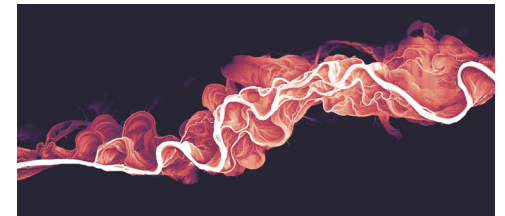
Because light can pass through spaces between leaves, lidar “sees” through vegetation. This reveals landslides, faults, and flood and tsunami inundation zones under trees, giving a better understanding of geologic hazards.



Lidar of Devil’s slide (Whatcom County)

### SALMON HABITAT

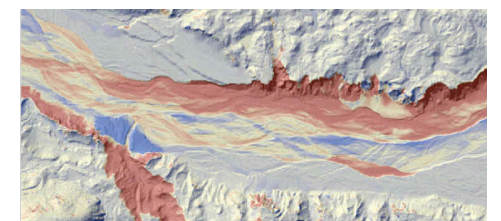
Lidar can identify optimal fish habitat and determine which restoration method (such as placement of woody debris or redesigning culverts) is best for habitat health and fish passage.



Skagit River viewed with lidar

### CHANGE DETECTION

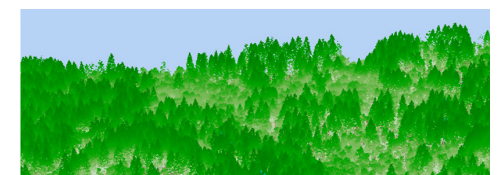
Lidar captures a moment in time. Multiple lidar collections over the same features show how they change and move. In the image to the right, red shows removal of river sediment and blue shows buildup.



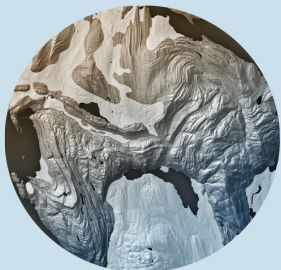
Change of the Toutle River with time

### FORESTRY AND WILDLIFE

Lidar is used to measure tree height and assess vegetation density. This helps quantify forest health and can pinpoint where wildfire prevention is needed.



Lidar measures heights of trees



Folded sandstone layers in the Chuckanut Mountains



Glaciers on Mount Rainier

### LIDAR WEBPAGE

More information on the Washington Lidar Program, as well as information on current and future projects, is available on the lidar webpage. Additional lidar resources and story maps can be found on the website:

<https://www.dnr.wa.gov/lidar>

### CONTACT US

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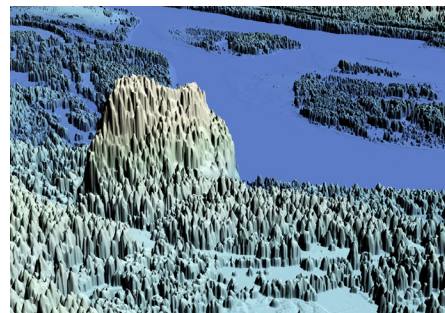
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### STATEWIDE LIDAR COVERAGE

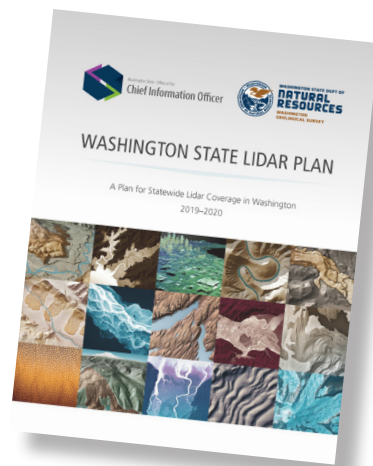
Collection focuses on areas with no previous lidar, or outdated lidar, in order to create a consistent, statewide database. The WGS doesn't accomplish this on its own—we apply for grants and work with partners to provide the best data for everyone.



Beacon Rock lidar with trees

### STATE LIDAR PLAN

The WGS works with stakeholder groups to set priority areas, develop quality standards, and build partnerships. The Washington State Lidar Plan lays out a collection strategy that is revised on a yearly basis. The plan can be found on the WGS webpage, along with an interactive story map that shows Washington's current lidar coverage and goals.



### WASHINGTON LIDAR PORTAL

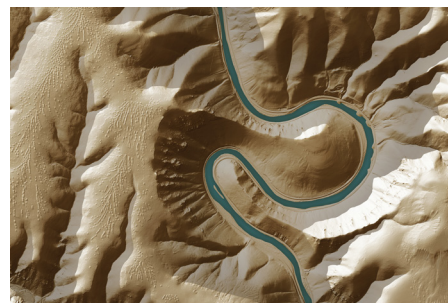
Lidar data and derivative products, including digital terrain (bare earth), digital surface (top surface) models, and hillshades are disseminated through the Washington Lidar Portal:

<https://lidarportal.dnr.wa.gov>

Data can be viewed and downloaded from the site. The portal is updated frequently with new and historical collections.



Mount Adams lava flow from lidar



Yakima River bend from lidar



WASHINGTON STATE DEPT OF  
**NATURAL RESOURCES**  
WASHINGTON  
GEOLOGICAL SURVEY



Mima Mounds Natural Area Preserve