



# Q&A

## Pacific Northwest



**Q1: Take a look at F,2. Some land surveyors are marking points for a new building. Why do you think they need to ‘stake’ out these points?**

**A1:** “Staking out” of a building means marking the exact location and boundaries where the building will be constructed. Land surveyors use stakes, flags, or other markers to outline the building’s foundation and other vital features on the land.

Land Surveyors are trusted experts when it comes to staking out buildings. They are trained to measure land and angles down to fractions

of an inch. With land not always perfectly flat, surveyors know how to account for elevation changes in underground features and abide by strict legal guidelines. This helps builders know where to dig, pour concrete, or place walls so the building is correctly constructed.

For a bonus point, what land surveying equipment is the Bengal Tiger using?

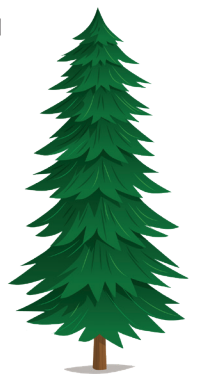
**Q2: Oregon and Washington, which have historically heavily contributed to the United States lumber production, are two states that are part of the Pacific Northwest. According to recent data, Oregon leads the nation, producing over 5 billion board feet of lumber annually, while Washington contributes about 3.75 billion. How do land surveyors play a role in the lumber industry?**

**A2:** Before trees can be cut down, Land Surveyors play a crucial role in assessing and preparing the site. Their work ensures that logging operations comply with environmental regulations, property boundaries, and sustainable forestry practices. Here is a simple look at the main steps taken:

**Performing a Boundary and Property survey.** Surveyors determine the exact boundaries of the land to ensure logging occurs only within the permitted area. Land Surveyors do this by marking property lines to avoid disputes and ensure compliance with legal agreements.

**Topographical Mapping.** By mapping the terrain, including slopes, water bodies, and soil conditions, land surveyors help logging companies plan safe and efficient harvesting routes. They also identify protected land areas, water sources, and wildlife habitats, which helps protect the environment and prevent long-term damage to the ecosystem.

**Marking Trees for Harvest.** Surveyors, in some cases, help foresters by marking trees for designated removal or protection. This selective logging helps maintain the forest’s overall health. Working this way helps minimize environmental damage, prevent legal conflicts, and maximize efficiency.



### Q3: Walking down the stairs in D,2, the surveyor is wearing a cool piece of tech! What survey instrument could this be?

**A3:** The surveyor is wearing a special shoulder-mounted device called the Navis VLX, which helps him map out the world around him. The Navis VLX has sensors that can see and measure everything around it in 3D. It can also take pictures and

create detailed maps of both indoor and outdoor places. The cool thing is that he doesn't need to use his hands because the device is easy to wear, helping professionals like him be more efficient in creating detailed maps of places!

### Q4: What industries related to surveying are represented in this scene?

**A4:**

**Construction:** Land surveying is essential for site planning, layout, and ensuring structures are built in the correct location.

**Agriculture:** Precision farming uses surveying techniques for land management and irrigation planning.

**Environmental Science:** Surveyors help in mapping ecosystems, track environmental data and help with conservation efforts.

**Utilities:** Surveying is used for laying power lines, water pipelines, and telecommunications networks

**Transportation:** Roads, railways, and airports rely on surveying for alignment and layout.



### Q5: Which ocean is the Pacific Northwest states bordered by? Which environmental reasons make this a challenging coastline to survey?

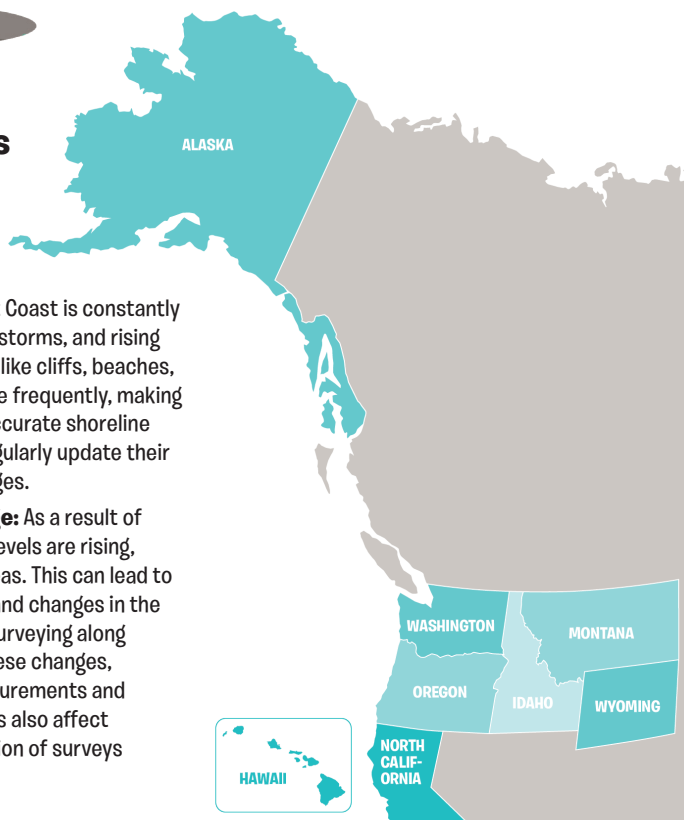
**A5:** The Pacific Ocean borders the West Coast; there are multiple environmental reasons why this coastline is difficult to survey...

**Tectonic Activity:** The West Coast lies along the Pacific Ring of Fire, where the Pacific Plate meets the North American Plate. This creates significant tectonic activity, including earthquakes, landslides, and shifting fault lines like the San Andreas Fault. These movements can rapidly change the land's position and elevation, making it hard to maintain accurate and stable benchmarks.

**Harsh Weather:** The West Coast is known for its unpredictable weather, including heavy fog, rain, and storms, particularly in Northern California and the Pacific Northwest. These conditions can hinder visibility, reduce equipment effectiveness, and slow fieldwork.

**Coastal Erosion:** The West Coast is constantly eroded due to wave action, storms, and rising sea levels. Coastal features like cliffs, beaches, and dunes can change shape frequently, making it challenging to maintain accurate shoreline surveys. Surveyors must regularly update their maps to reflect these changes.

**Impact of Climate Change:** As a result of global climate change, sea levels are rising, which threatens coastal areas. This can lead to flooding, land submersion, and changes in the location of high tide lines. Surveying along the coast must consider these changes, which can complicate measurements and predictions. Rising sea levels also affect tidal datums and the precision of surveys tied to mean sea level.





**Q6: Technology in agriculture is constantly being developed to increase crop yields and efficiency. There's a tractor in this scene, can you tell us how surveying equipment might be used to help the farmer?**

**A6:** Just like car satnavs, GPS (Global Positioning Systems) can help tractors know where to go so they don't waste time or go over the same spot twice. It's super smart, so it can follow the best path all on its own! These "robot tractors" can even work without a driver, helping farmers save time and ensure the tractor is always doing the right thing, like planting seeds or watering plants.

Surveying combined with science can measure things like moisture levels, soil nutrients, and crop health. These tools can help identify which areas need more resources to grow better, which is added to a map of the farm. Mapping makes it easier to care for crops because farmers can know exactly what each part of the farm needs.



**Q7: : The poster shows that many national monuments are located in the Pacific Northwest. Can you guess how many national parks there are in the Pacific Northwest?**

**A7:** The Pacific Northwest is made up of the states of Alaska, California, Hawaii, Idaho, Montana, Oregon, Washington, and Wyoming. These states are home to several beautiful national parks, we estimated a total of 26:

California has the most with 9 national parks in this state...

Alaska = 8

Washington = 3

Hawaii = 2

Oregon = 1

Wyoming = 1

Montana = 1

Idaho, Wyoming and Montana share Yellowstone National Park

See the full list at:

<https://www.nationalparktrips.com/parks/us-national-parks-by-state-list/>