

The Tree at Lodgestick Bluff



Bruce P. McCammon

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In Search of the Tree at Lodgestick Bluff

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I begin by acknowledging Nick Zentner's creation of a series of live stream programs about the geology of the Pacific Northwest, geologic procedures and important geologists of the past. Nick takes on some of the big questions that lay people like myself tend to ask. He does so in an entertaining way and clarifies theories and concepts that are hard for people to grasp due to both time and geographic scales. His YouTube series of "Nick on the Rocks", "Nick in the Yard", and "Nick on the Fly" are a great way to learn about the geologic history of the northwest. Much of the information here came from Nick's presentations. I am summarizing his information and any errors are mine.

Landmarks are an essential part of exploration. They provide a point of reference as you move through an unfamiliar landscape. Landmarks are features that stick out on the landscape and become a source of familiar comfort - "I am here". Their presence and significance are passed on through oral histories or locations on maps.

There is an ancient tree on a vertical, basalt wall in North Central Washington that has endured the Ice Age Floods and millions of years of weathering. The tree precedes all known accounts of human occupancy on the land. It stands as testimony to generations of witnesses and inspires us to ask questions about its origin and how it has been recorded over time.

I took an immediate interest in this landmark when I heard Nick describe it by reading from the journal of Lieutenant Thomas Symons, written in 1881. On January 20, 2020, Nick, a geology professor at Central Washington University, hosted a YouTube live-stream event to discuss the Giant Ripple Dunes (West Bar) near Crescent Bar in central Washington. Early in his discussion he read Symons' journal entry describing the tree. He showed recent photos of the tree taken from the water at the base of the cliff and from a drone. At the end of his show, Nick drove to a point above West Bar and pointed to the cliff face on which the tree resides. My interest in seeing the tree picked up. I was motivated to see the tree simply to be able to say that I was in a position occupied by Symons during his 1881 expedition. I wanted that personal experience but did not realize how much the search for the tree would allow me to discover written and mapped history with which I was not familiar. I visited the exact site where Nick pointed to the tree and scanned the cliff face with binoculars and a scope. I could not find the tree. I talked with a local man who has lived in the area for over 30 years. He assured me that, after hundreds of boat trips in the area, there was no tree on that cliff face. Though disappointed, my determination to find the tree increased. In conversation with Bill Layman, local historian, author and dear friend, I told my woeful tale of failure to find the tree. Bill quickly remarked "Oh yes, I will take you to see it". The hook was set.

The Tree

The tree is located in Kittitas County, Washington about 4.5 river miles below Crescent Bar (Figure 1). The tree is about 450 feet above the average water level of Wanapum Lake (564 ft msl) at an elevation of approximately 1,014 feet msl. The cliff top is at an elevation of 1,400 feet msl. The cliff faces northeast. The lava in which the tree is embedded was formed about 15 million years ago. While it is possible to see the tree from the east side of the Columbia River, access to a viewpoint may require permission to be on private land. The best view is from the water.

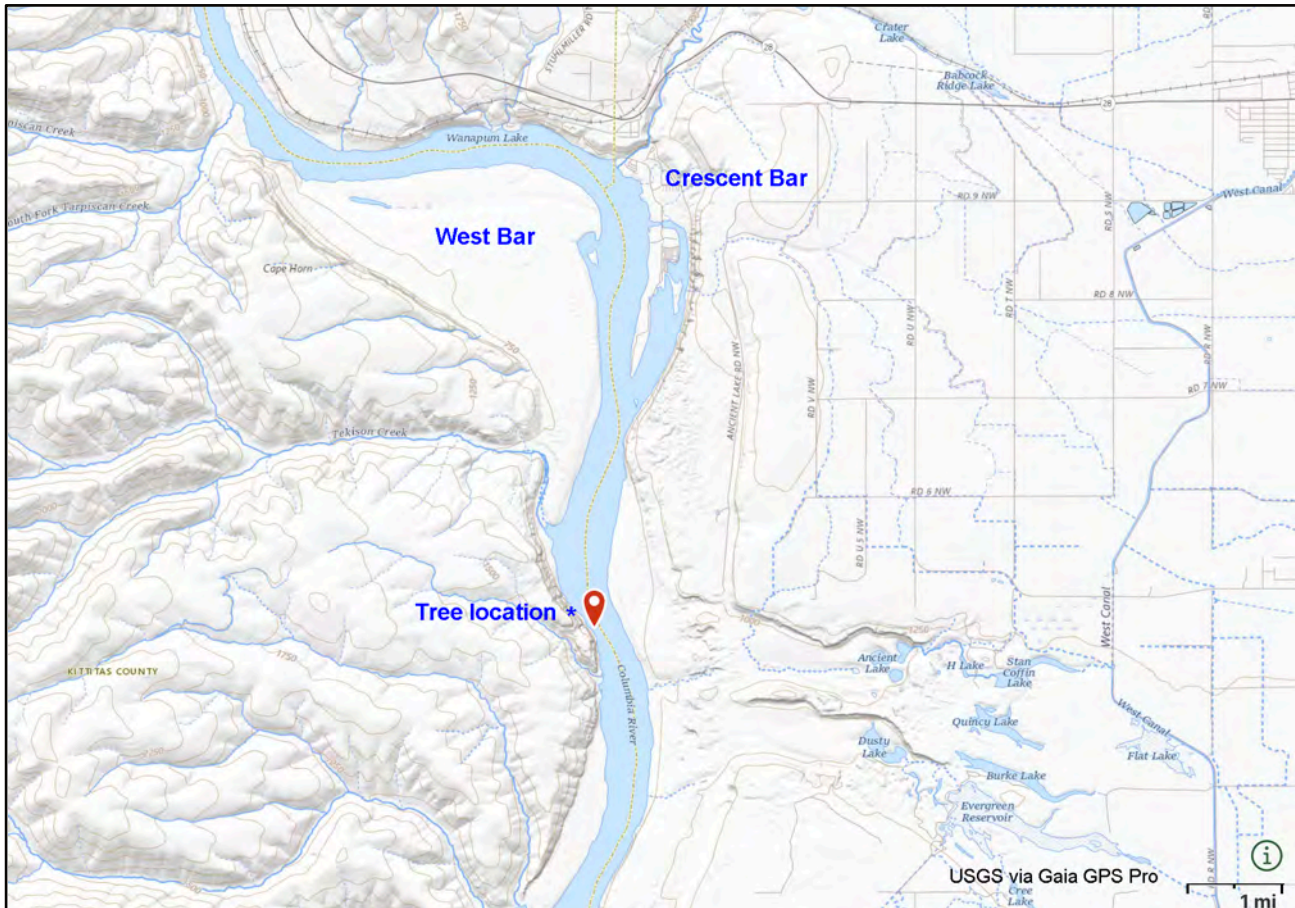


Figure 1. Location map

The elevation of the tree is significant. 18,000 years ago, the largest Ice Age flood reached an elevation of 1,610 feet, well over the tree embedded in the basalt cliff. This was a Missoula flood that was 1,000 feet deep and traveling at 60 miles an hour (Zentner, 2020). The forces on the tree had to be enormous. At least one other flood may have raked across the tree when, 14,000 years ago, a smaller flood resulted from the breach of Glacial Lake Columbia after the Okanogan Lobe retreated. This flood was about 300 feet deep and traveled at 40 miles per hour (Zentner, 2020). This flood's elevation of about 1,000 feet may have kept the flood water below the tree but it is likely that a few tens of feet of flood elevation could have easily been added to the churning mix. It is this flood that produced the Giant Ripple Dunes we see in West Bar today. A smaller flood occurred about 13,300 years ago to produce the relatively smooth, lower bench below the dunes and next to the river's edge (Zentner referring to a paper by Richard Waite).

The enormity of these floods is difficult to grasp. The canyon we know today was over-topped by water racing by at 60 miles per hour. The first flood, the biggest one, scoured basalt layers and carved massive pools and coulees. It is likely that the tree was exposed by the flood's ripping apart of the basalt layers as it scoured the area. Whether directly exposed to the flood or enduring the extensive erosion created by the flood, the tree stood fast under extreme pressure. It is there to stay!

Context

The photos below provide context for the tree which is circled in the top photo. You'll notice that it is slightly above the middle of the wall and sits vertically. The closeup photo allows you to see that the tree resides in a layer of pillow basalts. Smart people have come up with reasoned explanations for questions like “How can a wood item be in basalt? Why did it not burn up?” and “How did it get there?”



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How did the tree get there? Why didn't it burn up?

George Beck, a geology professor at Central Washington University, is credited with the first extensive investigations of what is now Ginkgo Petrified Forest State Park. He wrote a book titled "Discovery of the Ginkgo Petrified Forest" in the 1960's. While he applied himself to the study and interpretation of the area, it is a very large stretch to say that he "discovered" the site. Many others preceded him in seeing and documenting the petrified trees in the area.

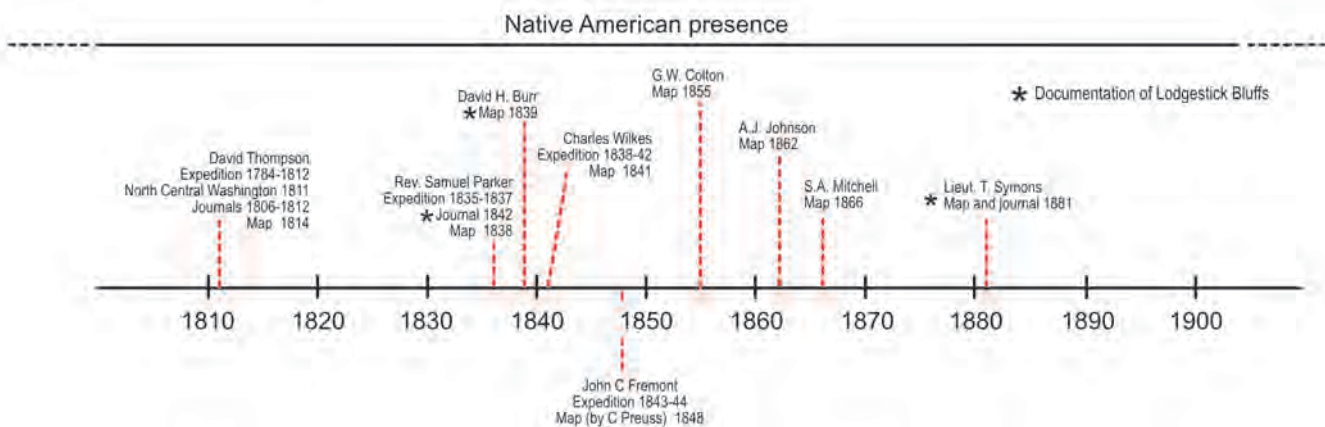
This tree is not the only representative of petrified logs along the Columbia River in this area. A major expression of the logs is evident at the Ginkgo Petrified State Park near Vantage, Washington. All of the petrified logs are embedded in one pillow basalt layer that is 15 million years old. One current theory about the sequence of events that led to this entombment of the logs in lava is that lahars (volcanic mudflows) carried a wide variety of tree species from the Cascade mountains, ending with the placement of the logs in a lake where they settled into the lake sediments. Subsequent lava flows overtook the lake and, due to the presence of water, the lava cooled to form pillow basalts. This also explains how the logs survived the hot lava without burning up. A second theory is that the logs were transported by rivers flowing from the north. The truth is still up for grabs. What is known is that the logs represent many species, from cypress to Douglas-fir and redwood (Zentner, #7, March, 2020). Variable climatic regimes are a part of the solution to this mystery. But the source(s) of the logs is currently an open question.

The tree as a landmark

Figure 2 shows a timeline of expeditions by European explorers and missionaries who created journals of their trips, and maps of the route and area through which they passed, or both. All of these people, including the Hudson Bay trappers who preceded them, were faced with unknown hazards and risks. The available journal entries and maps are amazingly clear and detailed. Three of the expeditions or mapping efforts specifically reference the tree below West Bar: Parker, Burr, and Symons.

Figure 2.

Chronology of Early Exploration and Mapping with an Emphasis on Lodgestick Bluffs



It is well known that Native American people were present in North Central Washington for tens of thousands of years before European explorers and missionaries entered the area. The discovery of clovis points in East Wenatchee in 1987 documents the presence of Native Americans about 13,000 years ago. There is little doubt that Indigenous people were aware of the petrified tree staring at them from the cliff face below West Bar. In an email to Nick Zentner, Jim Mattila, University of Washington, states: "... it is safe to say local Native Americans were aware of the petrified material in short order, and moreover utilized it for projectile points and the like...". He concludes his note with a caution - "...the tree or its remains NEEDS to be left alone as it's a historical and cultural treasure...". I totally agree.

Today, Native Americans in North Central Washington are focused on re-capturing and preserving their history and language. They are people who remember their past through oral histories and story telling. It is my hope to learn how Native Americans used the tree at Lodgestick Bluff and how they incorporate it into their oral history.

Lodgestick Bluff - early documentation

Rev. Samuel Parker, A.M., Journal of an Exploring Tour Beyond the Rocky Mountains, under the Direction of the A.B.C.F.M. in the Years 1835, '36. And '37 Containing a Description of the Geography, Geology, Climate, Productions of the Country, and the Numbers, Manners, and Customs of the Natives with a Map of Oregon Territory. Mack, Andrus, and Woodruff, Ithaca, N.Y., **1842.**

Chapter XXII of Parker's journal begins with a summary:

A summary of the Indians of the Upper country - names of the tribes, their locations and numbers - leave Walla Walla for Fort Vancouver - swift passage down the river - run the Falls-Cascades-dangerous eddy - arrive at Vancouver -steam boat excursion.

Page 305 of the journal contains his description of the tree at Lodgestick Bluff:

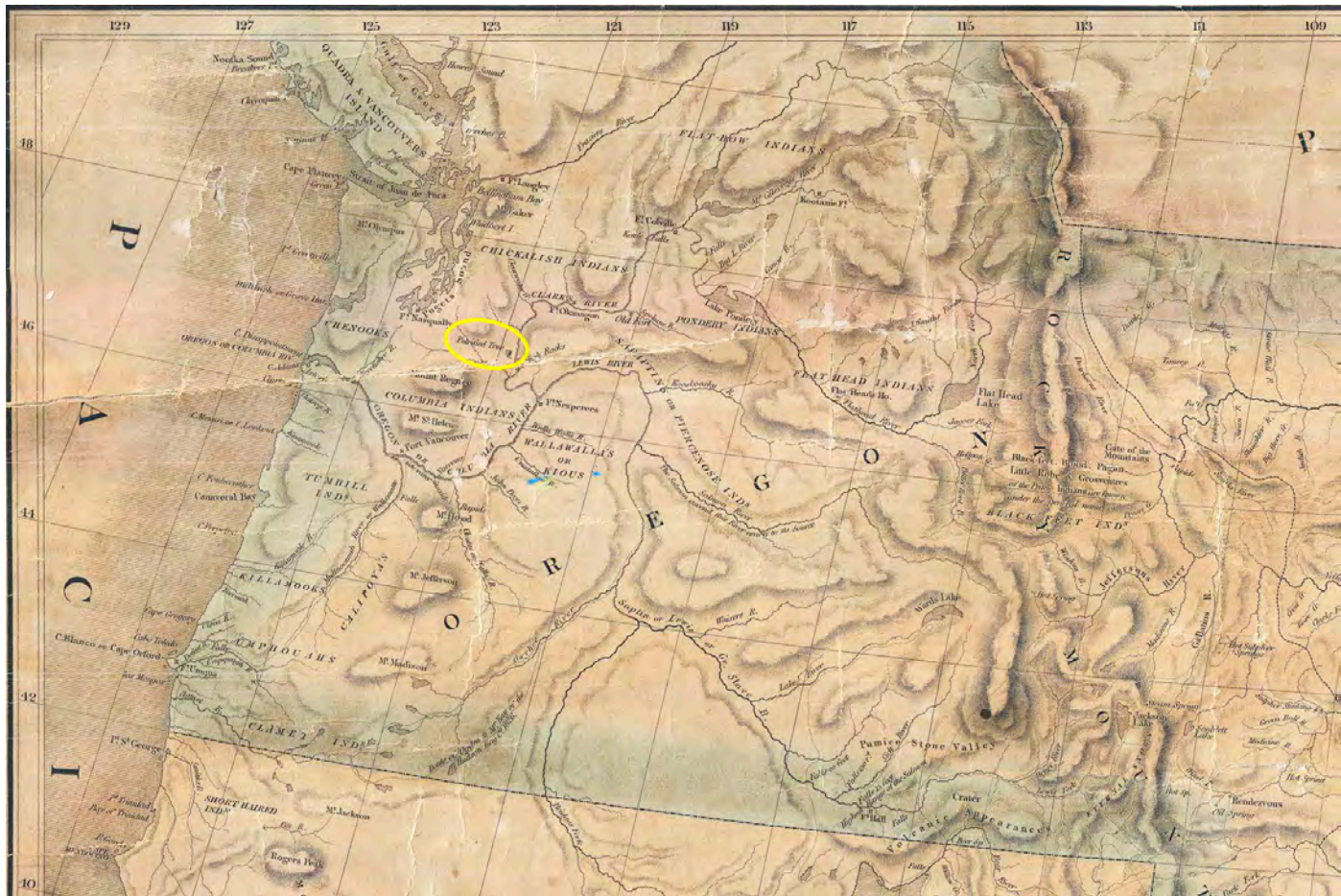
In the afternoon we passed a perpendicular section of rock, two hundred and fifty feet high; half way to the top of which, a petrified tree of considerable magnitude is suspended. It appears to be retained in its place by having its roots inserted in the crevices of the rocks, between layers of different eruptions. How it procured its elevated situation is quite a mystery. It could not have vegetated there, unless at the time of its growth, it was supported by a surface upon which to rise; and taking the present condition of the rocks, it could not be deposited there by any floods of the river, and certainly it could not in such case, intertwine its roots in the crevices of the rocks. Gentlemen of the Hudson Bay Company, and others who navigated this river, have amused themselves by shooting off pieces with their rifles, and they assured me it was wholly a petrification. Our encampment this evening was a few miles above Long Rapids, which extend nine miles.

What a remarkable description. Even though he underestimates the height of the cliff face, he places the tree properly about halfway up. Photos today do not shed any clear light on how the tree is attached. Remember, this tree withstood the fury of the largest Ice Age flood. The origin of the tree and how it got there are still subjects of debate with no definitive answer. He introduces the fact that the Hudson Bay trappers were well aware of the tree. He confirms that the tree is petrified through oral history rather than first-hand experience.

Parker's map does not place or identify the tree at Lodgestick Bluff. Nonetheless, the map is a remarkable work for the time and will be discussed in another paper.

David H. Burr, Map of the United States of America with Parts of Adjacent Countries by David H. Burr, (Late Topographer to the Post Office), Geographer to the House of Representatives of the U.S., **1839**.

This map by Burr is considered by some to be one of the most significant maps in the opening of the American West to the Gold Rush that transformed our nation. Burr's map incorporates notes and mapping prepared by Jedediah Smith between 1804-1806 (www.historiaposters.com/products/david-burrs-map-of-north-america-1839). Burr's map is the sole representation of Smith's work after his original manuscripts were lost.



Area extracted from David Burr, 1839. Note highlighted area (enlarged below)



Burr's map is a fascinating study. Tribal lands are labeled on the parent map, rapids are located and rivers are named. Topographic features are shown using shading. He also includes notations like "The Salmon ascend this River nearly to its Source". All this in 1839, mind you.

Burr's map is the first instance of a notation of the petrified tree. It may be referring to the larger concentration of petrified logs in the Vantage area (Ginkgo State Park). Since the label is singular, "tree", I think it likely that it refers to the tree at Lodgestick Bluff since that tree was known previous explorers.

Lieut. Thomas Symons. Report of an Examination of the Upper Columbia River and the Territory in Its Vicinity in September and October, 1881 to Determine Its Navigability, and Adaptability to Steamboat Transportation. Made by Direction of the Commanding General of the Department of the Columbia, **1882**. (Symons was the Chief Engineer of the Department of the Columbia, Corps of Engineers, U.S. Army)

Page 45 of Symons' journal describes the petrified tree and names the cliff Lodgestick Bluff on Alfred Downing's map:

The portions of the river in which this rock is situated is very grand and beautiful. The banks are nearly precipitous bluffs, form 2,000 to 3,000 feet high, composed of columnar black basalt, which takes many wonderful shapes and produces many pleasing effects, rivaling the famous Giant's Causeway of Ireland in weird beauty. The columns are in every conceivable position, sometimes piled up like cordwood, in some places erect, and in others inclined; some great masses are twisted and bent, forming niches, arches, grottos, crowns, &c. In one of these niches, a thousand feet above the river, there lies in an inclined position a stick of timber, barkless and white with age. It never grew there. It is a thousand feet from the top of the vertical bluffs, and could not have been put there from above. The only way in which it could have reached its present position was by being caught there when the river was a thousand feet higher than it is now, drifting in and lodging, and being left there by the receding river.

My pilot, "Old Pierre," an Indian pilot and voyageur of the old Hudson Bay Company, said that this log was a landmark in the days when this company transported their furs and merchandise up and down the river in bateaux. He says that Indians always considered that the log was left there when the river was up at that height. This is one link in the chain of evidence that proves that at no distant date the Columbia was a stream of such magnificent proportions that present river is a tiny rivulet compared with it. If this be the true explanation of the location of this log, it is a remarkable example of the preservation of wood for a long time. It may be that the log is petrified, but I had no means of getting at it to determine.

This is Thomas Symons interpreting the flood history of the Columbia River based on a tree seen high above him. He goes on to cite other evidence of historic floods "of such magnificent proportions". Apparently, Symons had not seen Parker's 1835 account which states that the tree is, in fact, petrified.

His inclusion of oral history from the Hudson Bay trappers, who state that Indians were not only aware of the tree but had a workable understanding of its placement by the river at a much higher river level, supports his theory for the tree's placement by the river.

I imagine that Symons would have been astonished if he had known the history of the formation of the multiple layers of lava and the Ice Age floods through the area. I also believe that he would have readily accepted the current scientific evidence for the floods.

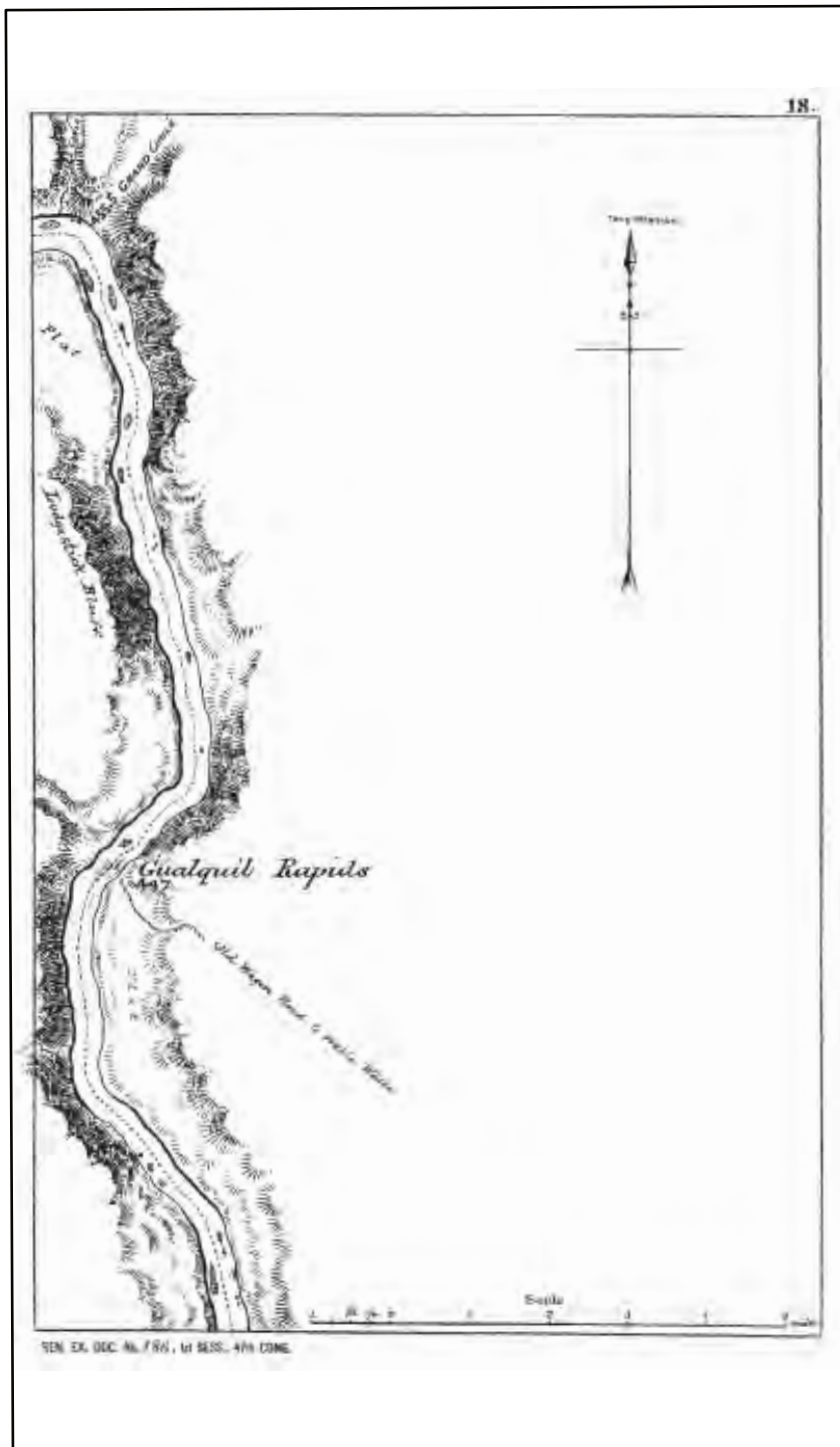
This journal description is really quite remarkable as a historic record within the context of this grand expedition. Personally, however, I find the mapping prepared by Alfred Downing during the expedition, to be as significant - perhaps more important given the history of mapping efforts that preceded the Symons expedition. Alfred Downing was the Topographical Assistant during the Symons expedition. His detailed drawings of the river are magnificent and worthy of careful study.

Downing's drawings are published as part of the expedition journal beginning on page 135: *Map of the Upper Columbia River, from the International Boundary Line to the Snake River, on a Scale of One Inch to Two Miles, 25 Sheets and an Index Sheet. From Surveys and Examinations Made in 1881, by Lieut. Thomas Symons, Corps of Engineers, Chief Engineer, Department of the Columbia, and Alfred Downing, Topographical Assistant, U.S. Army. Drawn by Alfred Downing.*

This map, Plate 18 in a series of 25, is, like the others, remarkably detailed. The dense shading shows the cliff face on which the petrified tree is located. This the first known instance of the use of the location name, Lodgestick Bluff. The term "lodgestick" is almost certainly associated with the wood frame construction of Native American lodges which the expedition had encountered frequently during the early portion of their journey.

Downing's maps contain many notations about cultural features seen along the river. Here Downing includes reference to "Old wagon road to Walla Walla". Many of the features shown and named on the maps are now submerged by slack water behind the series of dams along the Columbia River. Hence, places like Rock Island, Victoria Rock, Cabinet Rapids, Gualquil Rapids - all in the area of Lodgestick Bluff - are no longer visible or are small instances of their original grandeur. The location and names on these historic maps constitute a very important historic record.

Downing was the cartographer on a second expedition by then Capt. Thomas Symons in 1891. The maps are published as Chart of the Upper Columbia River from the International Boundary to the Okanogan River. Surveyed and Drawn under the Direction of Capt. T.W. Symons, Corps of Engineers, U.S. Army by Wm. Cuthbert Asst. Eng Showing River at Low Water Stage. This survey was completed between March and December 1891. A second volume of maps was prepared for the length from the Okanogan River to Rock Island Rapids.



Follow-on

To a large extent my curiosity about the petrified tree has been satisfied. The trip on the river to see the tree with a good friend and on a perfect weather day was a bonus. And yet I have questions about the role of the tree, its placement and significance in Native American culture. I hope to learn so I can complete the story.

The search for the tree branched out to create new questions and topics to explore. Principally, the series of at least nine maps created between 1814 and 1881 deserve to be studied and appreciated. For me, a person who relies on modern GPS technology to find previously unvisited locations, the task of preparing a map, to scale, of an area that is new or fairly raw in historic records, is amazing. I bow to the early cartographers and thank them for their work.

References

David H. Burr, Map of the United States of America with Parts of Adjacent Countries by David H. Burr, (Late Topographer to the Post Office), Geographer to the House of Representatives of the U.S., 1839.

Rev. Samuel Parker, A.M., Journal of an Exploring Tour Beyond the Rocky Mountains, under the Direction of the A.B.C.F.M. in the Years 1835, '36. And '37 Containing a Description of the Geography, Geology, Climate, Productions of the Country, and the Numbers, Manners, and Customs of the Natives with a Map of Oregon Territory. Mack, Andrus, and Woodruff, Ithaca, N.Y., 1842.

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Nick Zentner. Nick from Home Livestream #7, Petrified Wood. March 25, 2020.
<https://youtu.be/jWhlMLFXW2I>

Nick Zentner. Nick from Home Livestream #69, Giant Current Dunes. June 20, 2020.
<https://youtu.be/YJfoksfa4Vk>

