

17/09/2020



Dear Club Members,

It's 150 years since the Washburn-Langford-Doane exhibition travelled along a tributary of the Madison River, in northwestern Wyoming, called Firehole River. Once there they entered what is now known as Geyser Basin, and came across the geyser known as Old Faithful.

It's worth noting that this was not a discovery, these white men were the first to record the geyser and send back their records to the east coast of America, and to Europe, but people have been living in the area we now call Yellowstone National Park for over 11,000 years. They would have seen the geysers erupting, and put the source of hot water to use. The Tukulika (Sheep Eaters) soaked the horns of Big Horn sheep in hot springs to make them pliable for bows.

We've talked about the formation of the National Park Service in America before, the centenary of their establishment was the inspiration in April 2017. Yellowstone was the first National Park. Its establishment was signed into law by President Ulysses S. Grant on March 1st 1872. The large number of geysers are a key feature of the Park, and this is because the Park sits over the Yellowstone Caldera, a giant super-volcano. Calderas are volcanoes that are currently dormant, but the large pool of magma that sits just underneath the park provides a heating source for all the ground water that seeps through the earth, this gathers, gets super-heated, and then forced out again through narrow cracks with huge force.

Old Faithful isn't the biggest in the park, but it does erupt with enormous regularity for a geyser. In general, a spout of water, between 14,000L and 32,000L, is sent 32m -56m in the air, for a duration of 90 seconds to 5 minutes. The park service have spent a long time studying the patterns of the geyser eruption, and they have got very good at predicting eruptions, if an eruption lasts less than 2.5 minutes then there will be a 60 minute interval. If an eruption lasts more than 2.5 minutes, there will be a 90 minute interval.

Geysers are not the most colour-friendly of fibre inspirations, so I've drawn my colours this month on another fascinating hydrothermal feature. Hot Springs are often vibrantly colourful due to the extremophiles that live in them. These species of bacteria are specially adapted to survive in the extreme conditions found in a hot spring. Tolerating temperatures that would kill most creatures, hot springs often have rings of colour, where different bacteria produce blooms of different colours. These creatures are thought to be very similar to the first life on earth, who would have developed in similar extreme conditions. These bacteria were crucial for developing DNA sequencing, their ability to withstand extremes of temperature makes their enzymes a key component of modern genetic testing.

Happy Spinning

Katie

Further Reading-

Historic Tribes in Yellowstone Park-

<https://www.nps.gov/yell/learn/historyculture/historic-tribes.htm>

Web Cam of Old Faithful-

<https://www.nps.gov/yell/learn/photosmultimedia/webcams.htm>

April 2017 Club letter-

https://www.hilltopcloud.co.uk/uploads/5/5/0/2/55028183/april_17_tt_letter.pdf

Types of hydrothermal features-

<https://www.nps.gov/yell/learn/nature/hydrothermal-features.htm#onthisPage-4>

Why is Old Faithful so Faithful?

<https://www.yellowstone.org/news/videos/inside-old-faithful/>

Hot Springs-

<https://www.yellowstonepark.com/things-to-do/grand-prismatic-midway-geyser-basin>

Yellowstone bacteria and modern genetics-

[https://www.realclearscience.com/blog/2015/05/
how_yellowstone_revolutionized_biotechnology.html](https://www.realclearscience.com/blog/2015/05/how_yellowstone_revolutionized_biotechnology.html)

Fibre Content- In case your parcel is missing the label

80% 22 micron Merino

10% Baby Camel

10% Yak