

## **Background on the Saanich Inlet Core**

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Our planet has experienced changes in its climate for millions of years. The Pleistocene epoch was marked by repeated glacial events for approximately 1.8 million years. Roughly 12,000 years ago, the last major Ice Age ended.

During the onset of the Holocene, the planet began warming (approximately 12,000-10,000 years ago). The rise in global temperature caused glaciers and massive continental ice sheets to melt slowly. Over time, the melt waters were trapped by ice dams, which created glacial lakes.

Glacial lakes, such as Glacial Lake Missoula, Glacial Lake Fraser, and Glacial Lake Deadman, formed in much of the newly thawed northwest. Hundreds of cubic miles of water were stored behind the ice dams.

Ice, being less dense than water, will float if adequate water is available. Once the ice dam reached its critical buoyancy level, water escaped and the flood began. Subsequently, the breach in the dam allowed the rushing water to break the dam into pieces.

When an ice dam breached, torrents of water surged out of the draining lake, creating a catastrophic flood. The floodwaters swept away soil and rocks and bored into older and deeper rock, which created the deep canyons that can be seen today in Oregon, Washington, and British Columbia.

Whereas one catastrophic flood would be devastating, there is evidence of multiple floods. Rhythmic lake deposits, created by the multiple flooding and refilling stages of a glacial lake, can be seen in Burlingame Canyon. The Camas Prairie Ripple Marks in western Montana look like long linear hills. The ripples are as high as 35 feet and have a wavelength of several hundred feet.