

Radiocarbon Needed to Date Glacial Lake Missoula Floods

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Toward the end of the last ice age, 15-20,000 years ago (ya), people migrated 50 miles from Siberia into Alaska across a land bridge produced by the tremendous glaciers which lowered the water in the oceans.^[1] Some tribes stopped in Alaska; others colonized Canada. Some migrated south-southeast from eastern Alaska through a corridor between glaciers on coastal ranges and those on the northern Rocky Mountains. This took them across the flood plain of Spokane, Washington, where some tribes settled. During our interglacial era, cyclic warming produced worldwide floods every 2,200 years, the metronome of the Zodiac.

About 14,000 ya, a glacial dam in northeast Idaho broke, reformed, and repeatedly released over 500 cubic miles of water from Lake Missoula.^[2] After 13,000 ya, world climate was too warm for this dam to reform. These glacial Lake Missoula floods are a very small part of the first of four world deluges which were catastrophic. They submerged evidence on continental shelves of previous very sophisticated civilizations.^[3,4,5,6,7]

Several Indian tribes witnessed the glacial Lake Missoula floods of 14,000 ya. Here are three of several tribal memories.^[8] "Thunderbird was once so angry that he sent the ocean over the land. When it reached the village of Quillayute (WA), they got into their canoes. The water rose for four days, covering the mountains. The boats were scattered by the wind and waves. Then the water receded for four days, and the people settled in many areas,"^[8] Another tribe noted this was warm, not ocean, water. Three of those floods were in tribal memories of the Indians at Warm Springs (OR): "Twice a great flood came. Afraid that another might come, the people made a giant canoe from a big cedar. When they saw a third flood coming, they put the bravest young men and

the fairest young women in the canoe, with plenty of food. Then the flood, bigger and deeper than the earlier ones, swallowed the land. It rained for many days and nights, but when the clouds finally parted for the third time, the people saw land (Mount Jefferson) and paddled to it. When the water receded, they made their home at the base of the mountain. The canoe was turned into stone and can be seen on Mount Jefferson today."^[8]

Unfortunately, available geologic data may be misinterpreted.^[2,9,10] Glacial Lake Missoula repeatedly formed behind ice dams where the Clark Fork River goes from Montana into Idaho. It produced 39 major varves (each varve has a light layer, powdered glacial rock, and a dark layer, mostly organic matter) which are exposed in roadside cuts along U.S. Highway 90 about 29 miles west of Missoula, Montana.^[2] These are quite different from the shoreline marks on the hills above Missoula. Each major varve has more layers of sediment (from a succession of lakes) than those above it.^[2] The lowest has 58 minor layers of sediment; the top has nine; nine huge floods occurred between 14,100 and 13,300 ya.^[11] This concept is supported by the three floods within Indian tribal memories.

Consider this hypothesis. Each of the 39 major varves represent one layer in the formation of the hill (shown by the roadside cut) at the rate of one varve for each glaciation cycle of 100,000 years (this includes about 15,000 of interglacial, years). These cycles are seen in ice cores of glaciers.^[11] They are verified by uranium dating of ancient coral reefs which follow high sea levels during inter-glaciation periods.^[12] A third dating method is the uplift of beaches of certain islands.^[12] Glacial cycles are probably produced by the eccentric ellipse the earth makes around the sun each year.^[13] From the fixed focus, the sun, a moving focus lengthens (cool summers encourage

glaciation for about 85,000 years), and shortens (interglacial periods of about 15,000 years) the ellipse.

The hypothesis can be tested by radiocarbon dating which is ineffective after 50,000 years. If the hypothesis is correct, carefully collected and thoroughly leached organic material from only the top varve would indicate it was formed within the past 50,000 years. All lower varves would have negligible activity.

The data indicate multiple ice dams broke 58 times 3,900,000 ya. It would take relatively little water to float the early glacial dams. Glacial Lake Missoula would accumulate more water with each of the 39 subsequent ice ages. Each succeeding flood would rework the Spokane flood plain (the channeled scabland). Important characteristics remain from the last huge flood of 14,000 ya.^[10]

Validation of the above suggests a second hypothesis which could account for the increased Arctic glaciation. The 39 varves indicate a specific effective date for the closure of the Isthmus of Panama (the joining of the two Americas by plate tectonics), 3.9 million years ago. This closure is important because it increased Arctic glaciation. The Isthmus directs the Atlantic Ocean current: warm water from the Caribbean Sea goes to England and Norway; it turns toward Greenland and Newfoundland where fresh (river) water forces the heavier salt water to submerge as it goes around Africa. The warm ocean water evaporates to form previously unprecedented (now usual) amounts of snow and glaciation in Greenland, north America, and Europe.^[12,13]

If radiocarbon dating validates the major hypothesis, we need reevaluation of geologic interpretations of the Glacial Lake Missoula floods.

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