Tree-Ring Dating of the Momaday-Daub/Short House

Jemez Springs, New Mexico

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Then and now: (left) ca. 1930s photograph of J. D. Johnson's store with its "All Kinds of Liquor Drank Here" sign; (right) the same building today at the corner of NM State Road 4 and Legion Drive in Jemez Springs (17482 HWY 4), now the home of Betsy Daub and Susanna Short.

Summary

In March 2026, six samples — five sawn cross-sections of short support boards and one 3/8-inch increment core — were collected from the cellar of the two-story frame house owned by Betsy Daub and Susanna Short in Jemez Springs, New Mexico. All six samples crossdated, yielding outermost dates of 1927 or 1928. Three of the cross-sections retained a thin sliver of earlywood from the 1928 ring beneath the bark, indicating the trees were felled either in late 1927 (after the growing season) or at the very beginning of the 1928 growing season (i.e., around May 1928). The ring patterns match the Jemez Mountains and northern New Mexico ponderosa pine master chronologies, indicating the lumber was milled locally. Given typical drying and storage delays between felling and use, the house was most likely constructed in 1928–1930. This result aligns with the historical record: J. D. Johnson and his family, who ran a store and lodgings on the property, first appear in the Jemez Springs area in the 1930 U.S. Census and are not recorded there in 1920. The house later housed the family of Al Momaday and his son, the Pulitzer Prize–winning author N. Scott Momaday, in the 1950s and early 1960s.

Sampling

On March 18, 2026, Tom Swetnam and Bill Bergmann collected five short support boards and one core sample from the Momaday-Daub House cellar. The five support boards (samples MD-1 through MD-5) were removed from spans beneath the ground-floor joists; most were replaced in place, and when replacement proved awkward, other intact support boards were left in the same location, so the floor was not structurally weakened. Sample MD-6 was a 3/8-inch-diameter increment core taken with an electric drill and hollow bit from a vertical board on the cellar stair support (Fig. 2).

Sample MD-2 was removed from immediately above the electrical circuit breaker box (Fig. 3). After the cross-section was cut, a new piece of dimensional lumber was installed.

Fig. 1. Bill Bergmann seated on the cellar steps during sampling on March 18, 2026. The vertical board at right, by Bill's hand, is where core sample MD-6 was taken from the stair support.

Fig. 2. The vertical stair-support board that yielded core MD-6, with thick bark on the right side.

Fig. 3. Sample MD-2 in situ above the electrical circuit breaker box, before removal.

Laboratory Methods

All samples were prepared at the Jemez Mountains Tree-Ring Lab in Jemez Springs. The five cross-sections (MD-1 through MD-5) were mounted on plywood backing, and the single increment core (MD-6) was mounted in a grooved wooden core holder. All transverse surfaces were sanded with progressively finer grits, from about 60 to 400, until individual cells at the earlywood-latewood transition were clearly resolved.

Each sample was examined under a variable-zoom binocular microscope (10–40X). Ring-width patterns were transcribed as skeleton plots and crossdated by visual pattern-matching against a composite Jemez Mountains ponderosa pine master chronology. Particular attention was paid to the regional signature drought rings of 1902, 1904, 1893, and 1880, which are distinctly narrow in the Jemez master and in most ponderosa pine samples milled at Jemez-area sawmills.

All six samples are ponderosa pine (*Pinus ponderosa*), except MD-6, which is Douglas-fir (*Pseudotsuga menziesii*). The Douglas-fir core came from the vertical stair support. All samples are from milled dimensional lumber with a waney edge (the last-formed ring under the bark is present).

Crossdating and Results

Sample-by-sample notes

MD-1 (cross-section). Inner date 1901 (far from pith); outer date 1927. Possible sliver of 1928 earlywood visible beneath the bark, but this was ambiguous. Sapwood transition at approximately 1905. Crossdating was good.

MD-2 (cross-section). Inner date 1881 (far from pith); outer date 1927. Ring series is complacent (low year-to-year variability), with the sapwood transition near 1885. Dating is supported by the overall ring-width trend, but the match is less distinctive than in the drought-signature series.

MD-3 (cross-section). Inner date 1907 (far from pith); outer date 1928. A thin sliver of 1928 earlywood is present beneath the bark, indicating the tree was felled at the very beginning of the 1928 growing season (roughly May 1928). Sapwood transition not clearly visible.

MD-4 (cross-section). Inner date 1876 (far from pith); outer date 1928, with an obvious thin sliver of 1928 earlywood preserved beneath the bark. Sapwood transition at approximately 1880. Good crossdating of the inner part of the series, with clear small-ring signatures in 1880, 1893, 1899, 1902, and 1904 (see Fig. 4).

MD-5 (cross-section). Inner date 1875 (far from pith); outer date 1928, again with a thin sliver of 1928 earlywood preserved beneath the bark. Good crossdating (see Fig 5).

MD-6 (increment core, Douglas-fir). Inner date 1874 (near pith); outer date 1927. Possibly a thin sliver of 1928 earlywood beneath the bark, but this was not firmly confirmed. This sample was taken from the vertical stair-support board in the cellar. Good crossdating.

Example skeleton plots

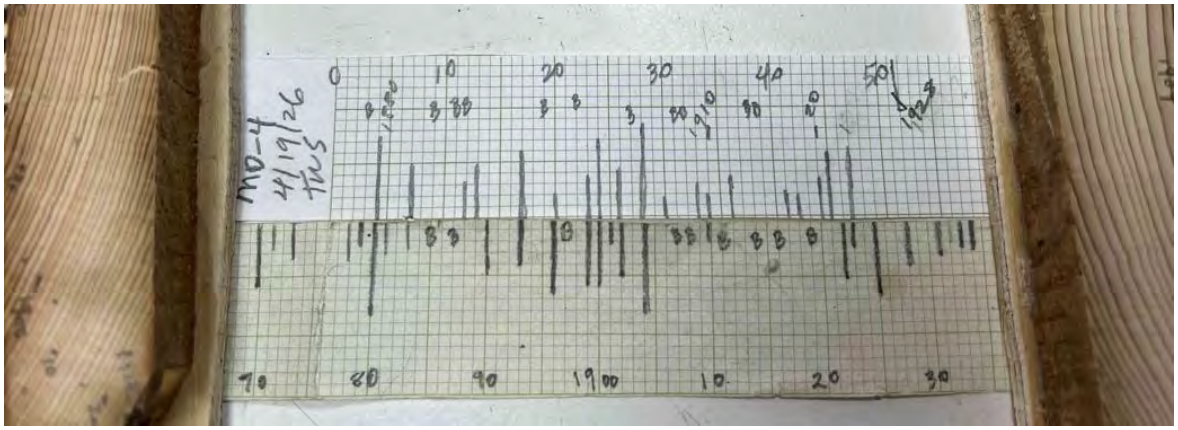

Fig. 4. Skeleton plot of sample MD-4 (top strip, read left-to-right starting at year zero) compared with a portion of the Jemez Mountains ponderosa pine master chronology (lower strip). Long vertical lines mark the narrowest (most informative) rings. Note the strong signature rings shared between the sample and the master at 1880, 1893, 1899, 1902, and 1904.

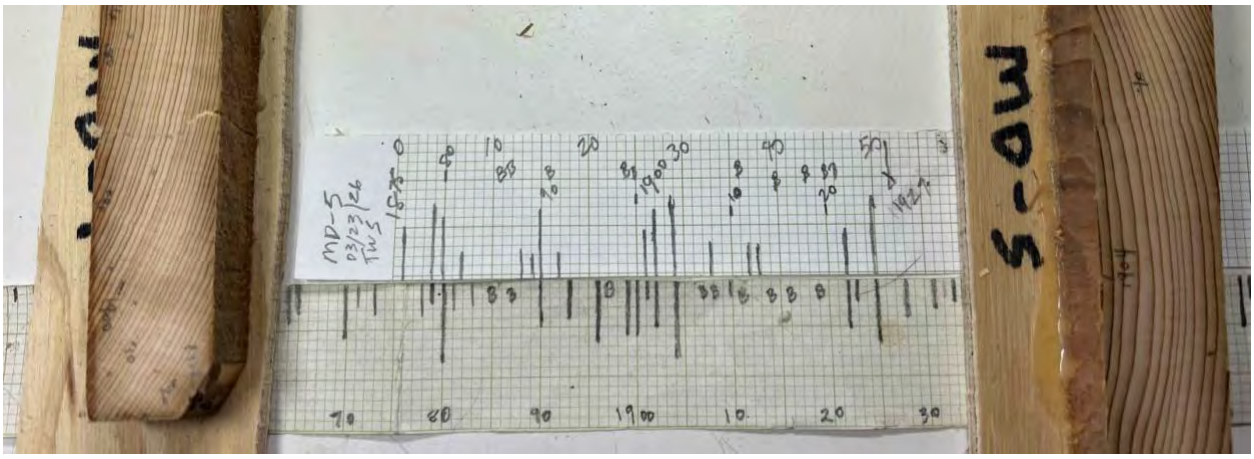

Fig. 5. Skeleton plot of sample MD-5. This series (top strip) cross-dates well with the master chronology (bottom strip), with narrow rings in 1880, 1890, 1902, 1904, 1922, and 1925 matching the master chronology.

Interpretation

Taken together, the six samples tell an internally consistent story. Three of the five cross-sections (MD-3, MD-4, and MD-5) retain a thin sliver of earlywood from 1928 beneath the bark, a definitive indicator that those trees were felled either at the very end of the 1927 growing season (after about August) or at the very beginning of the 1928 growing season (approximately May). The remaining three samples (MD-1, MD-2, MD-6) lack a clear 1928 sliver but end with a complete 1927 ring; these are consistent with felling in late 1927 or early 1928.

Because freshly sawn dimensional lumber typically must be dried for several months to a year before it is put into service, and because sawn lumber is sometimes stocked for longer periods before it is purchased, the most likely construction window for the Momaday-Daub House is 1928–1930. The ring patterns match the Jemez Mountains and northern New Mexico ponderosa pine master chronologies, providing strong evidence that the lumber was cut from local trees and milled at a local sawmill, of which several were operating in the Jemez Valley in the late 1920s.

Historical Background

The tree-ring dating aligns neatly with the documentary record for this building. A review of U.S. Census records, the 1942 Jemez Springs Manhattan Project property survey, and newspaper files indicates a chain of occupants from the late 1920s to the present.

The Johnson Years, ca. 1928–1940s

James D. Johnson and his wife, Susie, appear in the 1930 U.S. Census for the first time in Jemez Springs, along with their son, Clayton. The family is listed with J. D. as “Head,” age 56, born in Alabama, and occupation “Merchant, Store,” with a dwelling valued at $2,000. There is no corresponding entry for the Johnsons in the 1920 Jemez Springs census. This absence, combined with the 1927–1928 cutting dates on the cellar support boards, makes it very likely that the Johnsons built the house and store sometime between late 1927 and the census enumeration on April 11, 1930.

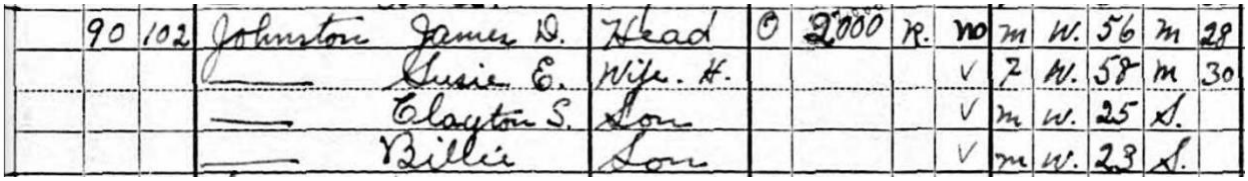

Fig. 6. Entry for James D. Johnston [sic] and family in the 1930 U.S. Census, Jemez Springs, New Mexico. J. D. Johnson is listed as “Head,” age 56, with the dwelling valued at $2,000.

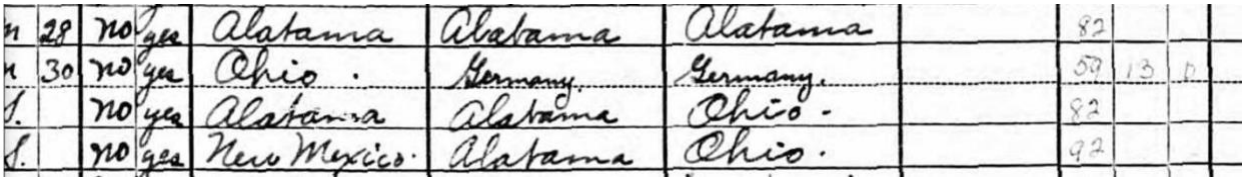

Fig. 7. Continuation of the 1930 census entry showing birthplace information (Alabama / Ohio / New Mexico) for the Johnson household.

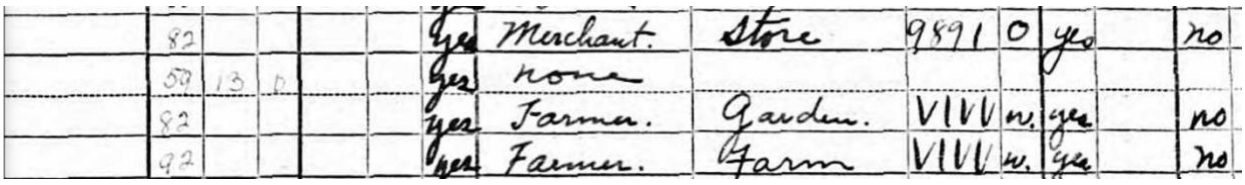

Fig. 8. Further continuation of the 1930 entry: J. D. Johnson's occupation is recorded as "Merchant – Store," consistent with the 1942 Manhattan Project description (Fig. 12) and with the "All Kinds of Liquor Drank Here" storefront visible in the period photograph on the cover page.

By the 1940 census, Susie Johnson no longer appears (she likely died in the interim), and the household has expanded to include Clayton Johnson, his wife, and their child. J. D. Johnson remains listed as head of household.

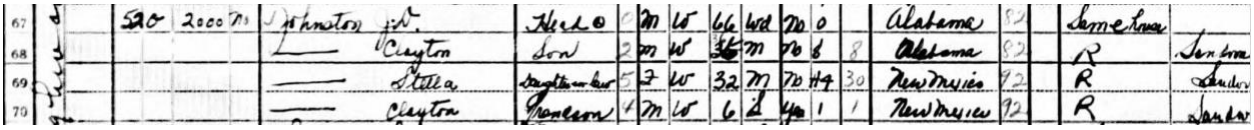

Fig. 9. 1940 U.S. Census entry. J. D. Johnson ("Jhnston" on the census form), his son Clayton, and Clayton's wife and child. Susie Johnson is no longer listed.

Further confirmation comes from the 1942 Jemez Springs Manhattan Project property survey, which inventoried every structure in the valley. The survey describes "J. D. Johnson's Place" as a two-story Store and House of 3,200 square feet (32'×50'), a separate 1,600-square-foot House with the same footprint (or is that the ground floor of the 3,200 sq. ft. building?), and a 1,200-square-foot (30'×40') Barn. The main building is described as being in good condition, with a Kohler 1500-watt generator, piped bath water from Block's reservoir, a pit latrine, and a wood stove.

J. D. Johnson's Place	(a) Store & House, 3,200 sq. ft. (2-story, 32'x50')	Good	Kohler plant (1500 watt)	Piped (bath); from Block's reservoir	Pit latrine	Wood stove
	(b) House, 1,600 sq. ft. (32'×50')	Good	Kohler plant (1500 watt)	Piped (bath); from Block's reservoir	Pit latrine	Wood stove
	(c) Barn: 1,200 sq. ft. (30'x40')	Good	N/A	N/A	N/A	N/A

Fig. 10. 1942 Jemez Springs Manhattan Project property survey entry for "J. D. Johnson's Place."

The Liquor Sign and the Repeal of Prohibition

The ca. 1930s photograph on the title page shows the hand-painted sign "All Kinds of Liquor Drank Here" prominently displayed on the storefront's west face. National Prohibition was repealed on December 5, 1933, when the 21st Amendment took effect. Given the cutting dates established by the tree-ring samples, it is tempting to read the sign as a celebration of the end of Prohibition and the return of legal liquor sales to J. D. Johnson's mercantile.

The Santone ("Rod's Lodge") Interlude, ca. 1950

The Johnsons do not appear in the 1950 Jemez Springs census. In the same position in the census ledger (and therefore most likely at the same physical address, since enumerators walked neighborhoods in order), we instead find Arthur Santone, Jr. (name spelling uncertain), age 30, born in Ohio; his wife, Nancy, age 31, born in Minnesota; son, Arthur III, age 2, born in Alabama; and a young daughter. Arthur Santone is listed as "Proprietor" of a business identified as "Rod's Lodge" (spelling uncertain on the original form). It appears that, at some point in the 1940s, the Johnson property transitioned from a store-and-residence into a small roadside lodge.

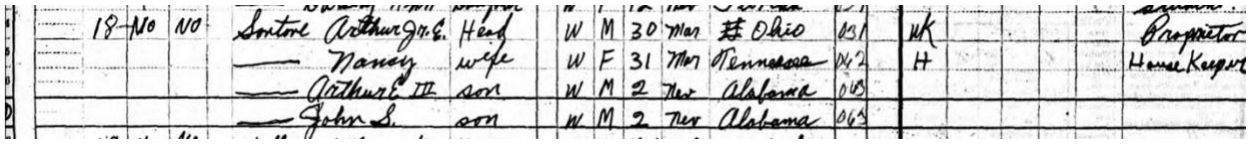

Fig. 11. Portion of the 1950 U.S. Census showing the Arthur Santone, Jr., household; the order of entries in the ledger strongly suggests this is the former Johnson place.

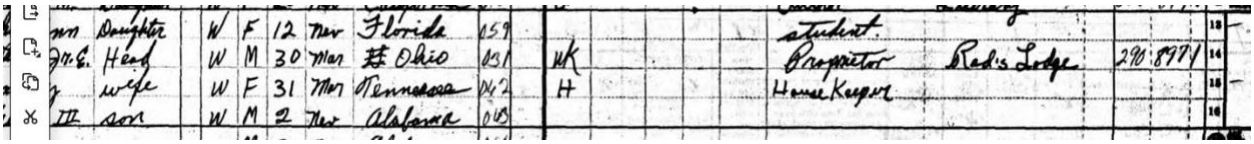

Fig. 12. Continuation of the 1950 entry. Arthur Santone, Jr. is listed as "Proprietor" of "Rod's Lodge" (spelling uncertain).

The Momaday Family, late 1950s

The 1960 U.S. Census is the most directly relevant enumeration for late-1950s occupancy, but the detailed 1960 returns will not become public until April 1, 2032, so they cannot yet be consulted. Family and community tradition, however, place the Momaday family in this house in the late 1950s. Alfred (Al) Momaday was a painter and teacher; his wife, Natachee Scott Momaday, was a writer; and their son, N. Scott Momaday, spent part of his youth here. N. Scott Momaday went on to win the 1969 Pulitzer Prize for Fiction for "House Made of Dawn" and later served as U.S. Poet Laureate of Oklahoma and as a longtime professor at the University of Arizona. His writings drew extensively on Jemez Pueblo and the Jemez Valley landscape of his boyhood.

In a foreword to a later edition of House Made of Dawn, Momaday said the novel's "Benevides house," set in the village of "Los Ojos," was based on his parents' house in Jemez Springs. He also said this house was built around 1870. However, I suspect the house described in the novel is a composite of two houses in Jemez Springs, that is, his parents' house and another house about a mile up the road that was occupied by the Fenton family and later by the Adams family before it was acquired by the Servants of the Paraclete. The latter house fits the Benevides house's location description in the book, as "just below the forestry station," and matches the novel's description of the house and surroundings in other ways. This Fenton/Adams house is the subject of another tree-ring dating report prepared at the same time as the current one. It was probably constructed around 1890.

Another clue linking Momaday to the Fenton/Adams house is that he is listed as a "grantor" in the Sandoval County parcel records for this house and parcel, conveying it to other "grantees" in 1998. I wonder whether Momaday purchased the house soon after the Adams family traded it for another house with the Servants of the Paraclete in 1965. Momaday has said that he wrote the novel at the Benevides house. If so, perhaps he used that house in the late 1960s for seclusion while he wrote his famous novel, while his parents were still living in the other house down in the village. This is speculation, subject to further research in county and other records.

Acknowledgments

I thank Betsy Daub and Susanna Short for access to the house and cellar, and Bill Bergmann for help with sampling on March 18, 2026. The Jemez Mountains and northern New Mexico master ring-width chronologies used for crossdating have been developed over many decades of collaborative work at the Laboratory of Tree-Ring Research. Claude (Opus 4.7) was used to compile and draft the report, following detailed instructions and an outline. I checked all facts and extensively edited and added to the final report.