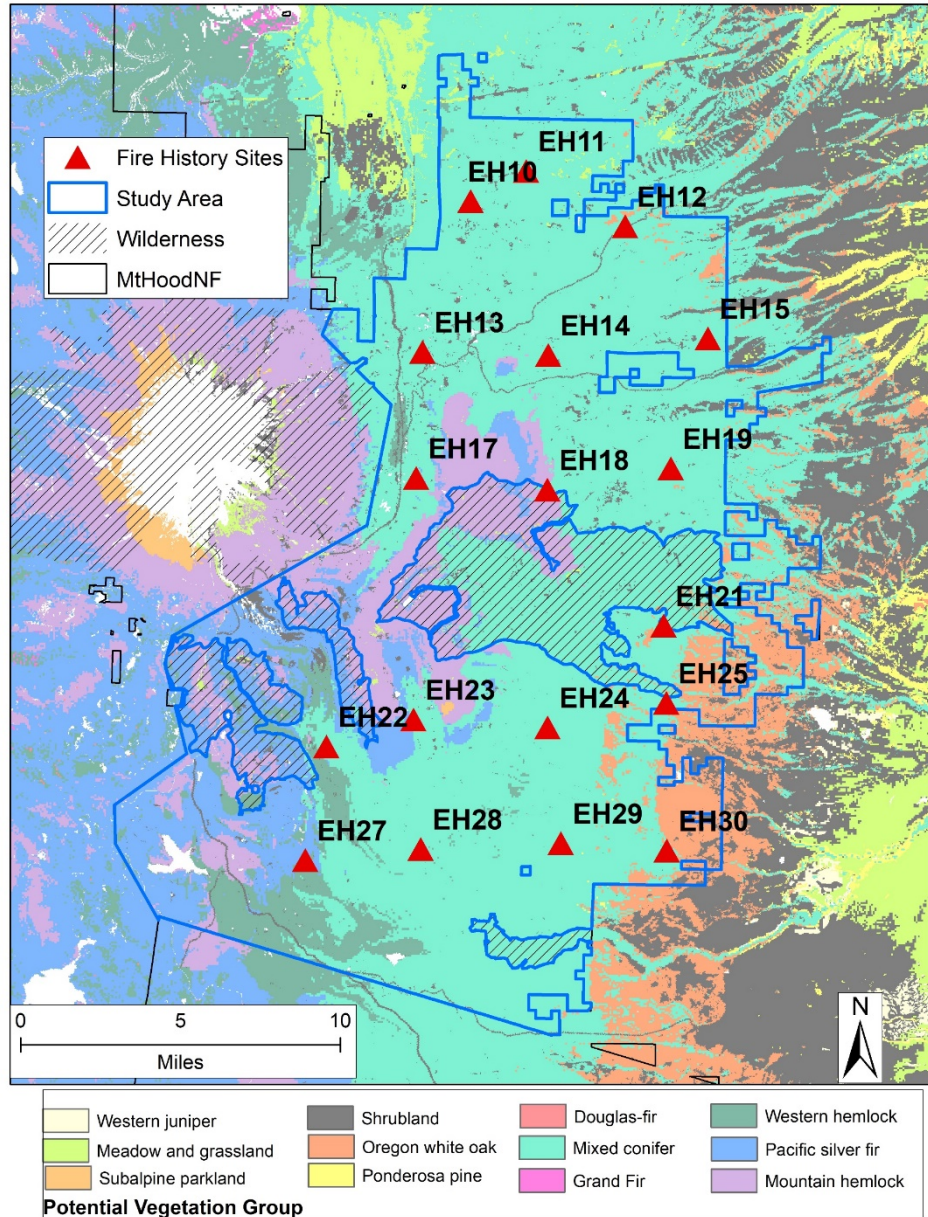


# Fire History Sample Design



**18 Sites**

**~ 4 miles between sites**

**Sites were moved for accessibility, to avoid recent fires, and because of difficult access near The Dalles Watershed**

warm, dry sites (< 25 in ppt)

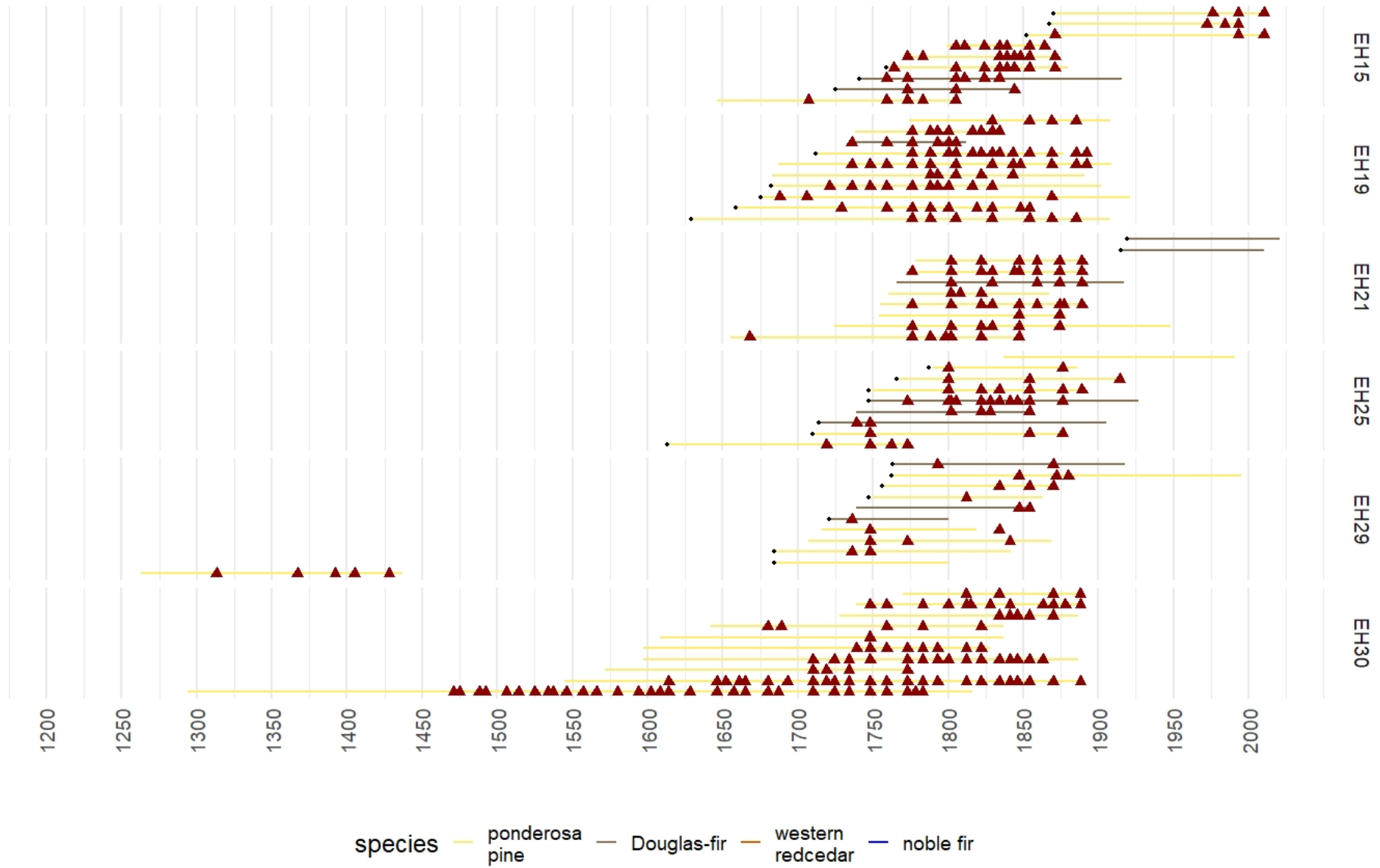


Figure 1. – Fire history at six warm, dry sites (EH15, EH19, EH21, EH25, EH29, EH30). We removed cross sections from 10-15 fire scarred stumps or logs at each site. Each tree we sample has a timeline corresponding to the earliest and most recent annual ring present on the sample. The years of historical fires evidenced by cambial fire scars are indicated by red triangles. Prior to 1900, there were 8-13 fires per century in warm dry environments.

warm, moist sites (37-43 in ppt)

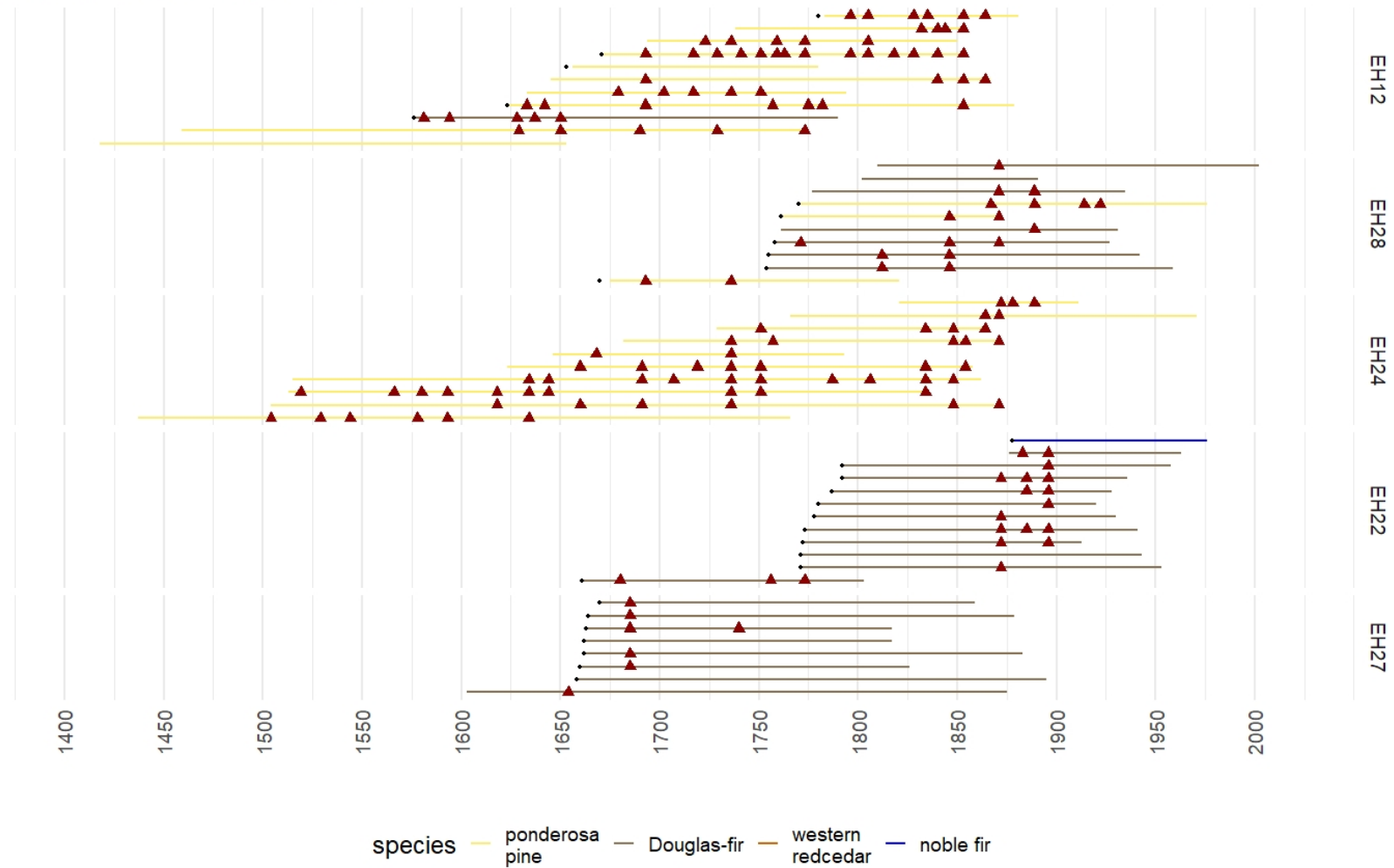


Figure 2. – Fire history at five warm, moist sites (EH12, EH28, EH24, EH22, EH27). We removed cross sections from 10-15 fire scarred stumps or logs at each site. Each tree we sampled has a timeline corresponding to the earliest and most recent annual ring present on the sample. The years of historical fires evidenced by cambial fire scars are indicated by red triangles. Frequency in warm, moist environments likely varied with landscape position or adjacency to warm, dry versus cool, wet environments.

- Warm, moist fire history sites that are adjacent to warm, dry sites had 7-12 fires a century.
- Warm, moist fire history sites that are adjacent to cool, wet environments (i.e. a long distance from ponderosa dominated forest) had long intervals without fire and some periods with frequent fire. Fire frequency was non-stationary over time.

cool, wet sites (>47 in ppt)

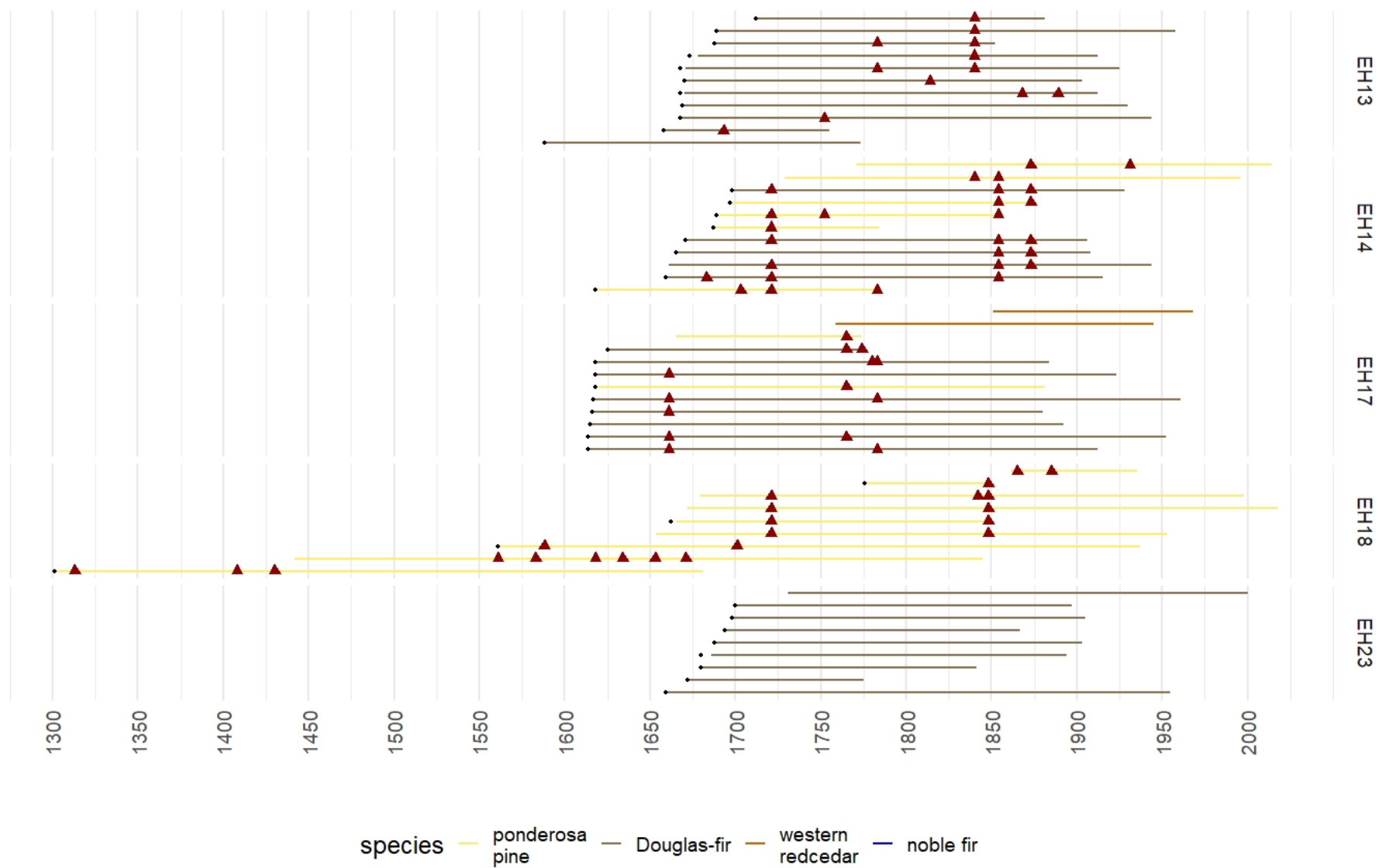


Figure 3. – Fire history at five cool, moist to cool, wet sites (EH13, EH14, EH17, EH18, EH23). We removed cross sections from 10-15 fire scarred stumps or logs at each site. Each tree we sampled has a timeline corresponding to the earliest and most recent annual ring present on the sample. The years of historical fires evidenced by cambial fire scars are indicated by red triangles. Prior to 1900, fire frequency was quite variable in cool, wet environments. There were long (i.e. >100 years) periods where we did not detect evidence of fire. There were also periods with much higher fire frequency (i. e. 3 fires in 40 years). Fire frequency was non-stationary over time.

# annual fire extent

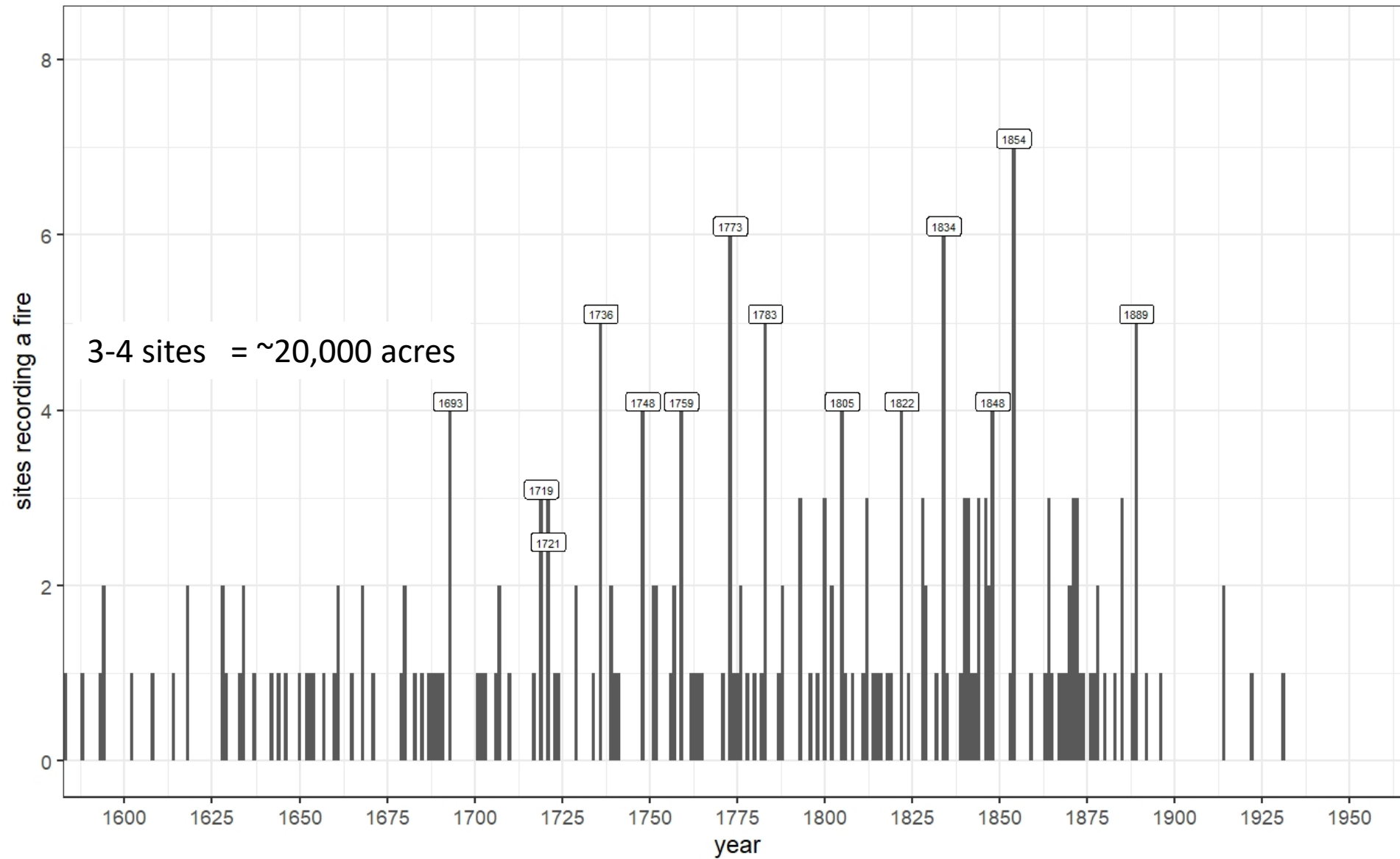


Figure 4. The number of sites recording a fire in each year from 1600-1975. Prior to 1900, fires that encompassed >20,000 acres occurred about 8 times per century. Warm, dry sites tended to burn synchronously in the same year, while fire synchronicity was rare across warm, moist, and cool, moist sites. This suggests fires were more extensive across relatively warm, and dry portions of the east Cascades and smaller in cool, moist environments at higher elevations. Fuel moisture may have limited fire spread in relatively cool, moist environments.