A global database of lightning-caused holdover fires

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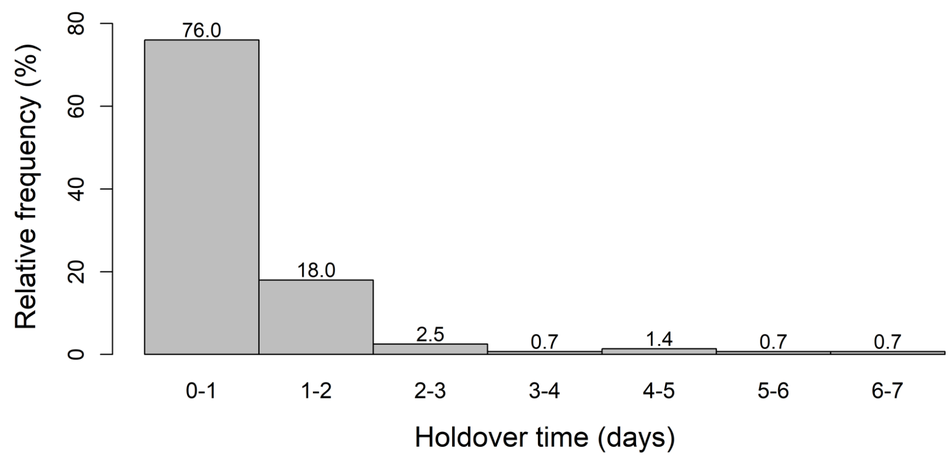
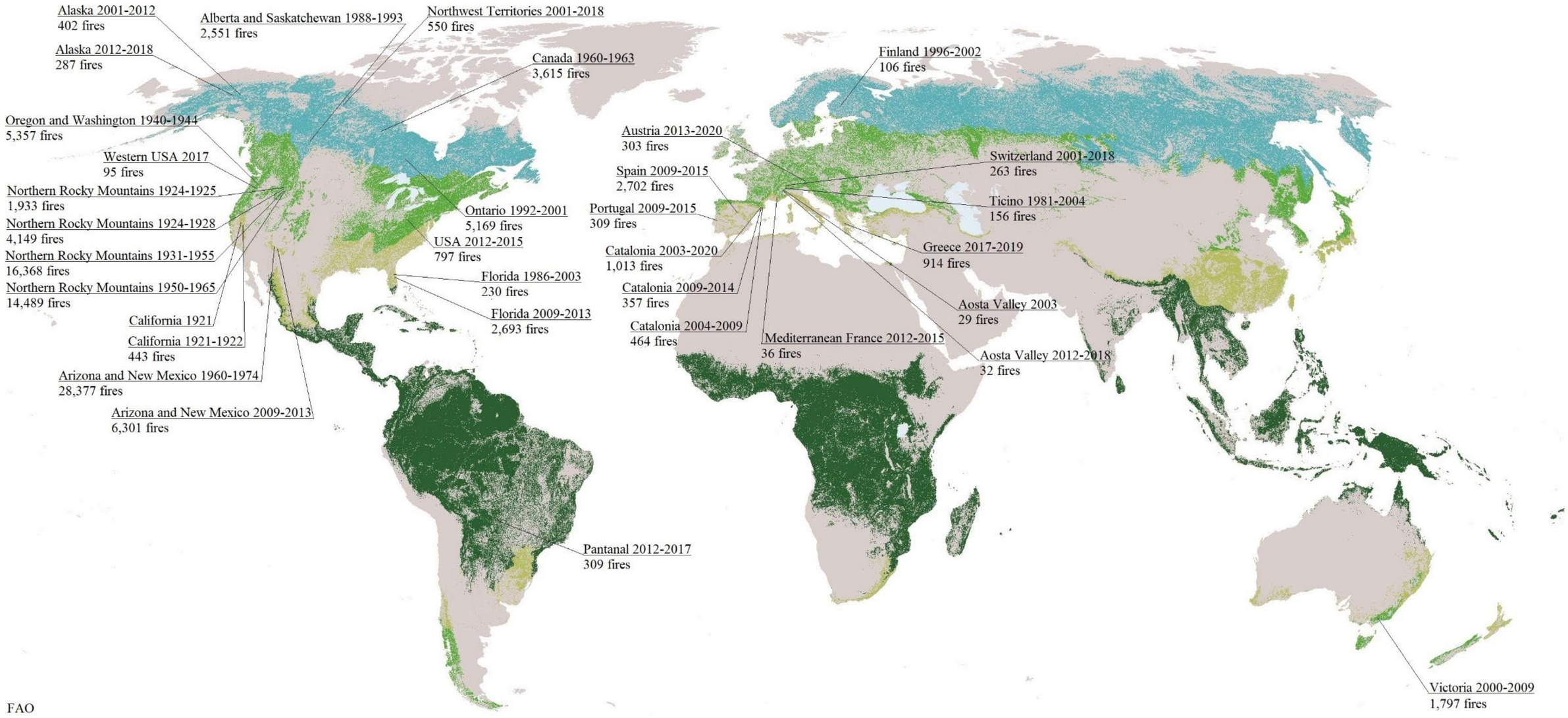
The **holdover duration** is the time between lightning-induced ignition and fire detection, and can range from a few minutes to several days, and occasionally some weeks and even months. Long holdover times are due to an initial latent phase characterized by **smoldering** (slow and flameless combustion) of the soil duff.

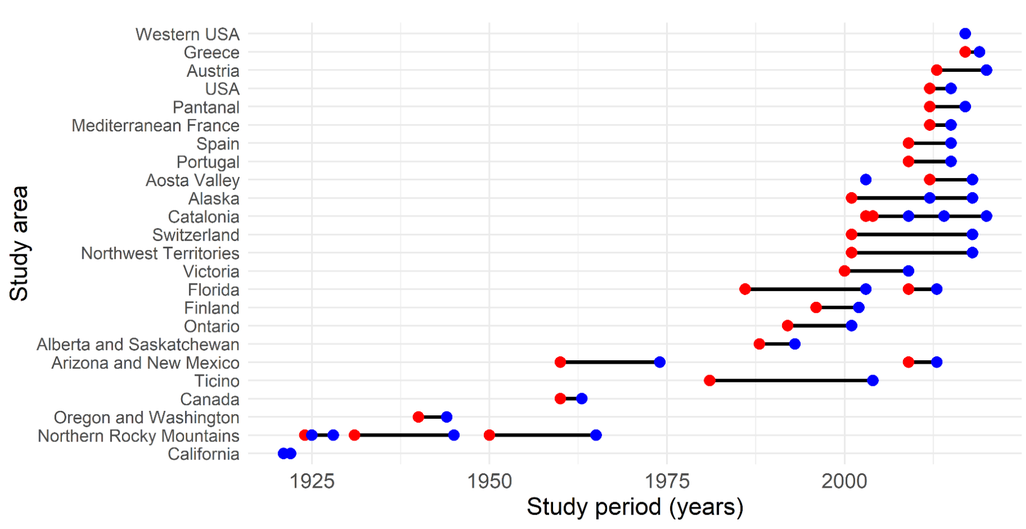
Source: Conedera et al. 2006 (Proceeding)
Study area: Ticino (Switzerland)
Biome: Temperate coniferous forest (Palearctic)
Study period: 1981-2004 (24 years)
Number of fires: 156 (7 data records)
Lightning Location System: –
Maximum holdover time: 7 days
Lightning selection method: –



We built a **holdover time database** of lightning-caused fires by collecting data from figures, tables and personal communications from authors of 26 publications. The database contains **interval-censored data** (i.e., fire counts or relative frequency within a particular interval) and additional information associated to each single dataset.

The current version of the database contains **34 frequency distributions** of holdover times with **2,051 data records** coming from more than **102,552 lightning-caused wildfires**. These data are distributed across **12 countries in 4 continents from 1921 to 2020**.





- The holdover phenomenon is one of the most **challenging** aspects that complicates the study of lightning fires.
- Holdover time data are **scarce**, obtained with different methods, often difficult to extract, and highly fragmented into diverse publications.
- The goal of the global database is to improve our knowledge of the holdover phenomenon by collecting holdover time datasets, standardizing the data, and making all this information **freely available** to the community.
- The holdover time datasets can be **used in different ways**. For example, to know how often long holdover fires may occur, to select a probability distribution to model holdover times, to improve the methods to investigate lightning fires, etc.

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