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Burning The Land

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Burning the land

an ethnographic study of non-domestic fire use by recent and sub-recent foragers and implications for the interpretation of past fire practices in the landscape



Figure 1 - Mind on fire - Photograph by F. Oldenburger and R. Norde, taken on the Sipaliwini Savanna in Surinam, on top of the Kantani hill, 1968. A Trio indian hunter setting fire to the brush for sheer fun.

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Archaeological indications for off-site burning by late Pleistocene and early Holocene hunter-gatherers present difficult interpretive problems. By contrast, individual burning practices by recent hunter-gatherers are well-documented.

Ethnographic research

We present the first systematic *global* inventory of extant non-domestic burning practices based on ethnographic and historical texts. Our database includes stated reasons for burning, who effectively participates, and the environmental settings of firing activities. Sources for the references include ethnographic and historical texts with direct and indirect observations.

Archaeological record

The 'historical visibility' of hunter-gatherer burning activities contrasts with the relative 'invisibility' of such practices in the contemporary archaeological record, highlighting the difficulty of analyzing past use of fire. We analysed promising case studies from the literature and concluded that intentional antropogenic fire use in a non-domestic context is very difficult to attest and that proof for most cases of off-site fire use is not convincing.

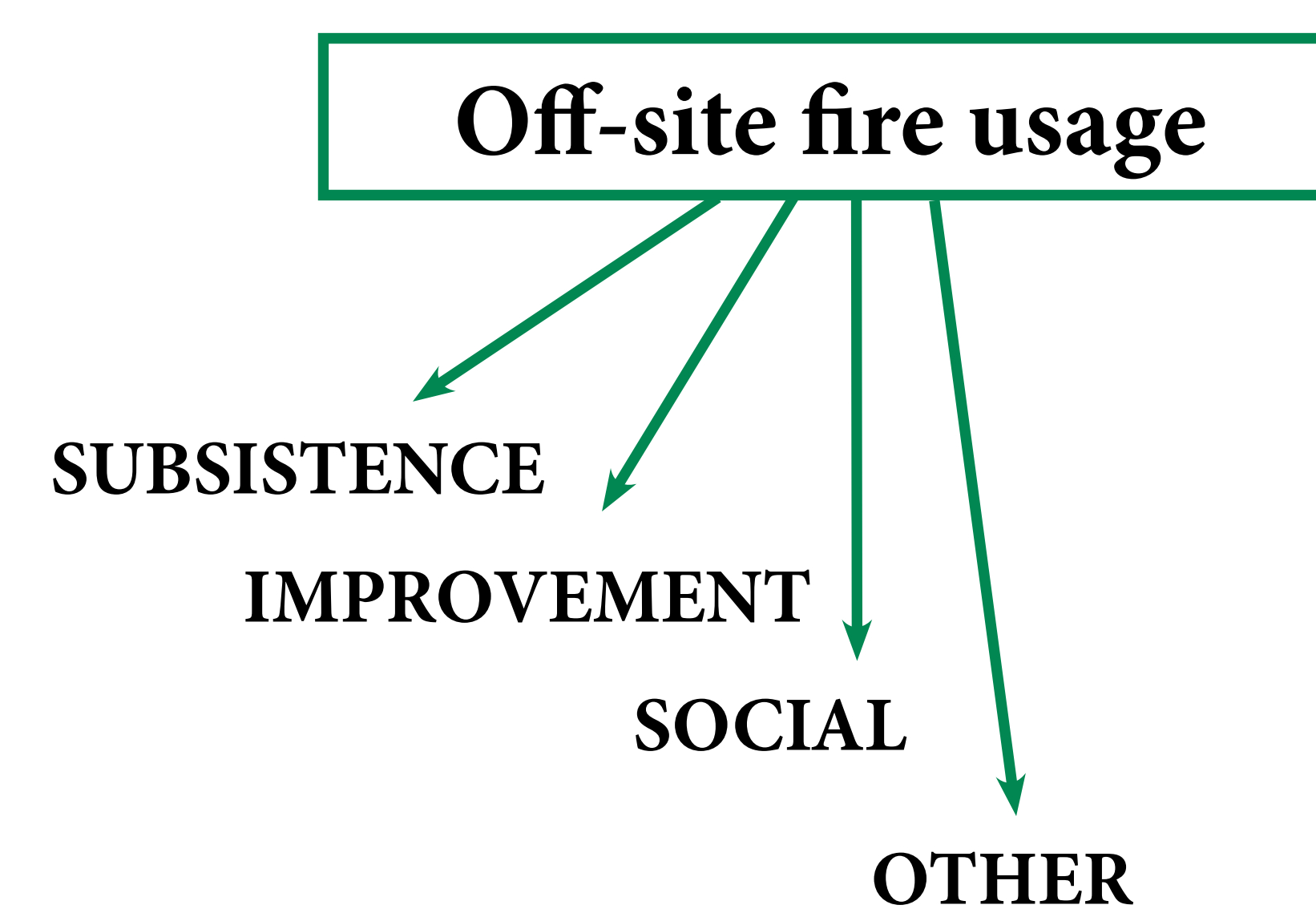


Figure 2 - Different categories of fire use, ordered on relative importance within the database.

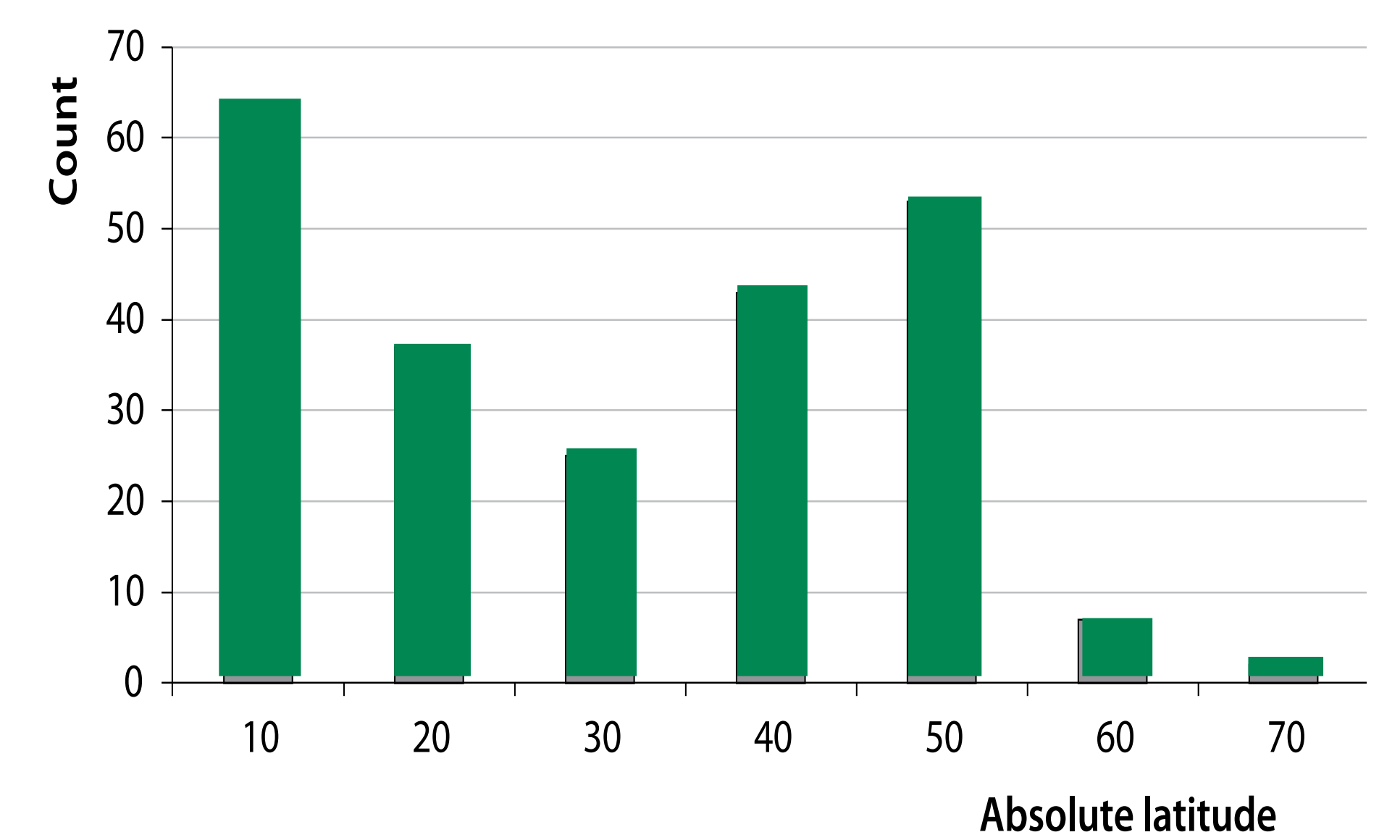


Figure 3 - Distribution of observations over the absolute value of Latitude

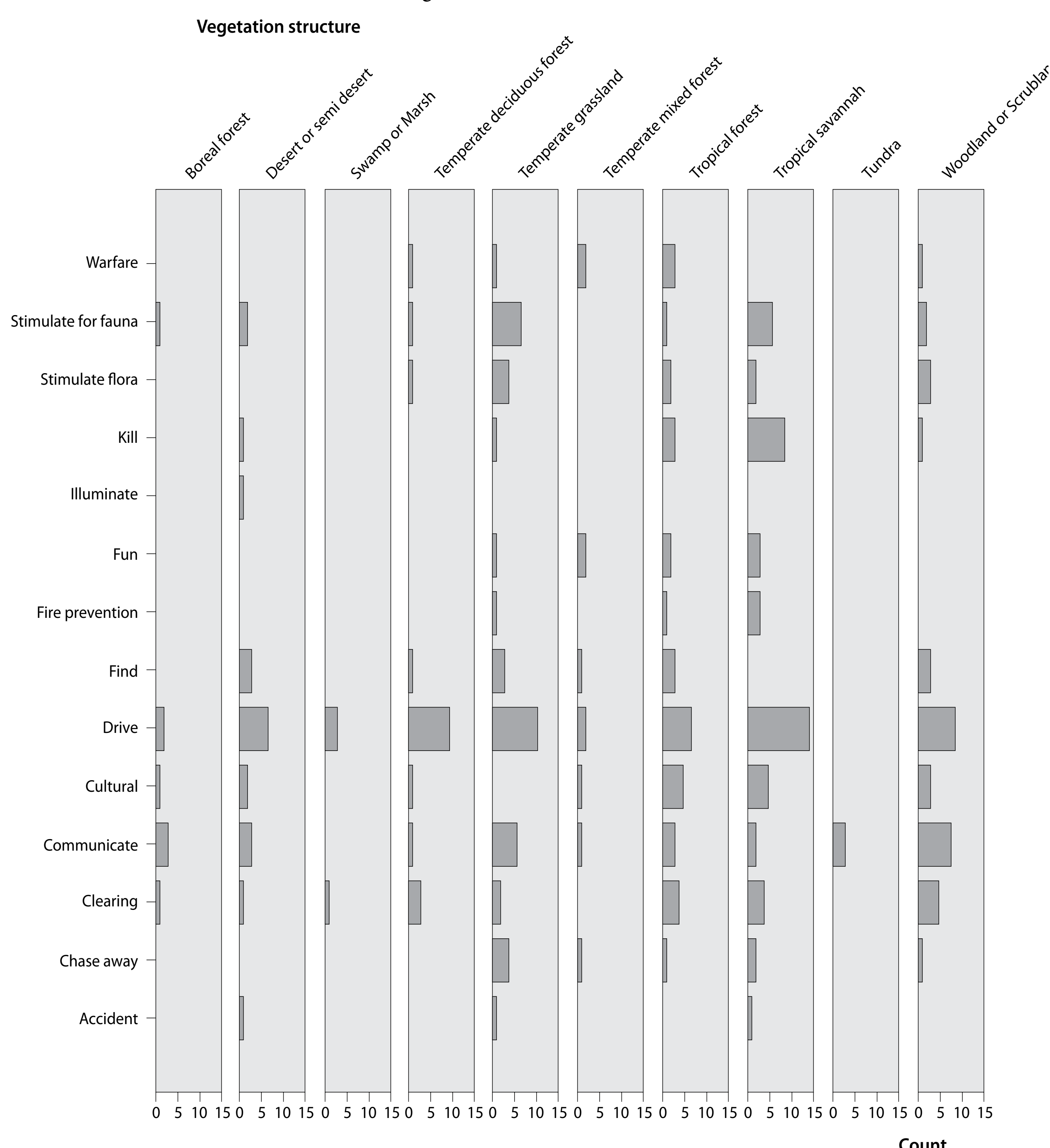


Figure 4 - Vegetation structure versus objective. Most firing practices occur in (almost) all biomes.

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Studies of both historic and prehistoric hunter-gatherers tend to have neglected the importance of off-site fire usage in the development of the human niche. The collected data demonstrate that fire use is an integral part of the hunter-gatherer niche, off-site as well as onsite. In historical times, off-site fire was used for a wide range of purposes, with significant advantages for its producers and with considerable but varying local and regional impact in all types of environment except the northern tundras (Figure 4).

Fire is used in a broad range of vegetation types and topographic context. Both men and women, adults and children are involved in off-site fire use, both as individuals as well as in smaller or larger groups. More than 230 individual references to off-site fire use illustrate the diversity of this usage, distributed over the following categories (Figure 2):

- **Subsistence** related (n=94, with driving the most often stated intention);
- **Improvement** with fire use (n=65), for example stimulating the growth of edible plants, clearing pathways or removing rubbish.
- **Social** interaction (n=65), for example as a signalling tool or weapon of war;
- **Other**, unusual objectives (n=6) which do not fit easily into the broader categories, for example, to keep away predators, to fell a tree, or fire used by accident.

The signal left by past hunter-gatherers is not always visible and, if not drowned in the signal left by contemporaneous agriculturalists, it may be masked by the traces of natural fire regimes which can vary through time. Examples from Tasmania, Western Australia and Western USA contradict each other when correlating the impact of European colonization, population density and changing climatic parameters with local fire proxy data. Also deep sea cores fail to identify any anthropogenic landscape burning until the arrival of agriculture. Using terrestrial settings and scaled down investigations involving multidisciplinary research including charcoal count and pollen analysis might reveal past fire usage. An example is Star Carr in England, where reef beds were burnt by humans. Just like Neumark Nord 2, ironically one of the best case studies for off-site fire use, which suggests that Neandertals opened-up the local deciduous forest. But even with these strongest cases it remains unclear if this prehistoric landscape management was intentional.

Conclusions

In historical times, off-site fire was used for a wide range of purposes by people of any age and gender, with significant advantages for its producers. Hunter-gatherer firing practices created more mosaic types of environments than would have occurred naturally, irrespective of the stated intention of firing. Based on its ethnographic importance and low-tech requirements, we suggest that the first hominin interactions with fire *may* have occurred in off-site contexts, a process which culminated in the omnipresent use of fire reviewed in this study. We also conclude that such contexts are extremely hard to attest archaeologically. New multi-proxy data from well-sampled sequences, analyzed at a local scale, is needed to test this hypothesis.



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