The International Paleofire Network (IPN)

Carole Adolf[1], O. Blarquez[2], D. Colombaroli[3], E. Dietze[4], K. Marcisz[5] and B. Vannière[6]

Fire plays an essential role in Earth's eco-systems in terms of ecology, carbon cycling, and radiative forcing, as well as having been extensively used for agro-pastoral purposes for millennia. However, each of the last few years has been an exceptional wildfire year, creating exorbitant damage to human and animal life, ecosystems, and infrastructure. As climate continues to warm, extreme wild-fire events like the ones seen in the Western United States, Siberia, Australia, Indonesia, the Amazon, and the Brazilian Pantanal, among others, are projected to increase in frequency across all biogeographic regions (IPCC 2018).

In light of these events, it is clear that we need an even more in-depth understanding of wildfire dynamics, as well as cross-disci-plinary approaches to develop effective eco-system-specific fire management practices. It is especially challenging to address the un-certainties related to changes in fire regimes due to climate change in an increasingly urbanized world. Long-term records of fire provide crucial information regarding the interplay between fire, vegetation, climate, and human land use. In combination with traditional fire knowledge, climate models and urban planning approaches, powerful and effective insights can be gained for the development of effective and sustainable fire policies.

Hence, the aim of the International Paleofire Network (IPN; www.paleofire.org) is to provide a platform to develop, catalog, and enable wildfire knowledge exchange across temporal and spatial scales, as well as across research disciplines and stakeholder communities. The IPN especially wants to in-crease the amount of paleofire research that can directly inform regional- to global-scale fire modeling and fire policy, by supporting paleofire research projects written in close collaboration with stakeholders. The aim is to increase the amount of actionable wildfire insights that address pressing issues faced by fire managers today, while accounting for climate change in the future. To reach this goal, the IPN will locate and connect wildfire expertise around the world; provide tools, training, and expertise to analyze paleofire data; and host wildfire discussion forums, webinars, and workshops. Additionally, the IPN wants to support early-career researchers to improve their employability by connecting them to a wide stakeholder community.

The work of the IPN originates from the PAGES Global Paleofire Working Group (pastglobalchanges.org/gpwg2), which ran in two phases from 2008 until 2019. The focus has been on identifying long-term regional and global fire trends, calibration methods,
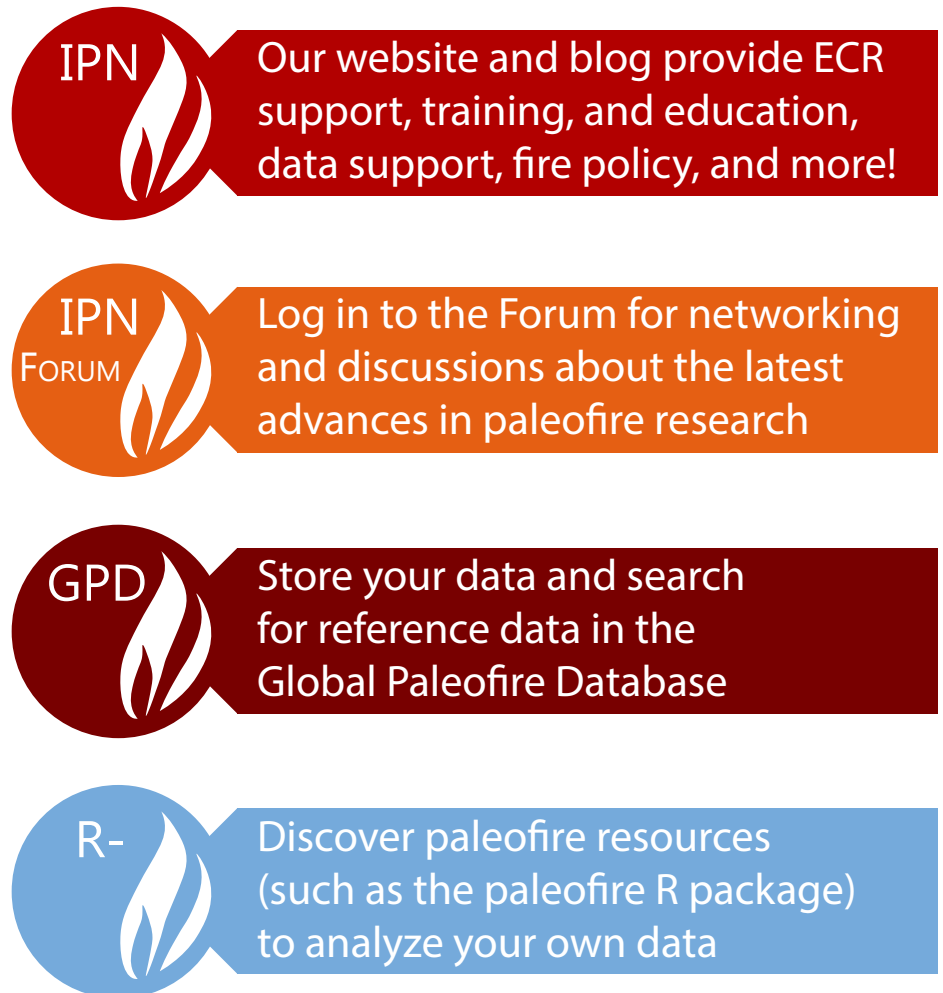

Figure 1: Structure and description of the different components of the IPN.

and the inclusion of different knowledge bases to inform fire policy.

The IPN will continue to maintain the Global Paleofire Database (GPD) and its associ-ated paleofire R package, and will provide a platform for highlighting further method developments. The GPD, which is a public-access database, is of central importance to enable regional syntheses and to identify geographical gaps in paleofire records. Alongside the GPD, the IPN hosts a paleofire discussion forum (https://discourse.paleofire.org), where a collection of resources and information regarding literature, events, and discussion topics is available. Interested colleagues are encouraged to actively engage with the IPN and to provide further feedback regarding the IPN and its activities via contact@paleofire.org and/or using the following questionnaire: https://forms.gle/a4jwjJvygoxtUqxL7

AFFILIATIONS
[1]Long-Term Ecology, Department of Zoology, University of Oxford, UK
[2]Geography Department, University of Montreal, Canada
[3]Geography Department, Royal Holloway University of London, UK
[4]Polar Terrestrial Environmental Systems, Alfred-Wegener-Institute Helmholtz Centre for Polar and Marine Research, Potsdam, Germany
[5]Climate Change Ecology Research Unit, Faculty of Geographical and Geological Sciences, Adam Mickiewicz University, Poznan, Poland
[6]Centre National de la Recherche Scientifique (CNRS), MSHE, Chrono-environnement, Besançon, France

CONTACT
IPN Executive Committee: contact@paleofire.org

REFERENCES
IPCC (2018) IPCC Special Report on the impacts of global warming of 1.5°C