

A GLOBAL INVENTORY OF BURNED AREAS AT 1 KM RESOLUTION FOR THE YEAR 2000 DERIVED FROM SPOT VEGETATION DATA

Kevin Tansey¹, Jean-Marie Grégoire², Elisabetta Binaghi³, Luigi Boschetti²,
Pietro Alessandro Brivio⁴, Dmitry Ershov⁵, Stéphane Flasse⁶, Robert Fraser⁷, Dean Graetz⁸,
Marta Maggi², Pascal Peduzzi⁹, José Pereira^{10,11}, João Silva¹¹, Adélia Sousa¹²,
and Daniela Stroppiana¹³

¹*Department of Geography, University of Leicester, University Road, Leicester, LE1 7RH, UK.
E-mail: kevin.tansey@le.ac.uk*

²*European Commission Joint Research Centre (JRC), Ispra (VA), I-21020, Italy.*

³*Università dell'Insubria, Via Ravasi 2, I-21100, Varese, Italy.*

⁴*Institute for Electromagnetic Sensing of the Environment (CNR-IREA), Via Bassini 15, I-20133,
Milan, Italy.*

⁵*International Forest Institute (IFI), Novocheriomushkinskaya str. 69a, Moscow, 117418, Russia.*

⁶*Flasse Consulting, 3 Sycamore Crescent, Maidstone, ME16 0AG, UK.*

⁷*Natural Resources Canada, Canada Centre for Remote Sensing (CCRS), 588 Booth St., Ottawa, ON,
K1A 0Y7, Canada.*

⁸*CSIRO Earth Observation Centre GPO 3023, Canberra, ACT, 2601, Australia.*

⁹*United Nations Environment Programme - Early Warning Unit (UNEP/DEWA/GRID-Geneva),
International Environment House, 1219 Geneva, Switzerland.*

¹⁰*Tropical Research Institute, Travessa Conde da Ribeira 9, 1300-142 Lisbon, Portugal.*

¹¹*Department of Forestry, Technical University of Lisbon, Tapada da Ajuda, 1349-017 Lisbon,
Portugal.*

¹²*Department of Rural Engineering, University of Évora, Apartado 94, 7002-554 Évora, Portugal.*

¹³*Institute for Overseas Agronomics, Via Parada 12, Veduggio Al Lambro, I-20057, Milan, Italy.*

Abstract. Biomass burning constitutes a major contribution to global emissions of carbon dioxide, carbon monoxide, methane, greenhouse gases and aerosols. Furthermore, biomass burning has an impact on health, transport, the environment and land use. Vegetation fires are certainly not recent phenomena and the impacts are not always negative. However, evidence suggests that fires are becoming more frequent and there is a large increase in the number of fires being set by humans for a variety of reasons. Knowledge of the interactions and feedbacks between biomass burning, climate and carbon cycling is needed to help the prediction of climate change scenarios. To obtain this knowledge, the scientific community requires, in the first instance, information on the spatial and temporal distribution of biomass burning at the global scale. This paper presents an inventory of burned areas at monthly time periods for the year 2000 at a resolution of 1 kilometre (km) and is available to the scientific community at no cost. The burned area products have been derived from a single source of satellite-derived images, the SPOT VEGETATION S1 1 km product, using algorithms developed and calibrated at regional scales by a network of partners. In this paper, estimates of burned area, number of burn scars and average size of the burn scar are described for each month of the year 2000. The information is reported at the country level. This paper makes a significant contribution to understanding the effect of biomass burning on atmospheric chemistry and the storage and cycling of carbon by constraining one of the main parameters used in the calculation of gas emissions.