



## EPA Wildland Fire Research Publications 2010-2016

**This is a list of journal articles published from 2010 to 2016 that provides results of wildfire-related studies conducted by scientists in the U.S. Environmental Protection Agency.**

**To learn more about the research, visit: [www.epa.gov/air-research/wildland-fire-research-protect-health-and-environment](http://www.epa.gov/air-research/wildland-fire-research-protect-health-and-environment).**

### **Modeling and Emissions Research**

Aurell, J.; Gullett, B.; Pressley, C.; Tabor, D.; Gribble, R. (2011). *Aerostat-lofted instrument and sampling method for determination of emissions from open area sources*. *Chemosphere*, 85, 806-811.

Aurell, J.; Gullett, B.K. (2013). *Emission factors from aerial and ground measurements of field and laboratory forest burns in the Southeastern U.S.: PM<sub>2.5</sub>, black and brown carbon, VOC, and PCDD/PCDF*. *Environ. Sci. Technol.*, 47, 8443-8452.

Aurell, J.; Gullett, B.K.; Tabor, D. (2015). *Emissions from Southeastern U.S. grasslands and pine savannas: comparison of aerial and ground field measurements with laboratory burns*, *Atmos. Environ.*, 111, 170-178.

Baker, K.; Woody, M.; Tonnesen, G.; Hutzell, G.; Pye, H.; Beaver, M.; Pouliot, G.; Pierce, T. (2016). *Contribution of regional-scale fire events to ozone and PM<sub>2.5</sub> air quality estimated by photochemical modeling approaches*. *Atmos. Environ.*, 140, 539-554.

Black, R.R.; Meyer, C.P.; Touati, A.; Gullett, B.K.; Fiedler, H.; Mueller, J.F. (2011). *Emissions of PCDD and PCDF from combustion of forest fuels and sugarcane: a comparison between field measurements and simulations in a laboratory burn facility*, *Chemosphere*, 83, 1331-1338.

Black R.R.; Meyer, C.P.; Touati, A.; Gullett, B.K.; Fiedler, H.; Mueller, J.F. (2012). *Emission factors for PCDD/PCDF and dl-PCB from open burning of biomass*. *Environment International*, 38, 62-66.

Black, R.R.; Aurell, J.; Holder, A.; Ingrid, G.J.; Gullett, B.K.; Hays, M.D.; Geron, C.D.; Tabor, D. (2016). *Characterization of gas and particle emissions from laboratory burns of peat*, *Atmos. Environ.*, 132, 49-57.

Davis, A.Y.; Ottmar, R.; Liu, Y.; Goodrick, S.; Achtemeier, G.; Gullett, B.K.; Aurell, J.; Stevens, W.; Greenwald, R.; Hu, Y.; Russell, A.; Hiers, K.; Odman, T. (2014). *Fire emission uncertainties and their effect on smoke dispersion predictions: a case study at Eglin Air Force Base, Florida, USA*. *Intl. J. Wildland Fire*, 24, 276-285.

George, I.; Black, R.; Geron, C.; Aurell, J.; Hays, M.; Preston, W.; Gullett, B.K. (2015). *Volatile and semivolatile organic compounds in laboratory peat fires*. *Atmos. Environ.*, 132, 163-170.

Grandesso, E.; Gullett, B.K.; Touati, A.; Tabor, D. (2011). *The effect of moisture, charge size, and chlorine concentration on PCDD/F emissions from open burning of forest biomass*. *Environ. Sci. Technol.*, 45, 3887-3894.

Gullett, B.; Tabor, D.; Bertrand, A.; Touati, A. (2013). *Quality control for sampling of PCDD/PCDF emissions from open combustion sources*. *Chemosphere*, 93, 494-498.

Holder, A.L.; Hagler, G.S.W.; Aurell, J.; Hays, M.D.; Gullett, B.K. (2016). *Particulate matter and black carbon optical properties and emission factors from prescribed fires in the southeastern United States*. *Journal of Geophysical Research: Atmospheres*, 121, 3465-3483.

Jathar, S.H.; Gordon, T.D.; Hennigan, C.J.; Pye, H.O.T.; Pouliot, G.; Adams, P.J.; Donahue, N.M.; Robinson, A.L. (2014). *Unspeciated organic emissions from combustion sources and their influence on the secondary organic aerosol budget in the United States*. *PNAS*, 111, 10473-10478.

Munoz, M.F.; Gullett, B.K.; Touati, A.; Font, R. (2012). *Effect of 2,4-Dichlorophenoxyacetic Acid (2,4-D) on PCDD/F emissions from open burning of biomass*. *Environ. Sci. Technol.*, 46, 9308-9314.

Strand, T.; Gullett, B.K.; Urbanski, S.; Potter, B.; O'Neill, S.; Aurell, J.; Holder, A.; Larkin, N.; Moore, M.; Rorig, M. (2016). *Grassland and forest understory biomass emissions from prescribed fires in southeastern United States – RxCADRE 2012*, *Intl. J. Wildland Fire*, 25, 102–113.

Wong D.C.; Cai C.; Pleim, J.E.; Mathur, R.; Murphy, M.S. (2016). *Validation of the WRF-CMAQ two-way model with aircraft data and high resolution MODIS data in the CA 2008 wildfire case*. In *Air Pollution Modeling and its Application XXIV*, 531-535, Eds. Steyn, D.G.; Chaumerliac, N., Springer Proceedings in Complexity Series, Springer International Publishing, Switzerland.

## Health Effects

Ghio, A.J.; Soukup, J.M.; Case, M.; Dailey, L.A.; Richards, J.; Berntsen, J.; Devlin, R.B.; Stone, S.; Rappold, A. (2012). *Exposure to wood smoke particles produces inflammation in healthy volunteers*. *Occup Environ Med.*, 69, 170-175.

Ghio, A.J.; Soukup, J.M.; Dailey, L.A.; Tong, H.; Kesic, M.J.; Budinger, G.R.; Mutlu, G.M. (2015). *Wood smoke particle sequesters cell iron to impact a biological effect*. *Chem. Res. Toxicol.* 28, 2104-2111.

Gilmour, M.I.; Kim, Y.H.; Hays, M. (2015). *Comparative chemistry and toxicity of diesel and biomass combustion emissions*, *Anal. Bioanal. Chem.*, 407, 5869-5875.

Hejl, A.M.; Adetona, O.; Diaz-Sanchez, D.; Carter, J.D.; Commodore, A.A.; Rathbun, S.L.; Naeher, L.P. (2013). *Inflammatory effects of woodsmoke exposure among wildland firefighters working at prescribed burns at the Savannah River Site, SC*. *J. Occup. Environ. Hyg.* 10, 173-180.

Kim, Y.H.; Tong, H.; Daniels, M.; Boykin, E.; Krantz, Q.T.; McGee, J.; Hays, M.; Kovalcik, K.; Dye, J.A.; Gilmour, M.I. (2014). *Cardiopulmonary toxicity of peat wildfire particulate matter and the predictive utility of precision cut lung slices*, *Part. Fibre Toxicol.*, 11:29.

Rappold, A.G.; Fann, N.L.; Crooks, J.L.; Huang, J.; Cascio, W.E.; Devlin, R.B.; Diaz-Sanchez, D. (2014). *Forecast-based interventions can reduce the health and economic burden of wildfires*. *Environ. Sci. Technol.*, 48, 10571-10579.

Rappold, A.G.; Cascio, W.E.; Kilaru, V.J.; Stone, S.L.; Neas, L.M.; Devlin, R.B.; Diaz-Sanchez, D. (2012). *Cardio-respiratory outcomes associated with exposure to wildfire smoke are modified by measures of community health*. *Environ. Health*, 11:71.

Rappold, A.G.; Stone, S.L.; Cascio, W.E.; Neas, L.M.; Kilaru, V.J.; Carraway, M.S.; Szykman, J.J.; Ising, A.; Cleve, W.E.; Meredith, J.T.; Vaughan-Batten, H.; Deyneka, L.; Devlin, R.B. (2011). *Peat bog wildfire smoke exposure in rural North Carolina is associated with cardiopulmonary emergency department visits assessed through syndromic surveillance*. Environ. Health Perspect., 119, 1415-1420.

Soukup, J.M.; Dailey, L.A.; Ghio, A.J. (2015). *Particle retention by respiratory epithelial cells is associated with persistent biological effect*. Inhal. Toxicol. 27, 335-41.

Tinling, M.A.; West, J.J.; Cascio, W.E.; Kilaru, V.; Rappold, A.G. (2016). *Repeating cardiopulmonary health effects in rural North Carolina population during a second large peat wildfire*. Environ Health, 15:12.