

Supplementary Material:

A fast and simple extraction method for analysing levoglucosan and its isomers in sediments by ion chromatography tandem mass spectrometry

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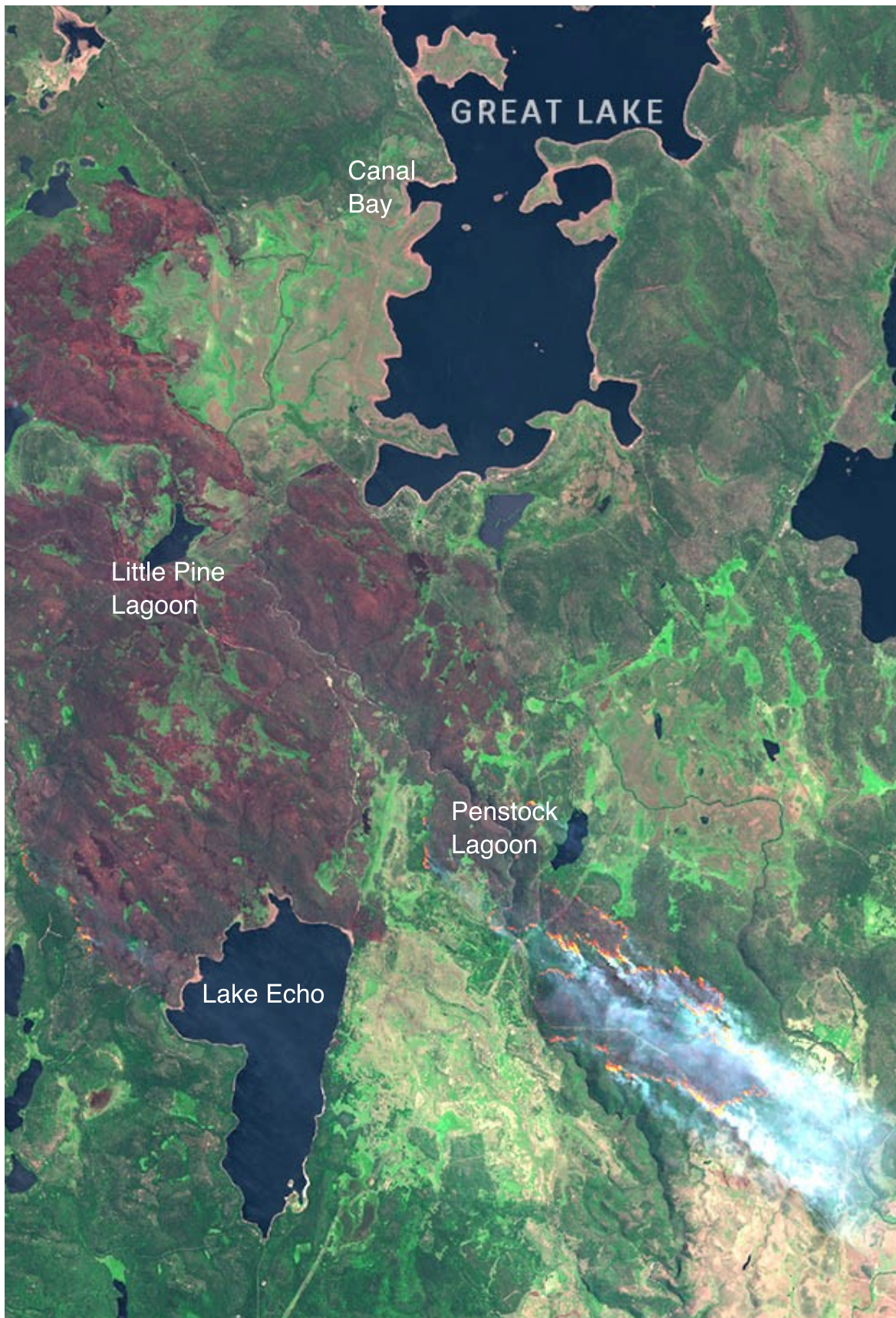


Figure 1 - 2019 Central Plateau fire showing ongoing fires and burned areas. Studied lakes are also shown. Satellite image from <https://www.abc.net.au/news/2019-02-02/great-lake-fire---jan-28/10770780?nw=0>.

Table 1 - Reported LEV, MAN, and GAL values for Urban dust CRM 1649.

Author	Urban dust CRM 1649a			Urban dust CRM 1649b		
	Levoglucofan	Mannosan	Galactosan	Levoglucofan	Mannosan	Galactosan
(Louchouart et al. 2009)	160.5 ± 4.7 n = 4	17.3 ± 1.0 n = 4	5.0 ± 0.3 n = 4	160.5 ± 5.0 n = 4	16.7 ± 0.7 n = 4	4.8 ± 0.2 n = 4
(Orasche et al. 2011)	165 ± 1.4	20.5 ± 1.0	10.8 ± 1.8			
(Kirchgeorg et al. 2014)				168 ± 4.5	15.7 ± 0.7	5.0 ± 0.2

Table 2 - Highlighting the retention times and main ions generated from the injections of common sugars in the presence of LiCl.

Sugar name	Retention time (minutes)	m/z	Main ions generated
Fucose	7.6	171	[M+Li] ⁺
		189	[M+Li+H ₂ O] ⁺
Rhamnose	12.1	171	[M+Li] ⁺
		189	[M+Li+H ₂ O] ⁺
Arabinose	12.6	157	[M+Li] ⁺
Glucose	14.0	205	[M+Li+H ₂ O] ⁺
		187	[M+Li] ⁺
		169	[M+Li-H ₂ O] ⁺
Mannose	14.1	205	[M+Li+H ₂ O] ⁺
		187	[M+Li] ⁺
		169	[M+Li-H ₂ O] ⁺
Xylose	14.6	157	[M+Li] ⁺
Ribose	15.9	157	[M+Li] ⁺
Sucrose	20	349	[M+Li] ⁺
Maltose	unknown	n.a	n.a

Table 3 - Analytical performance of the repeat IC-TSQ-MS analysis of LPL_11 sediment.

	LEV	MAN
Reference sediment av. conc (µg/g)	0.27	0.12
Reference sediment (RSD %)	9.0	9.6