

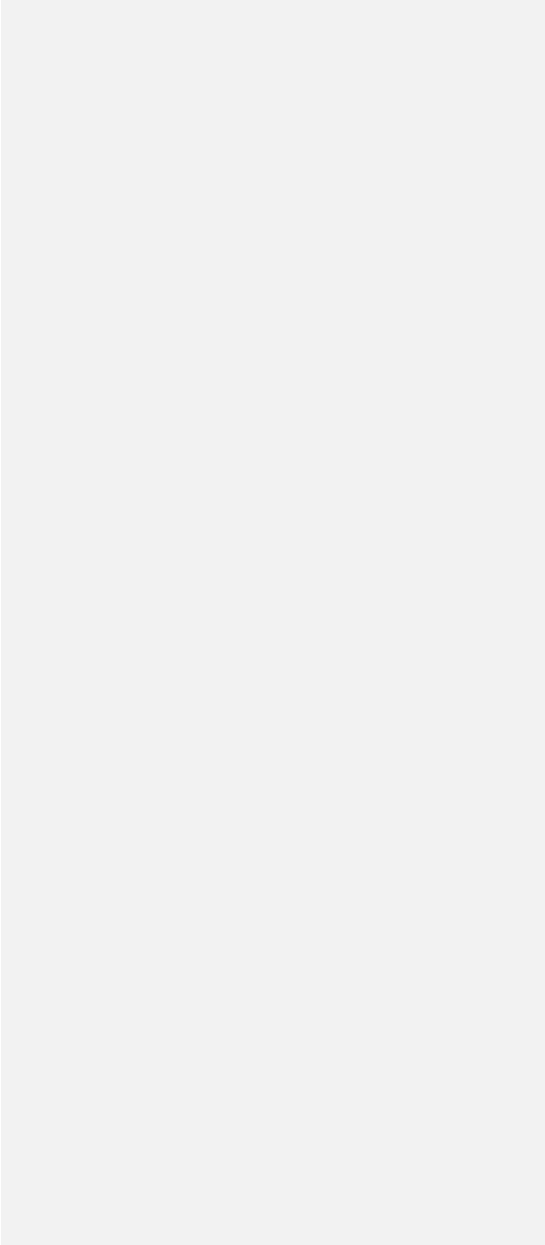
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SUPPLEMENTARY MATERIAL

Table A1. Methodological information and data from laboratory tests, field blanks and bulk deposition collectors in other studies.

Study	Location	Climate	T (°C)	P (mm/y)	Deposition of N	Ion exchange resin	Extractant	Number of extractions	Sampling period length	Number collectors per open-field plot	Area of collection per plot (cm ²)	Number and type of blanks	NO _x				NH ₄ ⁺				
													Blank correction	Intra-site variability	Absorption efficiency	Recovery efficiency	Blank correction	Intra-site variability	Absorption efficiency	Recovery efficiency	
Boutin et al., 2015	Pyrenees (France)	Subalpine (1500-2000 m a.s.l.)	9.6	1245	4.5–6.6 kg ha ⁻¹ y ⁻¹	mixed-bed IONAC® NM-60	2 M KCl (200 ml)	2	1 month; during 5 months	2	628	3 in total (different sites); field blanks	non detected	12 % *		0.014 ± 0.006 mg N g ⁻¹	19 % *				
Brumbaugh et al., 2012	Alaska	Boreal	-4.4	1821	< 1 kg ha ⁻¹ y ⁻¹	2-stage columns	1 M KI		6 months	3	236	9; field blanks	near detection limits	8–10 %		106 ± 7 %	detection limits	5–10 %	101 ± 3 %		
Cerón et al., 2015	SE-Center Mexico	Sub-humid warm / humid sub-warm	27.0 / 19.1	1300 / 2238	only throughfall < 1 kg ha ⁻¹ y ⁻¹	mixed bed Amberlite™ IRN150	2 M KCl (200 ml)	3	2 months	only throughfall	only throughfall	3; field blanks	only throughfall			98.6 %		only throughfall	98.6 %		
Clow et al., 2015	Rocky Mountain National Park (USA)	Alpine / subalpine			approx. 2 kg ha ⁻¹ y ⁻¹	mixed bed Amberlite™ IRN150	1 M KI (200 ml)	2	summer (> 3 months) and winter (> 8 months)	2	470	1 per site: field blank	< 0.003 mg N g ⁻¹	16 % *		100 %	< 0.003 mg N g ⁻¹	21 % *	88 %		
Fang et al., 2011	Southern China	"warm and humid"	19.5 / 21.9	1380 / 1927	16.2–38.2 kg ha ⁻¹ y ⁻¹	201x7(717) & 001x7(732), Guangzhou (China)	2 M KCl (50 ml for 6.4 ml of resin)	2	4 months	5	565	2 per site: field blank	0.003–0.028 mg N g ⁻¹	9–34 %	90–99 %	90 %	< 0.001 mg N g ⁻¹	5–23 %	94–100 %	97 %	
Fenn et al., 2002	San Bernardino Mountains (CA, USA)	Mediterranean semi-arid	155–249		1.9–5.1 kg ha ⁻¹ y ⁻¹	mixed bed Amberlite™ IRN150	2 M KCl (200 ml)	3	Two periods of 3 and 4 months, respectively	4	314	5; lab blanks	< 0.001 mg N g ⁻¹			104.4 %	0.001 mg N g ⁻¹		104.5 %		
Fenn and Poth, 2004	San Bernardino Mountains (CA, USA)	Mediterranean semi-arid	340–840		4.0–15.6 kg ha ⁻¹ y ⁻¹	mixed bed Amberlite™ IRN150	2 M KCl (200 ml)	2	3-, 6-, 9- and 12-month periods simultaneously during one year	4	314	lab blanks	< 0.001 mg N g ⁻¹	3 mo.; 1–16 % 1 y.; 8–61 %			0.001 mg N g ⁻¹	3 mo.; 13–27 % 1 y.; 21–69 %			
Hansen, 2012 ("Fenn collectors")	Grand Teton National Park (USA)	Alpine semi-arid	8.5	155	0.2–0.3 kg ha ⁻¹ (summer)	mixed bed Rexin®	2 M KCl (100 ml)	1 (shaken for one hour)	70–90 days during the alpine growing season (Jul-Oct)	4	2922	1 per plot; field blanks	< 0.001 mg N g ⁻¹				< 0.001 mg N g ⁻¹				
Köhler et al., 2012	Lore Lindu National Park, Central Sulawesi (Indonesia)	Tropical	24.5	2500	1.4–2.7 kg N-NO _x ha ⁻¹ y ⁻¹	mixed bed Amberlite™ MB 20	1 M NaCl (for 10 g of resin)	2	15–30 days during 1-2 years	3	851	1; lab blank	0.001 mg N g ⁻¹			95 %		non measured			
Sheibley et al., 2014	Mount Rainier, North Cascades, & Olympic Nat. Parks (WA, USA)	> 1219 m			0.1–0.5 kg ha ⁻¹ (summer)	mixed bed Amberlite™ IRN150	1 N KI	2	59–86 days; during summer 2008	5	1571	1 field blank (per site) and 3 lab blanks	0.001–0.003 mg N g ⁻¹	9–36 %	approx. 100 %	90–91 %	≤ 0.001 mg N g ⁻¹	7–89 %	approx. 100 %	74–96 %	
Tuloss and Cadenaso, 2015	California	Mediterranean	14–17	500–940		mixed bed Amberlite™ IRN150	2 M KCl (100 ml)	3	6 weeks; during 8 months	5	2454					90–95 %			90–95 %		
Zhan et al., 2015	North–South Transect of Eastern China		-5.6–22.1	526–1771	2.7–33.0 kg ha ⁻¹ y ⁻¹	mixed bed of #717 anion and #732 cation	0.2 M KCl (100 ml)	3	1 month; during 3 years	5	192	2 field blanks			> 99 %	90.3–95.5 %		> 99 %	90.9–100 %		
Simkin et al., 2004	Only laboratory test are considered here					anion-exchange Dowex Monosphere 550-A	1 M KI (50ml)	3 (shaken 30 min at 120 rpm)	4–6 weeks	3 per concentration	3; lab blanks	< DL		100 %	93.9–100.4 %			non measured			
van Dam et al., 1991	S Netherland					mixed bed Dowex 1-X8 and 50W-X8	1M KCl (500 ml) and 1M HCl (500 ml)	1	2 weeks		860	NO	not measured	18 %			not measured	8 %			
Wieder et al., 2010	Athabasca Oil Sands Region, Alberta (Canada)	Boreal - Subarctic	1	387	< 1 kg ha ⁻¹ y ⁻¹	mixed bed Amberlite™ IRN150	2 M KCl (40 + 10 ml)	2; bath + rinsing	5–7 months (during 3.5 years)	3–5	236–1418	3–5 per period; lab blank									
Yamashita et al., 2014	Borneo island (Malaysia)	Equatorial with modest annual seasonality		2778	2.2 kg ha ⁻¹ y ⁻¹	mixed bed Amberlite™ MB-1	1 M KCl (100 ml for 2 g of resin)	2	5–7 months (during 2 years)	3	339	1 per period; field blank		< 10–50 %					< 8–25 %		
Present work (CB)	Barcelona region, Northeastern Spain	Mediterranean subhumid	15.2	652	3.5 kg ha ⁻¹ y ⁻¹	mixed bed Amberlite™ IRN150	2 M KCl (200 ml)	2	3–4 months (during 2 years)	2	628	1-3; lab blanks	< 0.001–0.002 mg N g ⁻¹	2–66 %			0.024–0.061 mg N g ⁻¹		0–141 %		
Present work (CA)	Navarra region, Northern Spain	Mediterranean continental-subhumid	12.3	645	5.4 kg ha ⁻¹ y ⁻¹	mixed bed Amberlite™ IRN150	2 M KCl (200 ml)	2	3–5 months (during 2 years)	4	1257	2; lab blanks	< 0.001–0.006 mg N g ⁻¹	5–67 %			0.039–0.071 mg N g ⁻¹		22 %		
Present work (TC)	Madrid region, Center Spain	Mediterranean semiarid	14.6	348	3.1 kg ha ⁻¹ y ⁻¹	mixed bed Amberlite™ IRN150	2 M KCl (200 ml)	2	3–5 months (during 2 years)	4	1257	1; lab blanks	0.001–0.004 mg N g ⁻¹	2–20 %	100 %	99 %	0.054–0.103 mg N g ⁻¹		4–27 %	100 %	112 %

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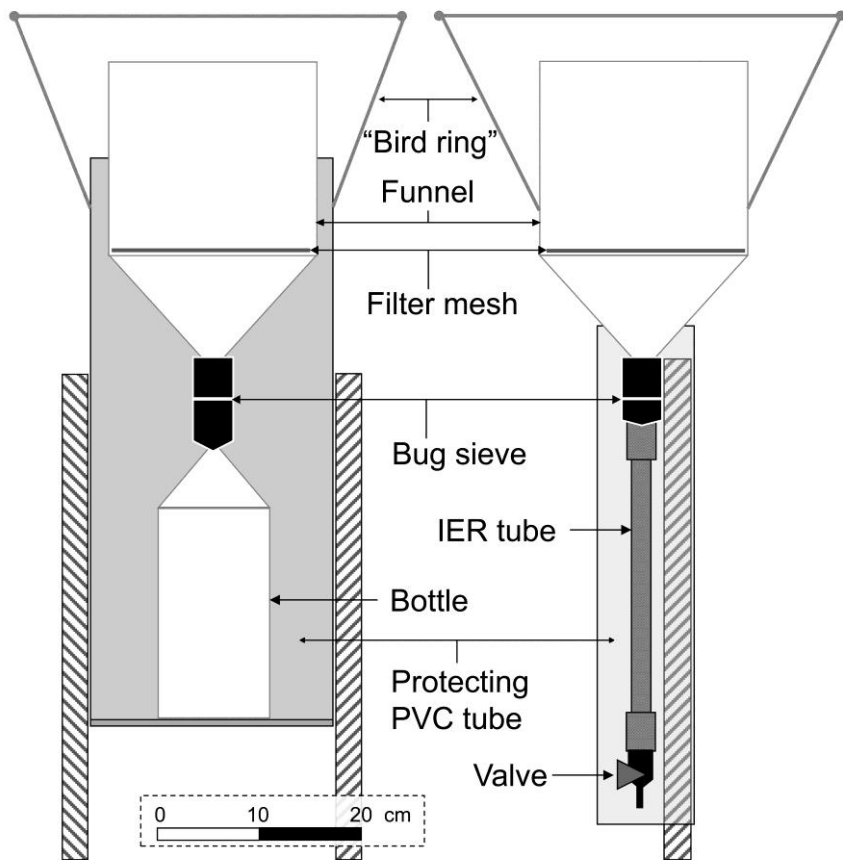


Figure A1. Diagrams of collectors deployed in the study sites.

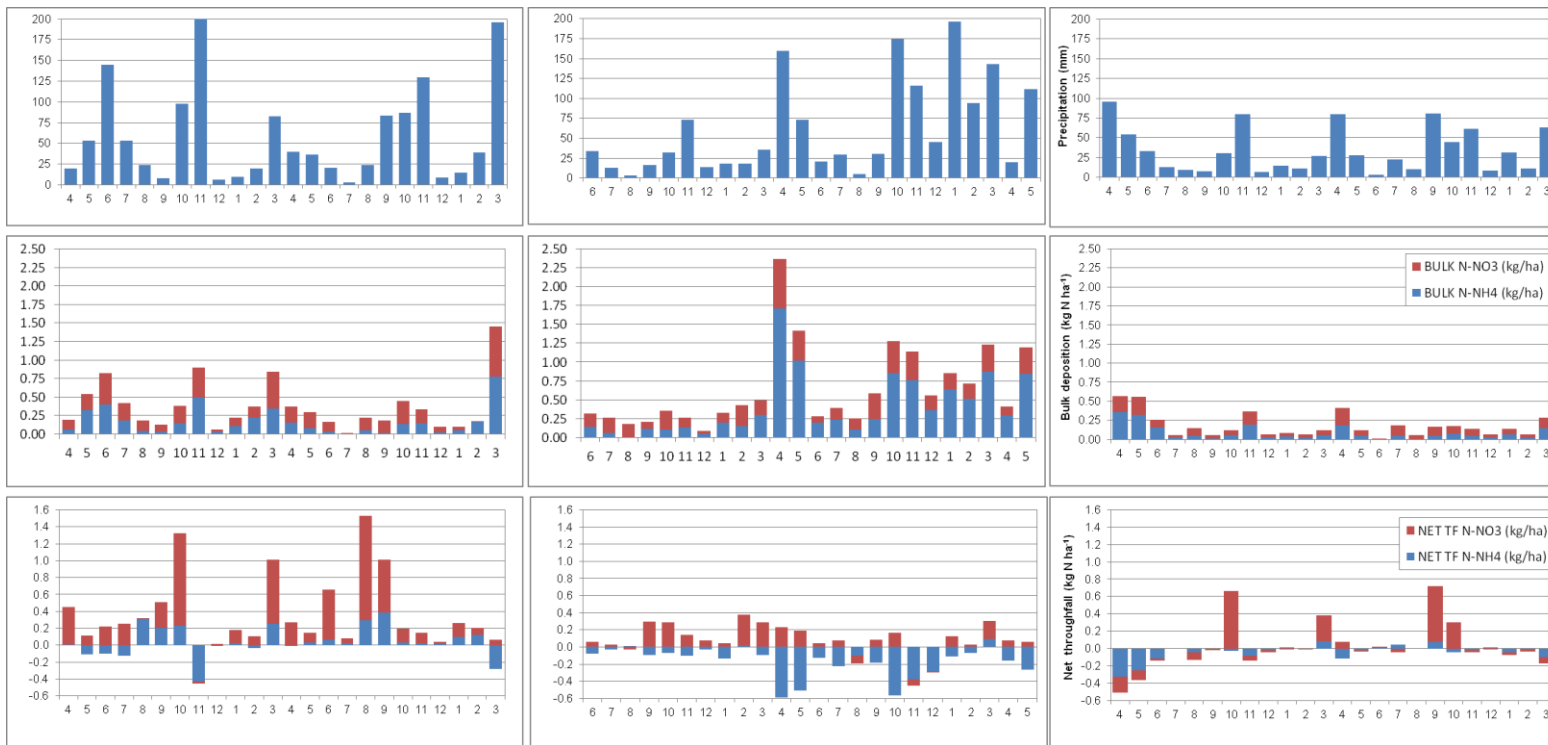


Figure A2. Monthly precipitation (top), and bulk (central) and net throughfall (bottom) deposition of nitrogen in the three sampling sites (CB in the left panel, CA in the central one and TC in the right one).

Comentat [a1]: Yo eliminaria esta grafilca y pasaria los datos de pr y NTF a la Fig. 4

De todos modos, Solo si se mantiene la sección sobre la estacionalidad, que me parece que se podría quitar de este artículo pq se va un poco del tema