Supplementary Material

Supplementary Data

1. The Campanian Ignimbrite stratigraphy

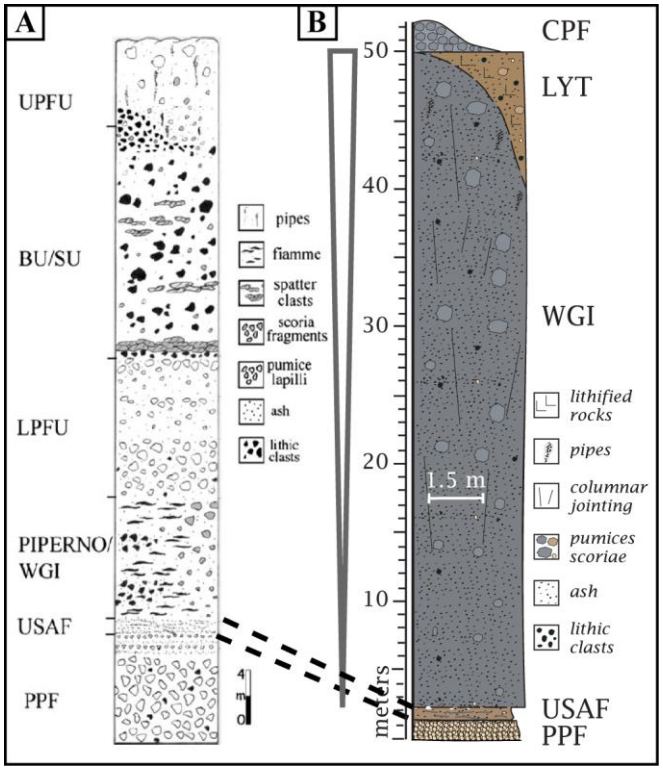

Figure 1. *Reconstructed stratigraphy of CI proximal (Fedele et al., 2008)* ***(A)*** *and distal* ***(B)*** *deposits. BU: Breccia Unit; CPF: Coarse Pumice Flow; LPFU: Lower Pumice Fallout; LYT: Lithified Yellow Tuff; PPF: Plinian Pumice Fallout; SU: Spatter Unit; UPFU: Upper Pumice Flow Unit; USAF: Unconsolidated Stratified Ash Flow; WGI: Welded Gray Ignimbrite.*

2. Literature and field data

Data from literature inserted into the GIS database are reported in Table 1. Moreover, other papers were used for geological sketches, proximal area isopach maps and isopleths maps (Ortolani and Aprile, 1985; Incoronato and Nardi, 1987; Scandone et al., 1991; Bellucci, 1994; Signorelli et al., 1999; Fedele et al., 2002; Aprile et al., 2004; Fowler et al., 2007; Milia and Torrente, 2007; Giaccio et al., 2008; Pappalardo et al., 2008; Arienzo et al., 2009, 2011; de Vivo et al., 2010; Fedele et al., 2016; Scarpati and Perrotta, 2016; Smith et al., 2016). Outcrops location are reported in Table 2.

ID	Paper	Latitude (°)	Longitude (°)	Thickness (m)	Name

1	Barberi et al. (1978)	41.05698	14.33346	14.9	S. Nicola La Strada
2	Barberi et al. (1978)	41.05573	14.70687	15.5	Tufara
3	Barberi et al. (1978)	40.94861	14.56534	41.0	Tufino
4	Cappelletti et al. (2003)	41.06165	14.42083	7.0	Balzarama
5	Cappelletti et al. (2003)	41.11082	14.47346	8.3	Dugenta
6	Cappelletti et al. (2003)	40.94280	14.60260	12.1	La schiava
7	Cappelletti et al. (2003)	41.23293	14.50691	4.3	Faicchio
8	Cappelletti et al. (2003)	40.77209	14.66155	20.9	Castel San Giorgio
9	Cappelletti et al. (2003)	40.95816	15.00003	7.1	San Mango S. C.
10	De Vivo et al. (2001)	40.94472	14.16421	19.6	Giugliano
11	De Vivo et al. (2001)	40,93534	14,56743	3.8	Taurano
12	De Vivo et al. (2001)	41.17565	14.49265	10.1	Sant'Agata dei Goti
13	De Vivo et al. (2001)	41.06337	14.70339	10.6	Altavilla
14	De Vivo et al. (2001)	40.97126	14.54410	10.7	Tufino
15	De Vivo et al. (2001)	40.95244	14.55400	10.1	Sperone
16	De Vivo et al. (2001)	40.87905	14.29606	8.9	Ponti Rossi
17	De Vivo et al. (2001)	40.88207	14.31975	5.1	Poggioreale
18	De Vivo et al. (2001)	40.79846	14.04573	9.0	Monte di Procida
19	De Vivo et al. (2001)	40.62828	14.37821	10.3	Sant'Agnello
20	De Vivo et al. (2001)	40.87633	14.34249	6.8	Arpino
21	De Vivo et al. (2001)	40.54981	14.23133	10.4	Capri
22	L. Fedele et al. (2008)	40.76367	14.03370	9.8	Punta della lingua
23	L. Fedele et al. (2008)	40.76784	14.01611	27.0	Scotto di Carlo
24	L. Fedele et al. (2008)	40.79131	14.05739	25.7	Monte di Procida
25	L. Fedele et al. (2008)	40.84665	14.05135	10.2	Cuma
26	L. Fedele et al. (2008)	40.89064	14.07671	6.0	San Severino

27	L. Fedele et al. (2008)	40.88900	14.10608	17.0	Spinelli
28	L. Fedele et al. (2008)	40.90952	14.09640	14.0	Zaccaria
29	L. Fedele et al. (2008)	40.92155	14.11957	24.0	Qualiano
30	L. Fedele et al. (2008)	40.90092	14.14108	18.9	Punta Marmolite
31	L. Fedele et al. (2008)	40.88169	14.16774	5.1	Quarto
32	L. Fedele et al. (2008)	40.85687	14.18742	72.0	Camaldoli
33	L. Fedele et al. (2008)	40.84269	14.22948	7.4	San Martino Hill
34	L. Fedele et al. (2008)	40.85087	14.23347	9.1	Montesanto
35	L. Fedele et al. (2008)	40.86016	14.22790	6.1	Fontanelle
36	L. Fedele et al. (2008)	40.87866	14.25874	4.5	Ponti Rossi
37	L. Fedele et al. (2008)	40.88394	14.27807	14.0	Santa Maria del pianto
38	Giaccio et al. (2006)	40.86797	14.85653	13.1	Serino
39	Langella et al. (2013)	40.88284	14.66613	3.6	Moschiano
40	Langella et al. (2013)	41.06646	14.71668	3.7	Tufara
41	Langella et al. (2013)	40.70136	14.62501	8.8	Pucara
42	Langella et al. (2013)	40.69312	14.83241	8.2	Torrente Sordina
43	Langella et al. (2013)	41.36129	13.86913	7.2	Mortola
44	Langella et al. (2013)	40.60310	14.35675	2.4	Monticchio
45	Langella et al. (2013)	41.12660	14.45214	8.2	Dugenta
46	Langella et al. (2013)	41.07085	14.39716	6.5	Balzarama
47	Langella et al. (2013)	41.04894	14.38355	11.6	Maddaloni
48	Langella et al. (2013)	41.01588	14.75955	12.1	Altavilla
49	Langella et al. (2013)	40.95232	14.58959	12.0	La schiava
50	Langella et al. (2013)	41.09617	14.45043	3.9	S. Agata dei Goti
51	Melluso et al. (1995)	40.84929	14.04881	15.6	Cuma
52	Melluso et al. (1995)	40.79063	14.04569	20.1	Marina di Vitafumo

53	Melluso et al. (1995)	40.76432	14.03661	13.5	Punta della lingua
54	Melluso et al. (1995)	40.76609	14.02101	23.6	Scotto di Carlo
55	Melluso et al. (1995)	40.76252	14.00877	10.1	Cimitero
56	Milia et al. (2003)	40.77427	14.43946	25.2	Trecase
57	Orsi and Rosi (1991)	40.89444	14.13328	16.0	Punta Marmolite
58	Orsi and Rosi (1991)	40.84473	14.04803	13.7	Cuma
59	Orsi and Rosi (1991)	40.79548	14.04394	9.7	Monte di Procida
60	Orsi and Rosi (1991)	40.71367	13.95586	1.3	Ischia grotte di terra
61	Orsi and Rosi (1991)	40.74482	13.99483	5.3	Vivara
62	Orsi and Rosi (1991)	40.76353	14.01032	10.2	Procida Pozzo vecchio
63	Orsi and Rosi (1991)	40.76622	14.02152	19.8	Procida scoglio cannone
64	Orsi and Rosi (1991)	40.76470	14.03672	17.2	Procida Punta della lingua
65	Orsi and Rosi (1991)	40.78996	14.04678	28.5	Marina di Vitafumo
66	Orsi and Rosi (1991)	40.80904	14.04393	19.5	Torregaveta
67	Orsi and Rosi (1991)	40.87962	14.07540	5.6	San Severino
68	Orsi and Rosi (1991)	40.85386	14.19331	79.2	Camaldoli
69	Orsi and Rosi (1991)	40.95268	14.11209	30.4	Scarafea
70	Orsi and Rosi (1991)	40.87458	14.26099	8.0	Ponti Rossi
71	Orsi and Rosi (1991)	40.65581	14.43023	7.6	Vico Equense
72	Orsi and Rosi (1991)	40.92946	14.70306	0.7	Acqua Fidia
73	Orsi and Rosi (1991)	41.26809	14.03841	1.6	Furnolo
74	Orsi and Rosi (1991)	41.12338	13.90684	2.6	Mondragone
75	Orsi and Rosi (1991)	40.71908	14.78138	0.3	Pellezzano
76	Orsi and Rosi (1991)	41.29998	13.99325	0.9	Roccamonfina
77	Orsi and Rosi (1991)	41.22075	14.12802	0.8	Visciano
78	Orsi and Rosi (1991)	41.27260	14.52178	8.6	Massa

79	Orsi et al. (1996)	40.85020	14.20771	80.0	Verdolino Valley
80	Orsi et al. (1996)	40.84979	14.19188	80.0	Torre di Franco
81	Orsi et al. (1996)	40.87559	14.31236	26.0	66
82	Orsi et al. (1996)	40.87037	14.30095	15.3	67
83	Orsi et al. (1996)	40.87446	14.29572	48.1	4
84	Orsi et al. (1996)	40.87704	14.29033	8.9	61
85	Orsi et al. (1996)	40.88727	14.29953	12.4	65
86	Orsi et al. (1996)	40.87741	14.26781	30.0	51
87	Orsi et al. (1996)	40.87480	14.24930	33.0	46
88	Orsi et al. (1996)	40.87765	14.22415	33.1	36
89	Orsi et al. (1996)	40.90006	14.22256	28.9	34
90	Orsi et al. (1996)	40.90738	14.24090	8.6	44
91	Orsi et al. (1996)	40.90336	14.26784	57.2	49
92	Orsi et al. (1996)	40.84838	14.05607	15.0	Cuma
93	Orsi et al. (1996)	40.86702	14.26767	6.0	Ponti Rossi
94	Orsi et al. (1996)	40.87882	14.08267	17.0	San Severino
95	Orsi et al. (1996)	40.86954	14.30927	4.0	Sant'Arpino
96	Orsi et al. (1996)	40.88741	14.15640	18.2	Trefola
97	Ort et al. (2003)	41.01429	14.76629	34.8	Altavilla
98	Ort et al. (2003)	41.27794	14.53083	12.5	Massa
99	Ort et al. (2003)	41.13269	13.89663	6.1	Mondragone
100	Pappalardo et al. (2002)	40.87216	14.26782	30.1	Ponti Rossi
101	Perrotta et al. (2006)	40.83247	14.24658	0.0	8
102	Perrotta et al. (2006)	40.83744	14.22889	0.0	1
103	Perrotta et al. (2006)	40.83885	14.23355	0.0	2
104	Perrotta et al. (2006)	40.84008	14.23731	0.0	3

105	Perrotta et al. (2006)	40.84207	14.24123	14.4	4
106	Perrotta et al. (2006)	40.84634	14.24016	15.5	5
107	Perrotta et al. (2006)	40.86076	14.23170	6.2	6
108	Perrotta et al. (2006)	40.85981	14.23585	2.0	I
109	Perrotta et al. (2006)	40.83756	14.24999	10.0	II
110	Perrotta et al. (2006)	40.83270	14.24157	21.7	III
111	Perrotta et al. (2010)	40.81133	14.07042	0.0	10
112	Perrotta et al. (2010)	40.80816	14.04338	5.6	11
113	Perrotta et al. (2010)	40.79909	14.03731	5.6	12
114	Perrotta et al. (2010)	40.79504	14.04368	5.6	13
115	Perrotta et al. (2010)	40.78831	14.05603	2.9	14
116	Perrotta et al. (2010)	40.78932	14.06303	0.9	15
117	Perrotta et al. (2010)	40.75982	14.02430	7.4	1
118	Perrotta et al. (2010)	40.75991	14.03198	0.0	2
119	Perrotta et al. (2010)	40.76759	14.01905	26.3	3
120	Perrotta et al. (2010)	40.76807	14.00989	0.0	4
121	Perrotta et al. (2010)	40.76457	14.01012	9.2	5
122	Perrotta et al. (2010)	40.76275	14.00877	9.8	6
123	Perrotta et al. (2010)	40.76039	14.00850	3.0	7
124	Perrotta et al. (2010)	40.75873	14.00936	5.2	8
125	Perrotta et al. (2010)	40.74480	13.99123	2.1	9
126	Rolandi et al. (2003)	41.05877	14.42550	3.1	Maddaloni
127	Rolandi et al. (2003)	41.06104	14.46361	14.7	Durazzano
128	Rolandi et al. (2003)	40.89955	14.65636	4.9	Taurano
129	Rolandi et al. (2003)	40.88146	14.68907	11.1	Moschiano
130	Rolandi et al. (2003)	40.81916	14.67199	18.8	Sarno

131	Rolandi et al. (2003)	40.80551	14.70470	7.7	Siano
132	Rolandi et al. (2003)	40.78712	14.70638	34.4	Castel San Giorgio
133	Rolandi et al. (2003)	40.66237	14.44305	15.5	Seiano Valley
134	Rolandi et al. (2003)	40.62574	14.41407	9.9	Piano di Sorrento
135	Rolandi et al. (2003)	40.76290	14.03357	20.5	Punta della lingua
136	Rolandi et al. (2003)	40.79092	14.04556	22.0	Marina di Vitafumo
137	Rolandi et al. (2003)	40.81290	14.04381	27.5	Torregaveta
138	Rolandi et al. (2003)	40.78915	14.06432	3.0	Miliscola
139	Rolandi et al. (2003)	40.84768	14.05100	15.4	Cuma
140	Rolandi et al. (2003)	40.89771	14.14052	13.8	Punta Marmolite
141	Rolandi et al. (2003)	40.85252	14.19673	58.2	Camaldoli
142	Rolandi et al. (2003)	40.84307	14.21673	162.0	Vomero
143	Rolandi et al. (2003)	40.84287	14.24107	17.8	San Martino
144	Rolandi et al. (2003)	40.86743	14.27793	27.1	Ponti Rossi
145	Rolandi et al. (2003)	40.87120	14.29386	26.3	Poggioreale
146	Rolandi et al. (2003)	40.87720	14.31490	5.2	Arpino
147	Rolandi et al. (2003)	40.83655	14.25039	43.0	Palazzo Reale
148	Rolandi et al. (2003)	40.78112	14.44386	50.0	Trecase
149	Rosi et al. (1988)	40.71199	13.96250	0.7	Grotta di Terra
150	Rosi et al. (1988)	40.79707	14.04236	12.6	Monte di Procida - 6
151	Rosi et al. (1988)	40.78973	14.05386	5.3	Monte di Procida - 5
152	Rosi et al. (1988)	40.74315	13.99227	1.6	Vivara - 2
153	Rosi et al. (1988)	40.76072	14.00861	5.0	Procida - 3
154	Rosi et al. (1988)	40.76522	14.01056	11.7	Procida - 4
155	Rosi et al. (1996)	40.71287	13.95659	1.3	Ischia grotte di terra
156	Rosi et al. (1996)	40.74326	13.99649	5.5	Vivara

157	Rosi et al. (1996)	40.76308	14.01249	11.0	Pozzo vecchio
158	Rosi et al. (1996)	40.76653	14.02035	20.4	Scoglio cannone
159	Rosi et al. (1996)	40.76444	14.03693	16.8	Punta della lingua
160	Rosi et al. (1996)	40.78999	14.04661	26.6	Vitafumo
161	Rosi et al. (1996)	40.81117	14.04389	21.0	Torregaveta
162	Rosi et al. (1996)	40.84822	14.04739	15.1	Cuma
163	Rosi et al. (1996)	40.88104	14.07809	5.2	San Severino
164	Rosi et al. (1996)	40.89488	14.13404	21.5	Punta Marmolite
165	Rosi et al. (1996)	40.85590	14.19588	77.2	Camaldoli
166	Rosi et al. (1996)	40.95234	14.11780	26.3	Scarafea
167	Rosi et al. (1996)	40.87618	14.26290	7.4	Ponti Rossi
169	Rosi and Sbrana (1987)	40.85786	14.19574	25.0	Camaldoli
170	Rosi and Sbrana (1987)	40.90527	14.14250	13.0	Punta Marmolite
171	Rosi and Sbrana (1987)	40.88230	14.06558	1.1	San Severino
172	Sparice (2015)	41.40636	13.98329	10.3	Mignano Monte Lungo
173	Sparice (2015)	41.28622	13.99279	4.3	Roccamonfina
174	Sparice (2015)	41.26915	14.03347	10.0	Furnolo
175	Sparice (2015)	41.18818	13.97548	10.0	Carinola
176	Sparice (2015)	41.12329	13.90834	4.9	Mondragone
177	Sparice (2015)	41.13758	14.25327	7.1	Triflisco
178	Sparice (2015)	41.16939	14.26525	8.0	Casella1
179	Sparice (2015)	41.19606	14.23739	3.0	Casella2
180	Sparice (2015)	41.20890	14.40448	5.0	Ruviano
181	Sparice (2015)	41.27236	14.46645	8.2	Faicchio
182	Sparice (2015)	41.27024	14.51387	3.2	S. Lorenzello I
183	Sparice (2015)	41.26833	14.53105	8.2	San Lorenzello II

184	Sparice (2015)	41.12278	14.43879	8.2	Dugenta
185	Sparice (2015)	41.09454	14.48905	20.5	S. Agata dei Goti
186	Sparice (2015)	41.08609	14.54280	4.5	Moiano
187	Sparice (2015)	41.12554	14.62174	21.0	Tocco Claudio
188	Sparice (2015)	41.02847	14.69167	4.6	Roccabascerana
189	Sparice (2015)	41.05333	14.71525	3.6	Tufara
190	Sparice (2015)	41.06472	14.88412	1.0	Poeti
191	Sparice (2015)	41.00583	14.76202	20.4	Altavilla Irpina
192	Sparice (2015)	41.06822	15.04053	3.0	Grottaminarda
193	Sparice (2015)	40.97184	14.96672	8.5	S. Mango sul calore
194	Sparice (2015)	40.93227	14.70449	1.1	Acqua Fidia
195	Sparice (2015)	40.91711	14.67449	6.6	Monteforte Irpino 1
196	Sparice (2015)	40.89668	14.66921	6.6	Monteforte Irpino 2
197	Sparice (2015)	40.87410	14.67623	1.7	Monteforte irpino 3
198	Sparice (2015)	40.89039	14.63113	5.0	Visciano 1
199	Sparice (2015)	40.90129	14.62203	5.0	Visciano2
200	Sparice (2015)	40.86459	14.70745	4.7	Moschiano
201	Sparice (2015)	40.87153	14.82712	0.7	Aiello sul sabato
202	Sparice (2015)	40.83936	14.89030	4.3	Serino
203	Sparice (2015)	40.82302	14.91053	7.0	Sala
204	Sparice (2015)	40.81967	14.81731	0.5	Montoro superiore
205	Sparice (2015)	40.75354	14.80000	1.5	Penta
206	Sparice (2015)	40.77694	14.65092	1.9	S.Anna
207	Sparice (2015)	40.73088	14.70338	0.5	S.Lucia
208	Sparice (2015)	40.71625	14.77207	5.1	Cologna
209	Sparice (2015)	40.69339	14.88640	6.9	Fosso di Prepezzano

210	Sparice (2015)	40.67902	14.85191	16.1	Sordina
211	Sparice (2015)	40.69618	14.63176	4.6	Polvica
212	Sparice (2015)	40.67848	14.63972	10.7	Paterno S. Arcangelo
213	Sparice (2015)	40.63868	14.40205	20.7	Piano di Sorrento
214	Sparice (2015)	40.61669	14.38275	1.6	Cesarano
215	Sparice (2015)	40.59932	14.35159	3.4	Monticchio
216	Aprile and Toccaceli (2002)	40.81330	14.61202	24.3	Pozzo SSLM6
217	Aiello et al. (2018)	41.112175	13.904175	16.9	LV4
218	Costanzo and Nunziata (2019)	40.83715	14.25036	10.0	S97
219	Costanzo and Nunziata (2019)	40.84192	14.24980	4.9	S95
220	Nunziata et al. (2004)	40.86762	14.30477	16.1	Site 2 - S67
221	Nunziata et al. (2004)	40.87512	14.27622	8.0	Site 3
222	Torrente et al. (2010)	40.93713	14.11618	75.6	16
223	Torrente et al. (2010)	40.82895	14.22241	18.7	67
224	Torrente et al. (2010)	40.82960	14.24913	83.5	75
225	Torrente et al. (2010)	40.83690	14.25605	42.9	78
226	Torrente et al. (2010)	40.84064	14.24542	13.6	81b
227	Torrente et al. (2010)	40.84729	14.24480	13.9	81c
228	Torrente et al. (2010)	40.85683	14.27695	29.7	100
229	Torrente et al. (2010)	40.86468	14.29650	24.7	103
230	Torrente et al. (2010)	40.87460	14.29625	39.8	110
231	Torrente et al. (2010)	40.88993	14.28339	39.2	114
232	Torrente et al. (2010)	40.90919	14.31455	60.8	118
233	Torrente et al. (2010)	40.89068	14.33805	16.1	141
234	Torrente et al. (2010)	40.87740	14.21536	107.4	590

235	Torrente et al. (2010)	40.84317	14.22551	79.6	665
236	Torrente et al. (2010)	40.85645	14.23688	64.0	667
237	Torrente et al. (2010)	40.89704	14.29650	50.3	1021
238	Torrente et al. (2010)	40.98579	14.17752	37.0	T163

Table 1. *Outcrops used in the GIS database, the relative coordinates were taken from the papers or from the georeferenced map, produced during this work.*

ID	Site name	Latitude (°)	Longitude (°)	Altitude (m) a.s.l.	Units	Observed Thickness (m)
1	Stop 1 - Mignano Montelungo	41.40661	13.98082	95	WGI	8
2	Stop 2 - Mignano Montelungo	41.40628	13.98121	100	USAF, WGI	1
3	Stop 3 - Mignano Montelungo	41.40629	13.98113	110	USAF, WGI	1
4	Stop 4 - Roccamonfina	41.28944	13.99278	540	GL, USAF, WGI	50
5	Stop 5 - Roccamonfina	41.28952	13.99265	560	WGI	4
6	Stop 6 - Sessa Aurunca	41.24711	13.93903	185	WGI	12
7	Ponte Sant'Agata	41.22863	13.93258	139	WGI	30
8	SP14	41.27269	13.9621	545	WGI	25
9	Stop 7 - Tavola	41.29957	14.00002	610	USAF, WGI	2
10	Stop 8 - Torano A	41.27172	13.99416	440	WGI	1
11	Stop 8 - Torano B	41.269	14.04052	461	GL, USAF, WGI	30
12	Stop 9 - Furnolo	41.27165	13.99404	301	GL, USAF, WGI	2
13	Stop 10 - Furnolo	41.26993	14.0419	300	WGI	35
14	Comune Mignano Montelungo	41.40541	13.98322	130	WGI	6
15	Stop 11 - Sant'Angelo in Formis	41.12139	14.25682	57	USAF, WGI	15
16	Stop 12 - Triflisco	41.1362	14.25528	34	WGI	5
17	Stop 13 - Pontelatone A	41.18584	14.25546	83	WGI	1

18	Stop 13 - Pontelatone B	41.1854	14.25557	81	WGI	5
19	Stop 14 - Pontelatone	41.18474	14.2553	78	USAF, WGI	5
20	Stop 15 - Pontelatone SP189	41.1906	14.25493	98	WGI	7
21	Stop 16 - Ruviano	41.20994	14.4079	78	WGI	2
22	Stop 17 - Ruviano	41.20936	14.40745	70	WGI	21
23	Stop 18 - San Salvatore Telesino	41.23581	14.47714	104	WGI	2
24	Stop 19 - Puglianello	41.22433	14.4464	62	WGI	3
25	Telese terme	41.22982	14.53457	116	WGI	2
26	Ruviano 1	41.21043	14.41082	57	WGI	5
27	Ruviano Fosso	41.21167	14.41127	63	WGI	8
28	Ruviano 2	41.21055	14.41012	64	WGI	3
29	Stop 20 - San Lorenzello	41.26985	14.53162	190	USAF, WGI	19
30	Stop 21 - San Lorenzello	41.2692	14.53801	214	WGI	9
31	Stop 22 - Amorosi	41.20903	14.45779	60	WGI	2
32	Stop 23 - Casagiove	41.08671	14.30732	67	WGI	7
33	San Lorenzello	41.26818	14.53105	196	WGI	15
34	San Lorenzello - Cerreto	41.27637	14.55113	232	WGI	5
35	San Lorenzello Ristorante	41.2685	14.52962	191	WGI	10
36	Stop 24 - Casagiove	41.08662	14.30278	65	WGI	14
37	Stop 25 - Gradillo	41.12394	14.33669	166	WGI	24
38	Casagiove SS700	41.08747	14.30406	74	WGI	6
39	Gradillo	41.12054	14.33908	193	WGI	2
40	Ruviano 3	41.20775	14.40391	75	WGI	3
41	Ruviano 4	41.20849	14.40651	70	WGI	13
42	Ruviano 5	41.21053	14.41048	57	WGI	11
43	Ruviano - Cimitero	41.21192	14.42011	60	WGI	1
44	Ruviano 6	41.21258	14.42225	60	WGI	3
45	Stop 26 - Maddaloni	41.04716	14.37956	62	LYT	1

46	Cava abbandonata	41.06373	14.34691	56	LYT	5
47	Stop 27 - Caserta	41.06161	14.3455	53	LYT	4
48	Stop 28 - Sant'Anna	41.09116	14.44714	62	LYT	15
49	SP121	41.09902	14.46894	84	LYT	20
50	Stop 29 - Capellino	41.09769	14.48696	112	LYT	53
51	Ponte Sant'Agata dei Goti	41.08902	14.50297	148	WGI	40
52	Stop 30 - Durazzano	41.06417	14.45702	264	WGI	3
53	Sant'Agata dei Goti top	41.10065	14.50719	142	WGI	0
54	Stop 31 - San Pietro	41.09956	14.50764	126	WGI	43
55	Stop 32 - Castrone	41.09163	14.51141	147	LYT	3
56	Stop 33 - Sant'Agata dei Goti	41.09217	14.50656	107	USAF, GL, WGI	35
57	Stop 34 - Sant'Agata dei Goti	41.09167	14.50894	123	WGI, LYT	35
58	SP121 bis	41.10215	14.46956	84	LYT	2
59	Stop 35 - Tocco Caudio	41.12213	14.62599	485	LYT	1
60	Stop 36 - Tufara	41.05936	14.71026	198	PPF, WGI	20
61	Stop 37 - Altavilla Irpina B	41.00774	14.76531	260	LYT	20
62	Stop 37 - Altavilla Irpina A	41.00714	14.76552	244	PPF, GL, USAF, WGI, LYT	5
63	Lungofiume - Altavilla Irpina	41.00604	14.76601	222	WGI, LYT	14
64	Stop 38 - Monteforte Irpino	40.91418	14.67142	444	LYT	14
65	Stop 39 - Verdolino	40.85522	14.20769	153	PP, BM	50
66	Stop 40 - Monte di Procida	40.791	14.04602	0	PP, BM	3
67	Stop 41 - Mondragone	41.12515	13.91096	30	WGI	80
68	SS430 A	41.31125	13.89634	19	WGI	12
69	SS430 B	41.30749	13.89466	18	WGI	12
70	Stop 42 - Mortola	41.34702	13.88266	23	WGI	10

71	Stop 43 - Mortola 2	41.34902	13.88048	31	WGI	3
72	Stop 44 - Punta Marmolite	40.89635	14.13634	64	BM	7
73	Stop 45 - Acqua Fidia	40.92923	14.70025	958	PPF, GL, USAF, WGI	3
74	Piano Acqua Fidia	40.92281	14.7134	804	WGI	2
75	Cerreto Sannita	41.31006	14.53653	246	WGI	1
76	Stop 46 - Civitella	41.31012	14.5368	258	WGI	1
77	Stop 47 - Procida	40.76473	14.03531	0	BM	7
78	Stop 39 - Verdolino B	40.85571	14.20621	145	PP, LPFU	80
79	Stop 48 - Pianura	40.85935	14.18551	195	PP	10
80	Stop 49 - Vigna S. Martino 1	40.84231	14.24247	76	PPF, USAF, BM	8
81	Stop 50 - Vigna S. Martino 2	40.84301	14.24311	175	BM, UPFU	3
82	Stop 51 - Vigna S. Martino 3	40.84373	14.24292	152	PP	3
83	Stop 52 - Baiano	40.91548	14.66762	400	PPF	
84	Stop 53 - Cuma	40.84895	14.05028	55	BM, LPFU	20
85	Stop 54 - Lago Patria	40.93363	14.05399	37	WGI, BM	5
86	Stop 55 - Le Campole	41.23112	14.24032	583	WGI	1
87	Stop 56 - Liberi	41.22711	14.30978	421	WGI	1
88	Stop 57 - Statigliano	41.27991	14.24541	275	WGI	1
89	Stop 58 - Sant'Anna	40.77986	14.65101	124	WGI	10
90	Stop 59 - Paterno Sant'Arcangelo	40.67639	14.64385	167	WGI	5
91	Stop 60 - Polvica	40.69385	14.63513	278	WGI	4
92	Stop 61 - Monticchio	40.59983	14.35433	312	PPF, WGI	18
93	Stop 62 - Piano di Sorrento	40.6369	14.40127	18	WGI, LYT	25
94	Stop 63 - Fosso di Prepezzano	40.69748	14.88704	128	WGI	3
95	Stop 64 - Cologna	40.72163	14.7763	154	WGI	1
96	Stop 65 - Serino Cimitero	40.86696	14.85831	365	PPF, WGI	1

97	Stop 66 - Serino Ferrovia	40.85697	14.85926	390	WGI	2

Table 2. *Data on outcrop locations: ID, site name, latitude, longitude, elevation, units and observed thickness for each outcrop. Abbreviations of the units: PPF Plinian Pumice Fallout, USAF Unconsolidated Stratified Ash Flow, WGI Welded Gray Ignimbrite, LYT Lithified Yellow Tuff, PP Piperno Unit, BM Breccia Museo, LPFU Lower Pumice Flow Unit, UPFU Upper Pumice Flow unit.*

3. Proximal data

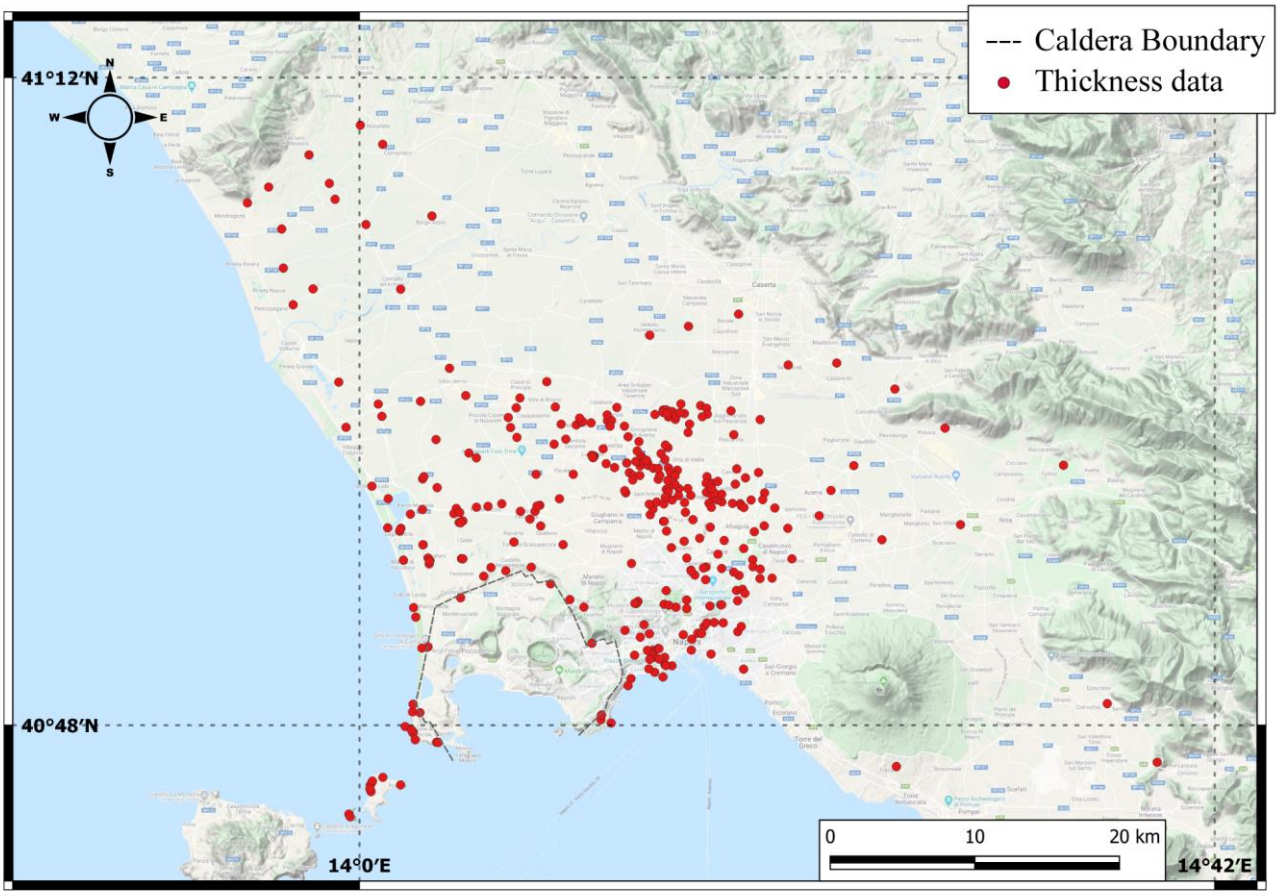

Figure 2. *Proximal thickness data used from literature (Ortolani and Aprile, 1985; Scandone et al., 1991; Bellucci, 1994; Rolandi et al., 2003; Torrente et al., 2010; ISPRA, 2011), consist of boreholes, outcrops and data from geological sections. The isopachs were traced considering also partial proximal isopach maps presented in these works.*

The enveloped area

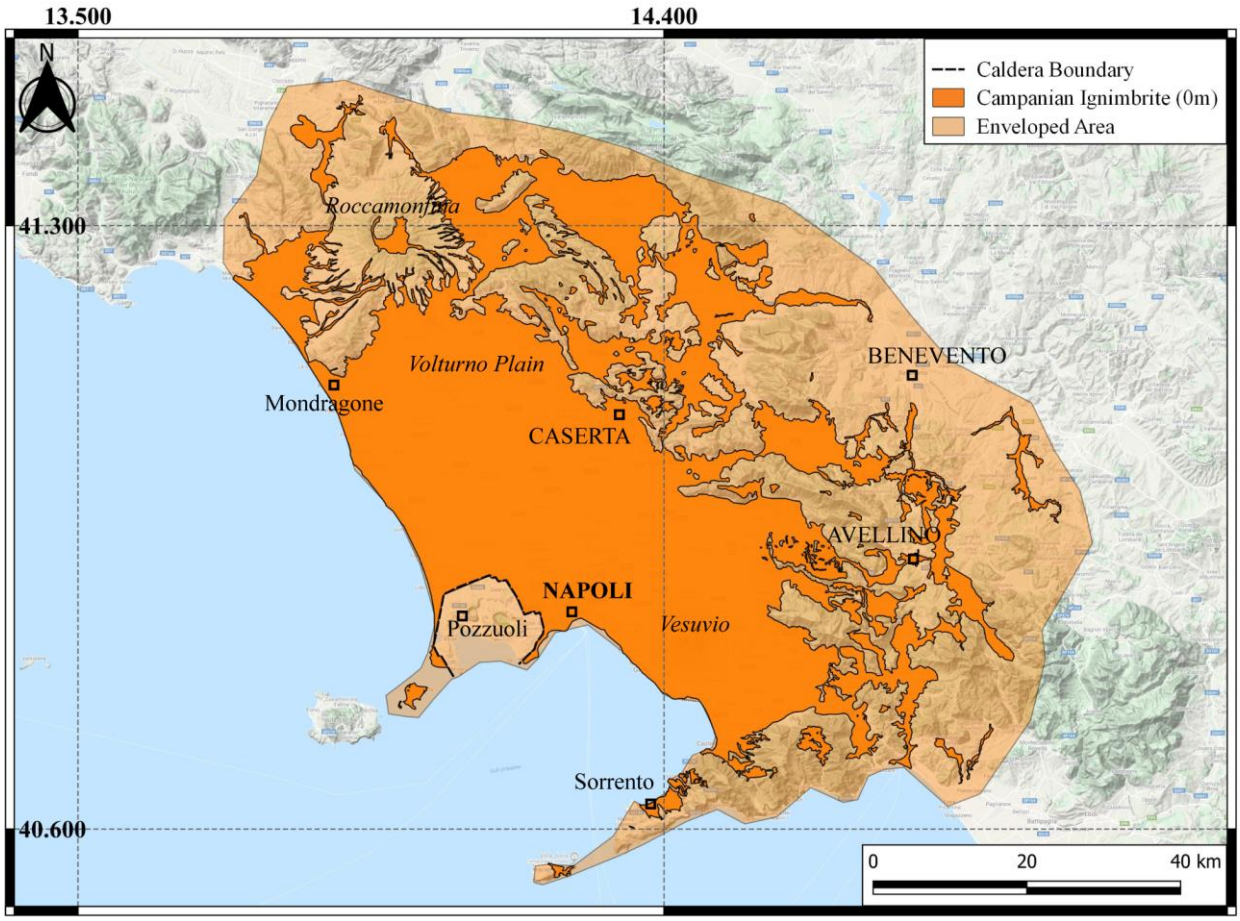

Figure 3. *Reconstruction of the areal extent of the CI PDC deposits, enclosed within the 0-m isopach is shown in dark orange. The total area covered by the preserved deposits of CI is 3,216 km^2, the envelopment with a shape is equal to 6,095 km^2, which is shown in light orange. The isolated areas from the source are due to the erosion.*

4. Density data

Density data used for the DRE volume, are reported in Table 3.

Sample	Unit	ρ bulk (g/cm^3)	Standard deviation (g/cm^3)	Total porosity (%)
AS01	WGI	1.003	0.009	62
AS07	WGI	0.942	0.004	64
AS09	WGI	0.938	0.005	64
AS10	WGI	1.000	0.007	62
AS13	WGI	0.764	0.051	71
AS14	WGI	0.918	0.014	65
AS16	WGI	1.194	0.004	55

AS21	WGI	0.842	0.007	68
AS24	USAF-WGI	0.835	0.004	68
AS25	WGI	0.830	0.003	68
AS26	WGI	0.984	0.003	62
AS30	USAF-WGI	0.799	0.005	69
AS31	WGI	0.888	0.002	66
AS32	WGI	1.000	0.011	62
AS38	LYT	0.830	0.014	68
AS49	WGI	1.064	0.005	59
AS50	WGI	1.088	0.002	58
AS52	LYT	1.151	0.019	56
AS53	WGI	0.925	0.013	65
AS54	WGI	0.987	0.003	62
AS61	LYT	1.060	0.010	60
AS63	PIPERNO	1.283	0.001	49
AS69	PIPERNO	1.275	0.008	51
AS70	PIPERNO	1.302	0.002	49
AS73	WGI	0.816	0.003	69
AS75	WGI	0.959	0.005	63
ES03	WGI	1.008	0.014	62
ES04	WGI	0.843	0.057	68
ES05	WGI	1.050	0.010	60
ES08	WGI	1.155	0.011	56
ES10	WGI	1.330	0.003	49
ES11	LYT	0.885	0.021	66
ES12	WGI	1.047	0.003	60
ES14	WGI	1.063	0.004	60
ES17	WGI	0.999	0.014	62
ES18	WGI	1.080	0.012	59
ES19	WGI	1.002	0.023	62
ES20	WGI	0.745	0.015	72
ES21	WGI	1.074	0.019	59
ES22	WGI	1.153	0.006	56

Table 3. *Values of bulk density (g/cm3), and total porosity (the sum of open and closed porosity) for the analyzed samples. The method is explained in section 4.2. The standard deviation of density is given by the instrument. Samples were taken from all the Campanian Ignimbrite areal distribution and from different units (USAF; Unconsolidated Stratified Ash Flow; WGI: Welded Gray Ignimbrite; LYT: Lithified Yellow Tuff; Piperno).*

5. The volume uncertainties

The uncertainties were determined by two different methods, one for the proximal area and one for the distal. In the first case, the proximal isopach map was traced fitting thickness data. In order to avoid subjective interpretation, a second isopach map was delineated tracing isopachs differently, but always consistent with data. A new volume was calculated from this second convincing proximal isopach map. The percentage difference with the first map was estimated (3.06%) corresponding to a volume of 1.7 km^3.

The main error in estimating the paleo-valley topography is the extrapolation of the base elevation of the valley itself. For this reason, in the area of Altavilla Irpina, the profiles were modified, and the base elevations were adjusted to reach the maximum difference possible in altitude, always constrained by field data. The volume diverged by 25%, corresponding to a volume of 4.9 km^3. The total CI volume uncertainties are 6.6 km^3.

Data related to the location of outcrops and density are also reported in the Repository Data online at https://mfr.osf.io/render?url=https%3A%2F%2Fosf.io%2Fc8nea%2Fdownload.

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