



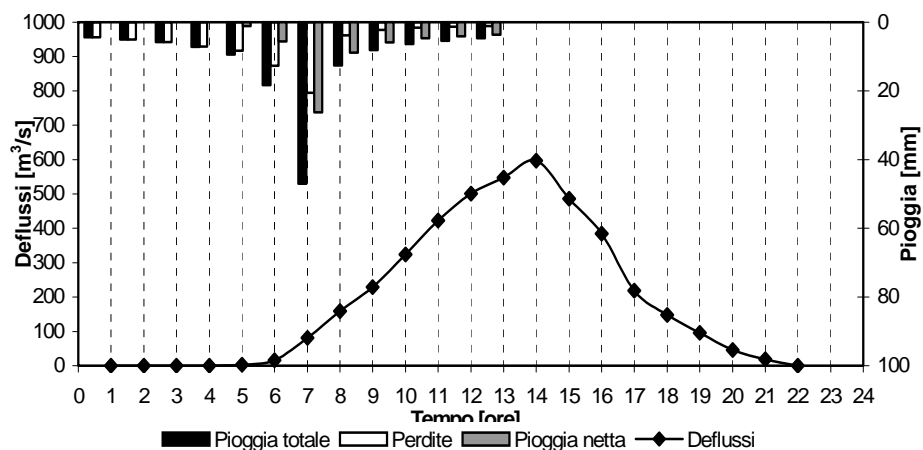
## **Appendice B**

### **IETOGRAMMI E DEFLUSSI DI PIENA**

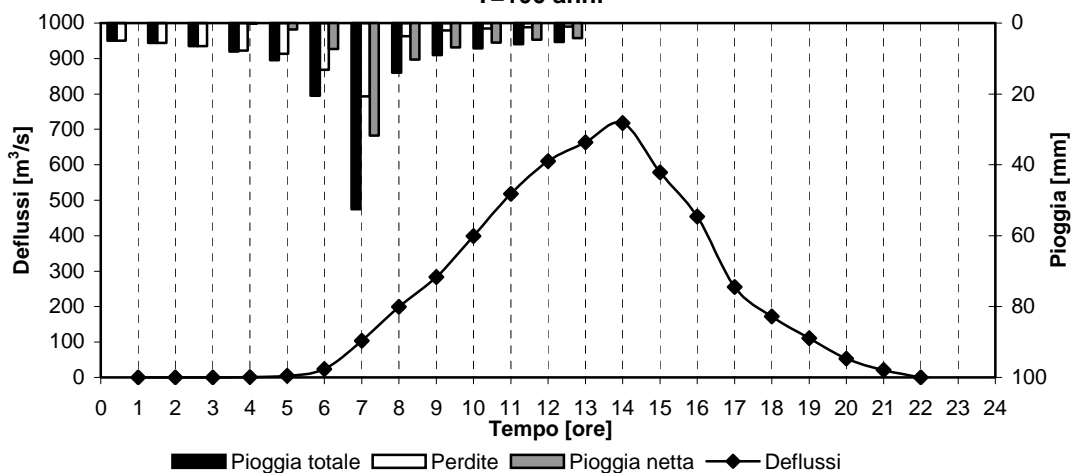


## IETOGRAMMI E DEFLUSSI DI PIENA – F. Tellaro - Sottobacino **R1350W160**

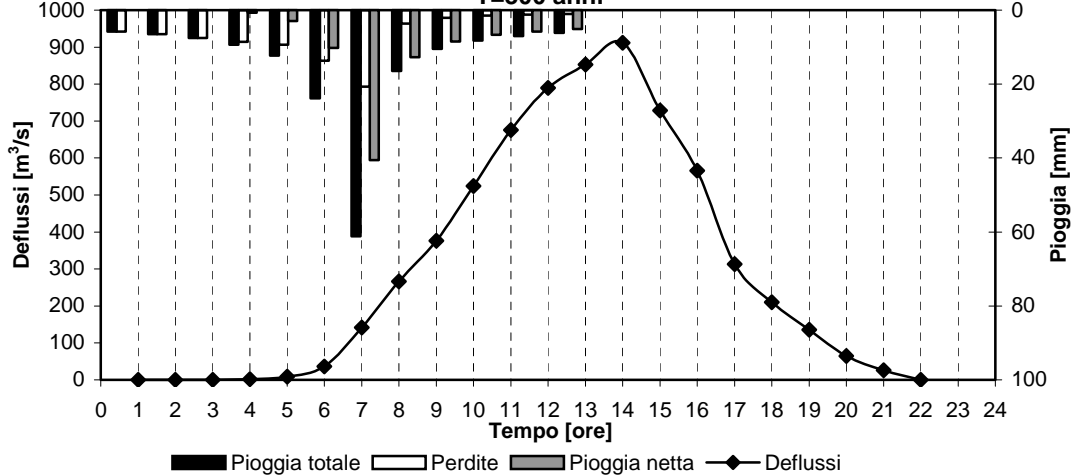
**T=50 anni**



**T=100 anni**



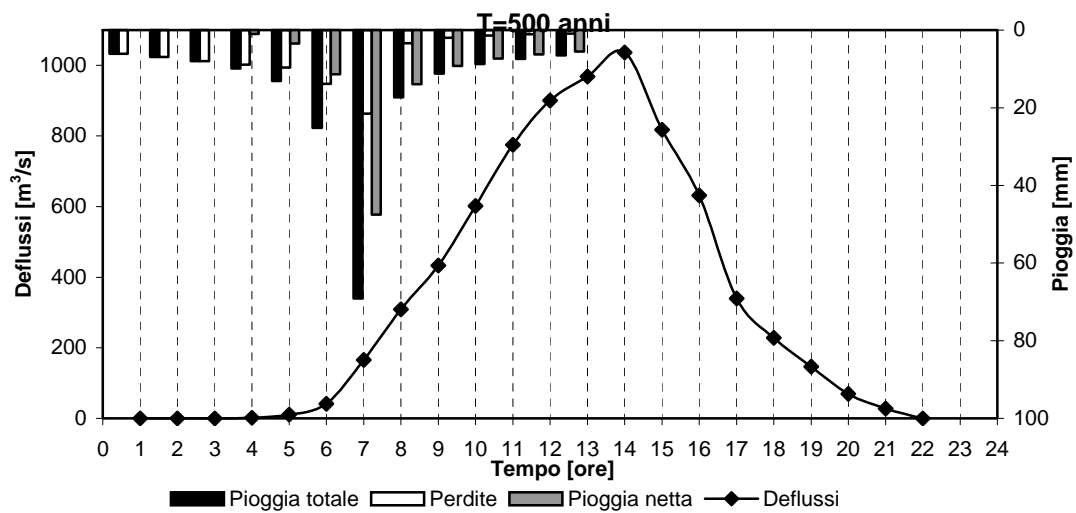
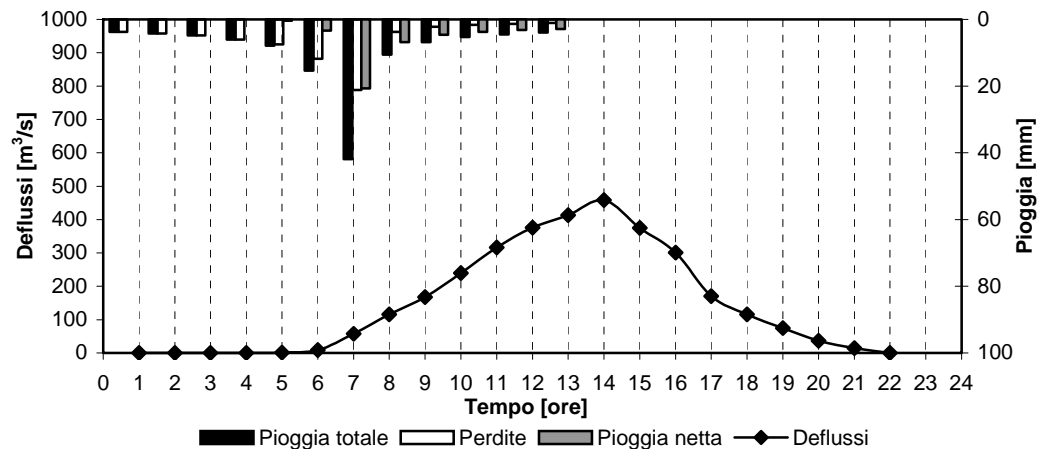
**T=300 anni**





## IETOGRAMMI E DEFLUSSI DI PIENA – F. Tellaro - Sottobacino **R1350W160**

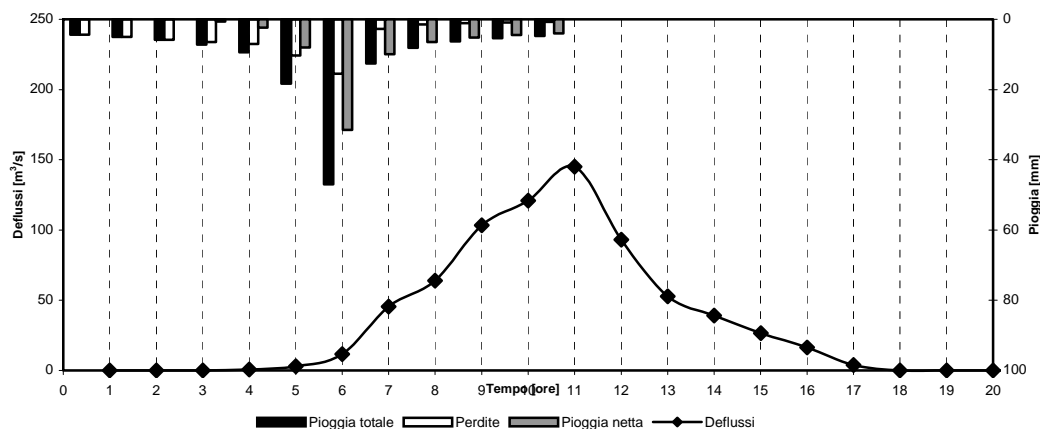
**T=20 anni**



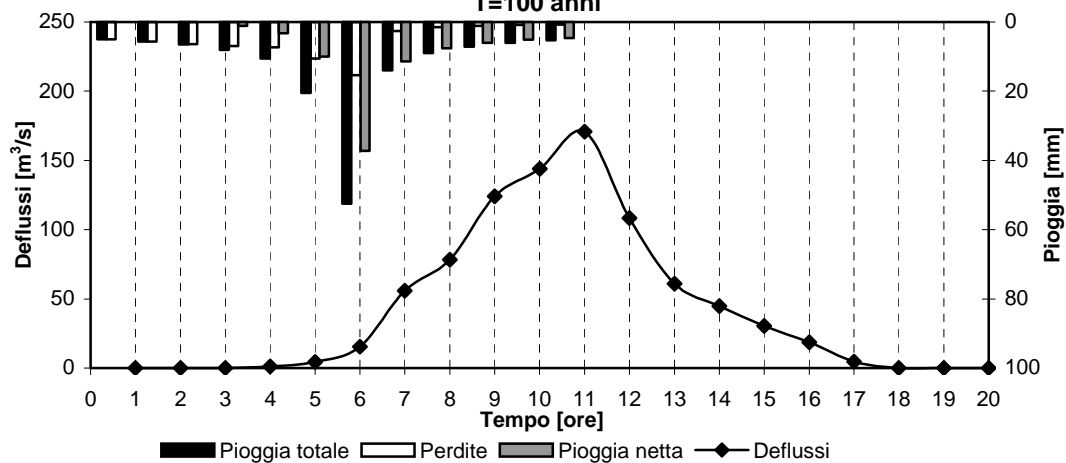


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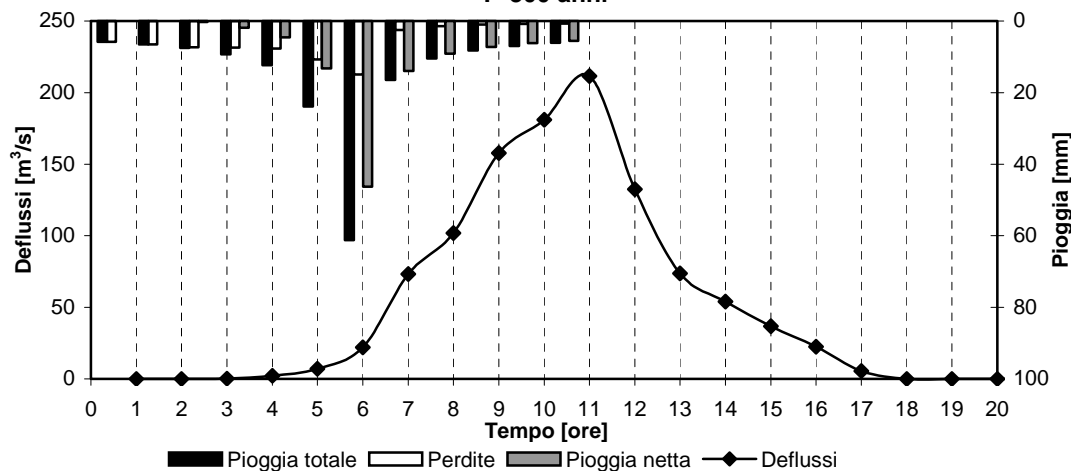
**T=50 anni**



**T=100 anni**



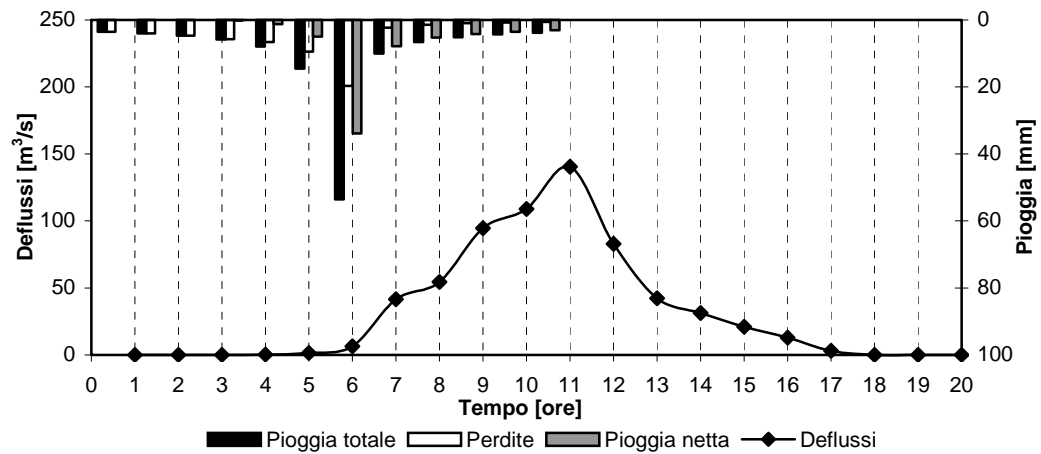
**T=300 anni**



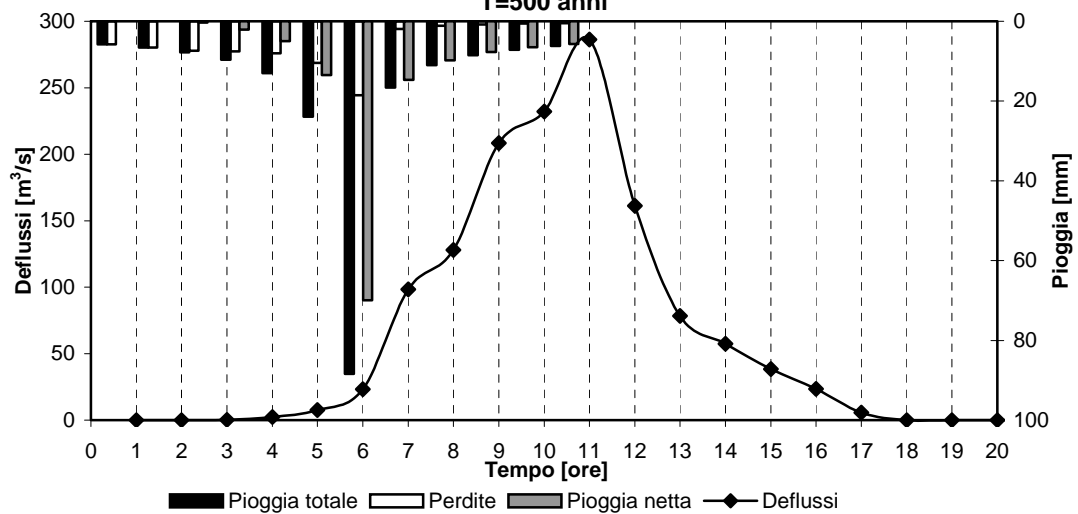


## IETOGRAMMI E DEFLUSSI DI PIENA – F. Tellaro - Sottobacino **R1320W1090**

**T=20 anni**

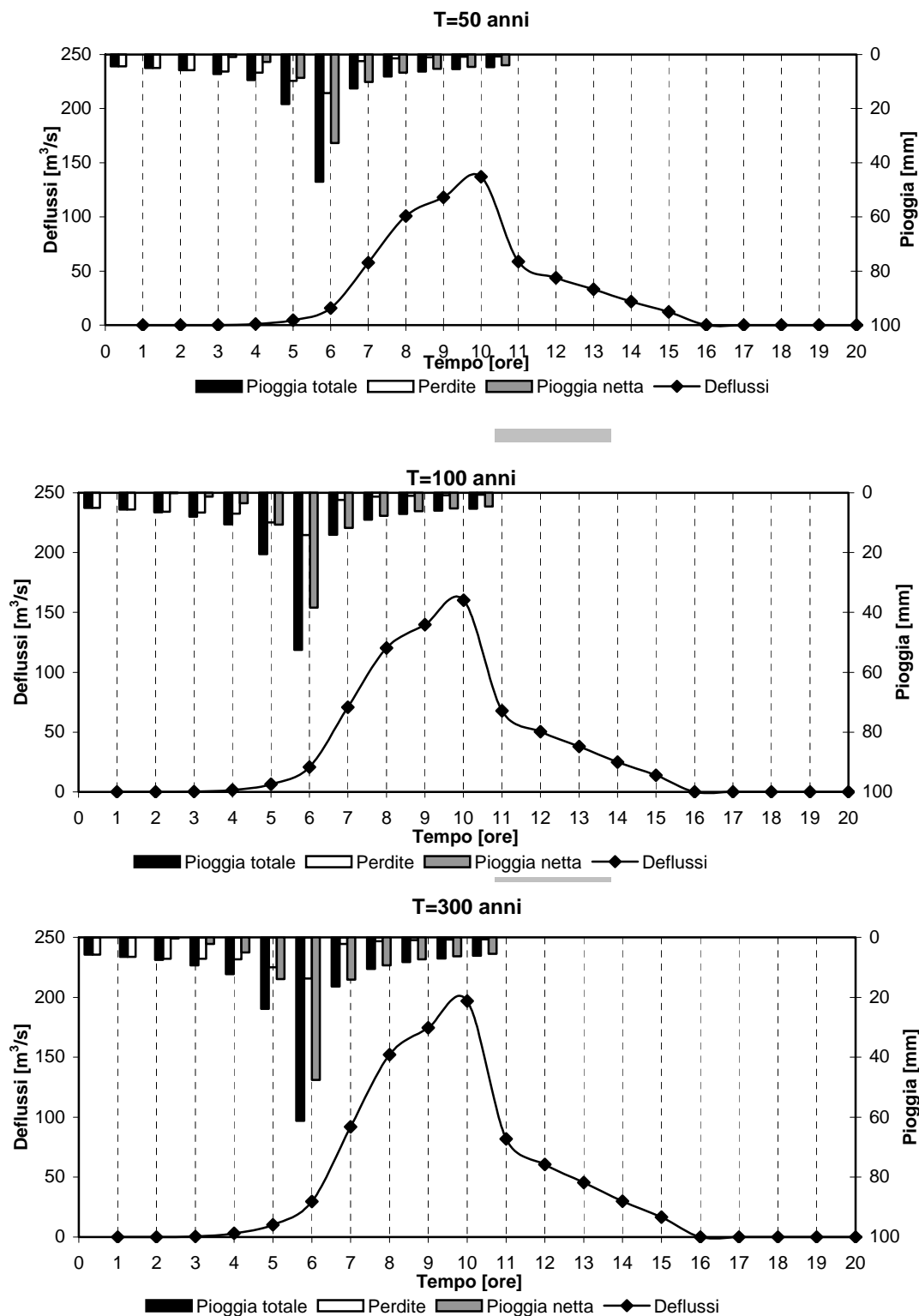


**T=500 anni**





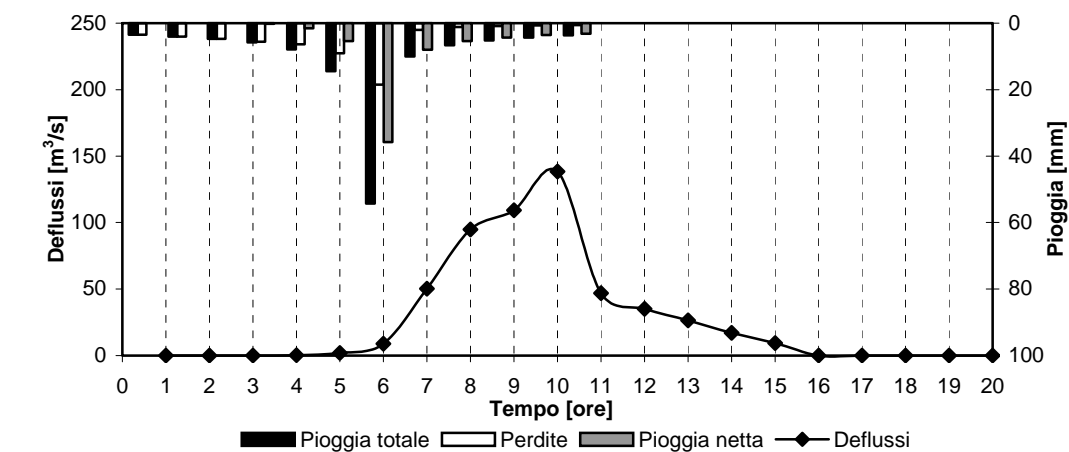
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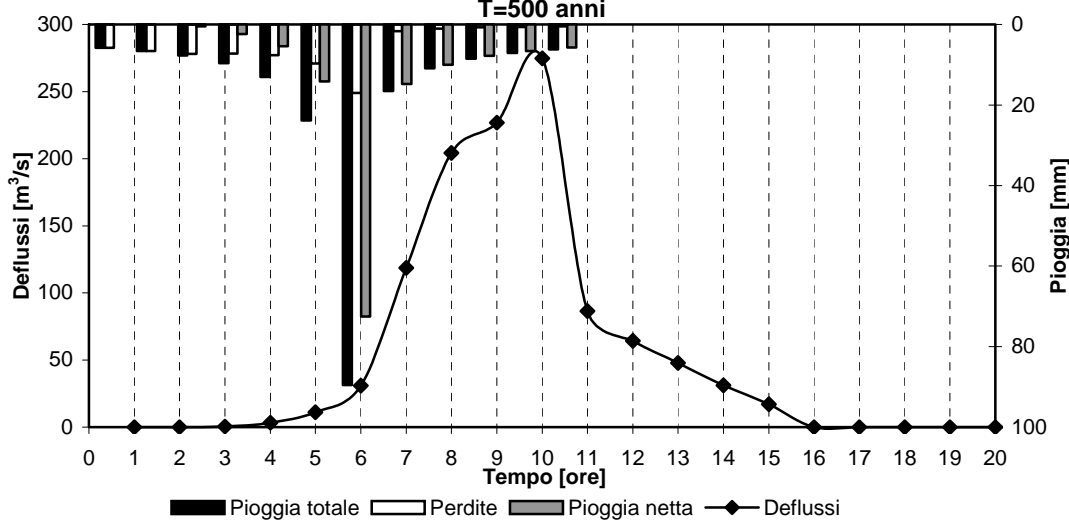


## IETOGRAMMI E DEFLUSSI DI PIENA – F. Tellaro - Sottobacino **R1410W1370**

**T=20 anni**

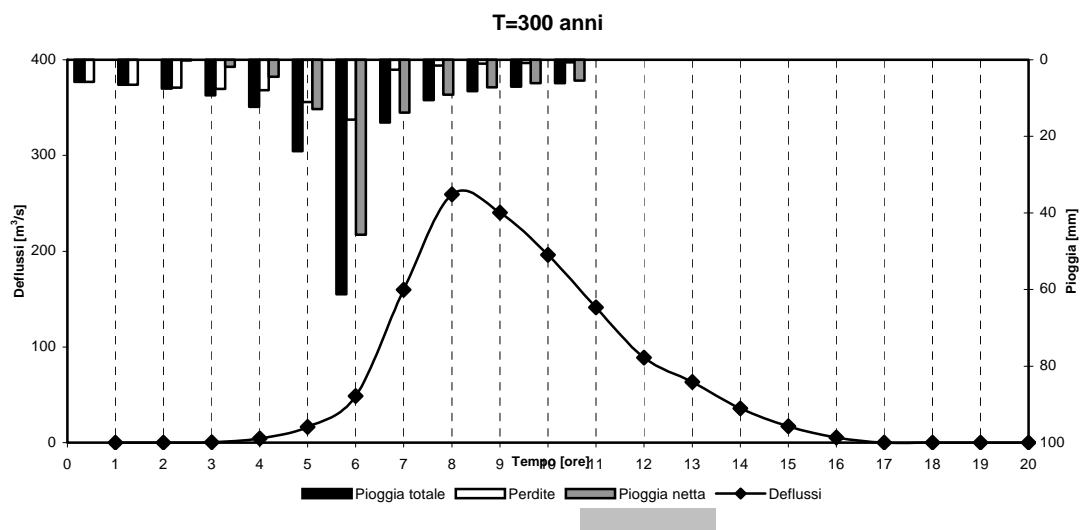
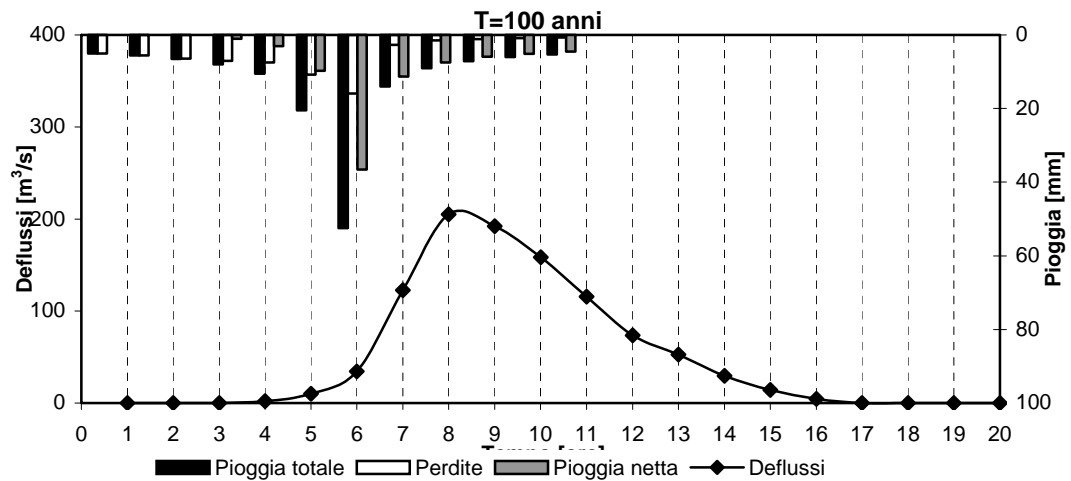
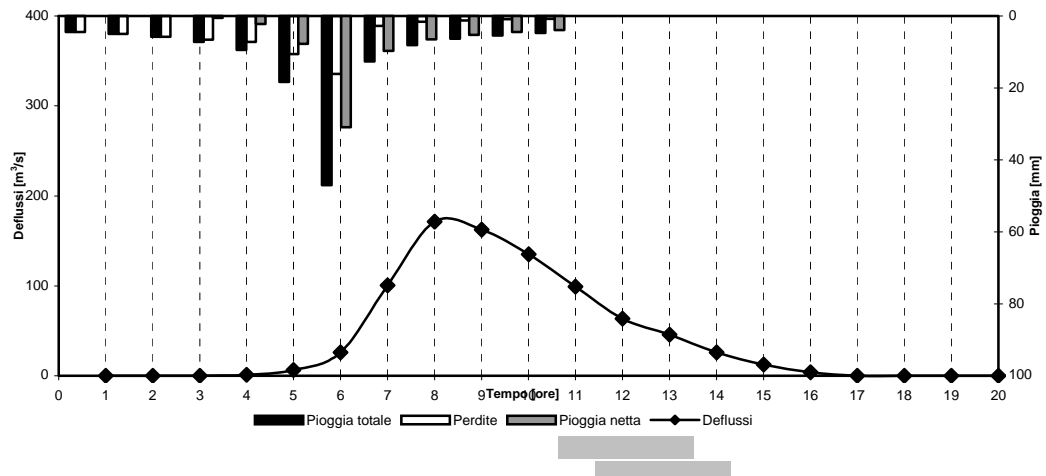


**T=500 anni**





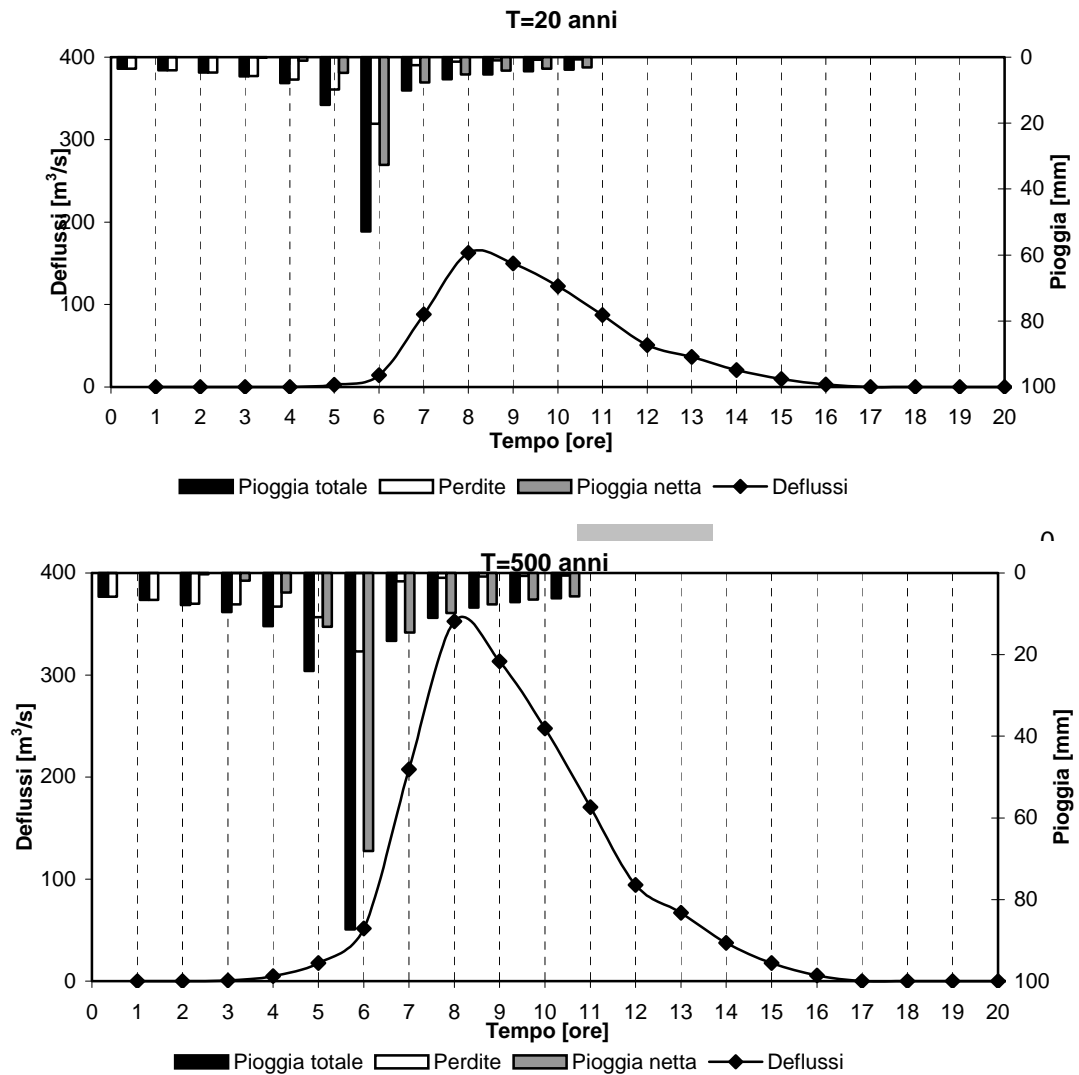
**IETOGRAMMI E DEFLUSSI DI PIENA – F. Tellaro - Sottobacino R1470W1470**  
**T=50 anni**





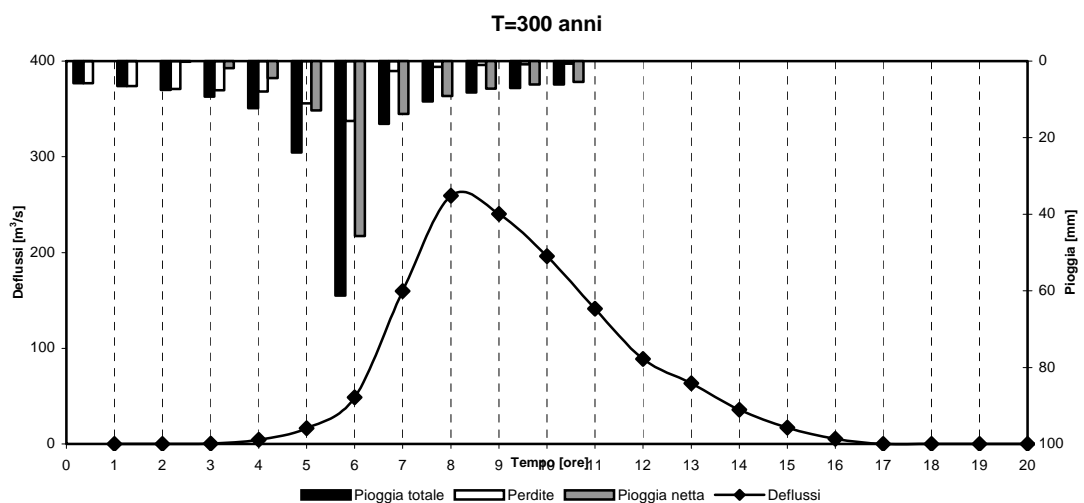
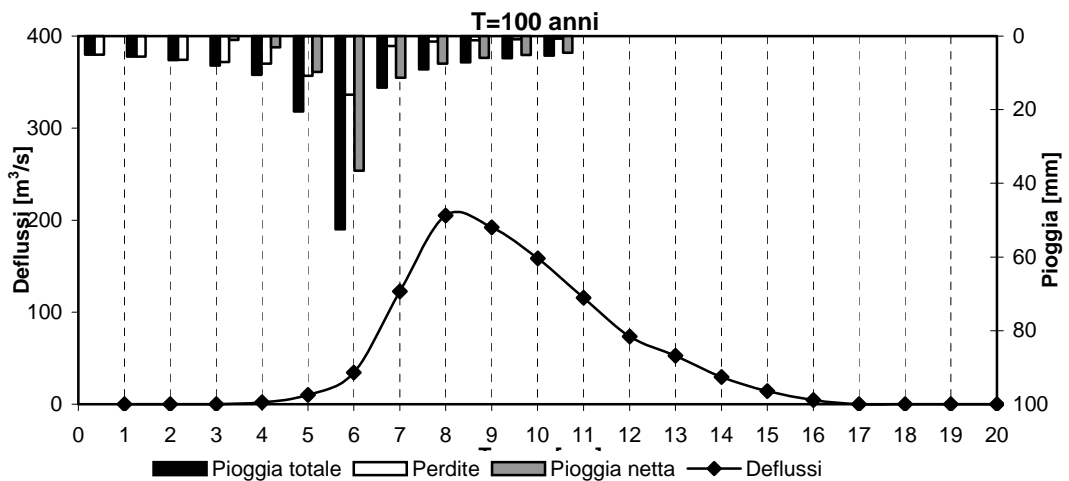
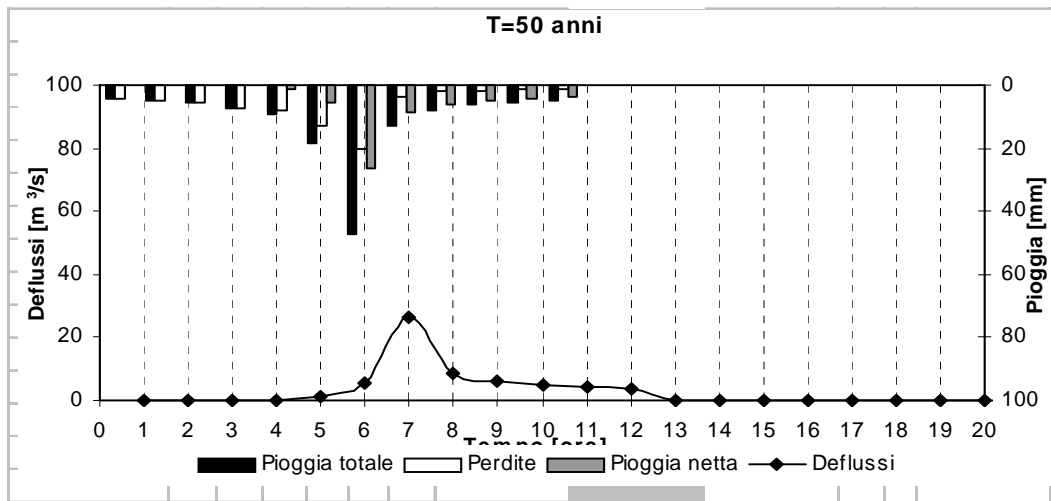


## IETOGRAMMI E DEFLUSSI DI PIENA – F. Tellaro - Sottobacino **R1470W1470**



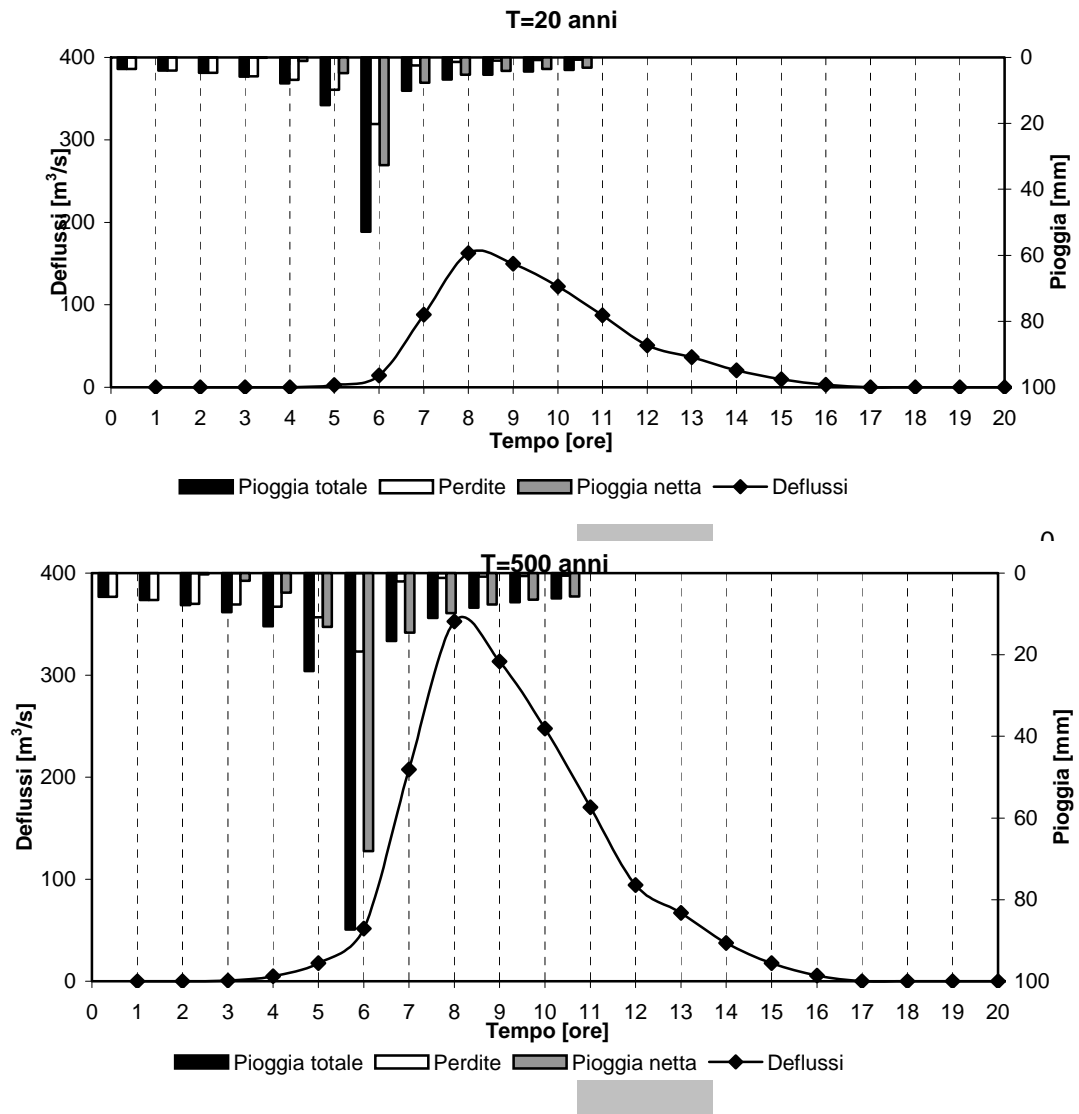


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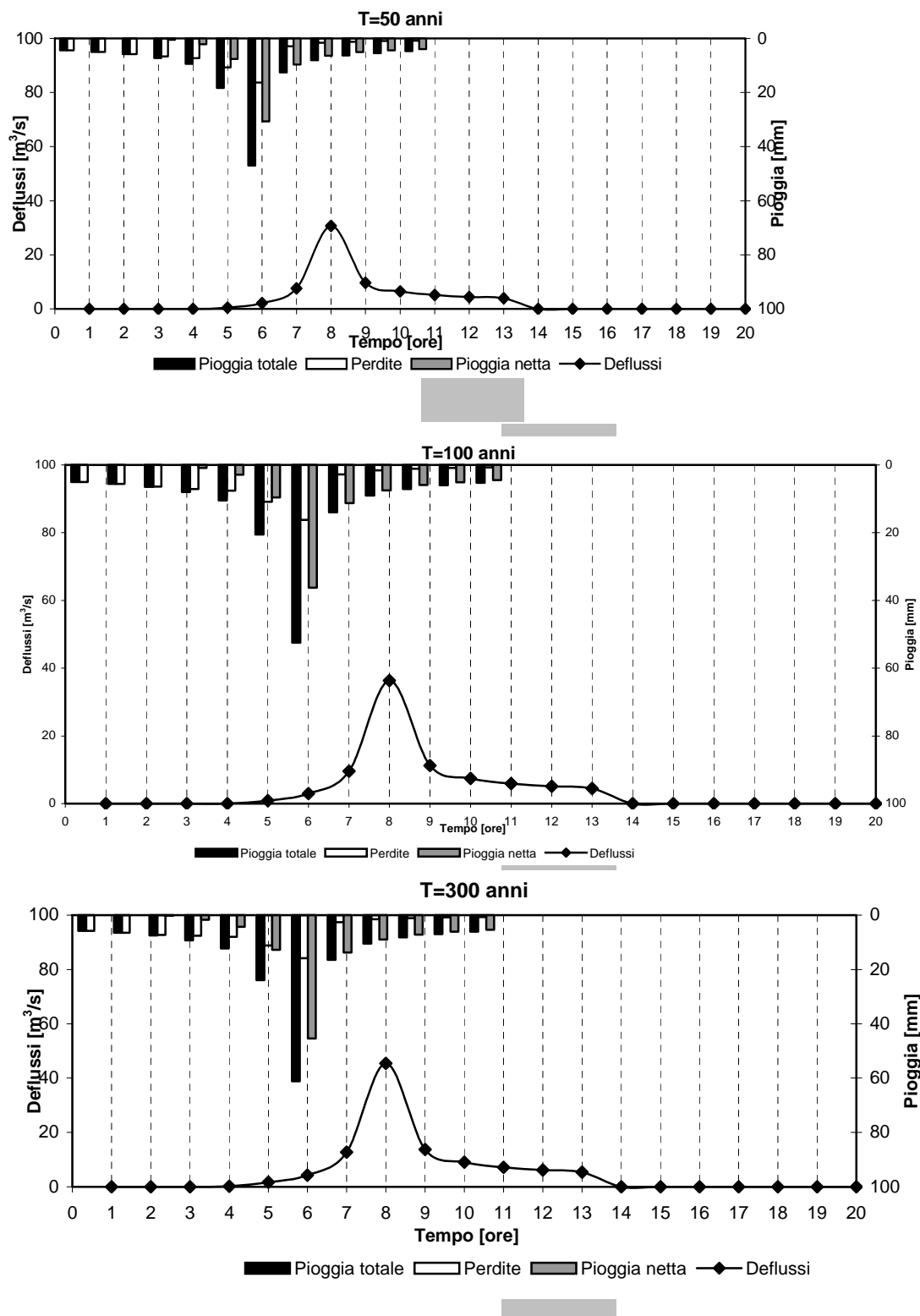


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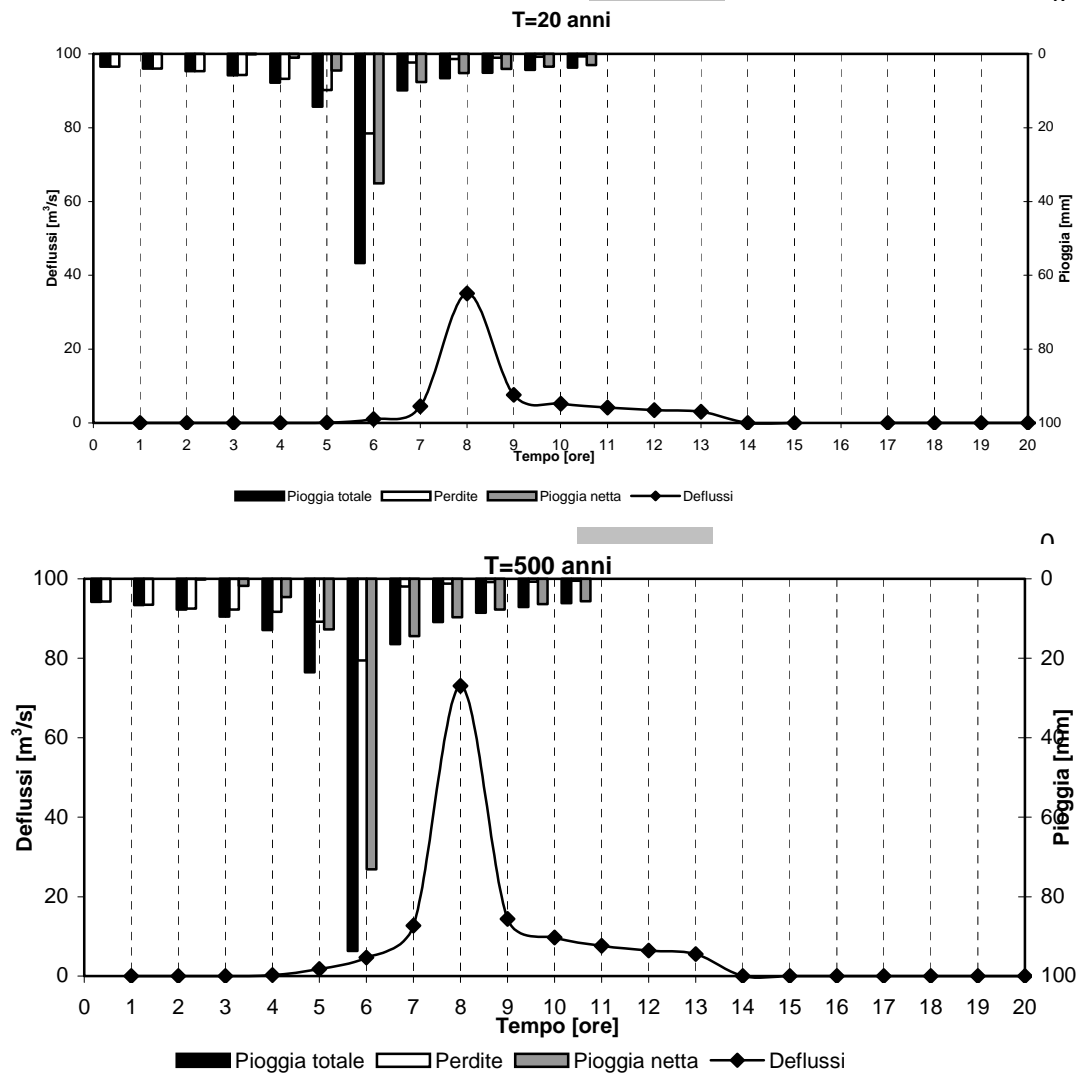


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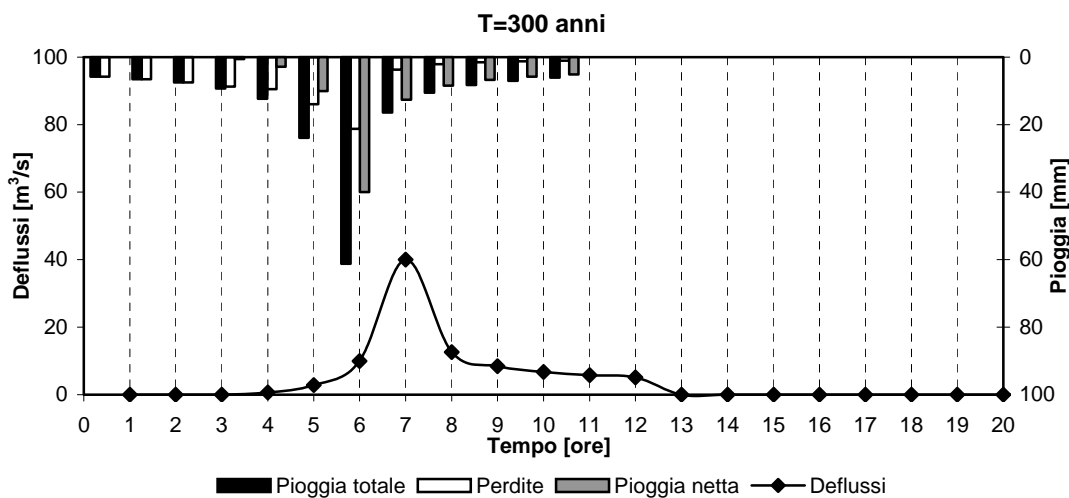
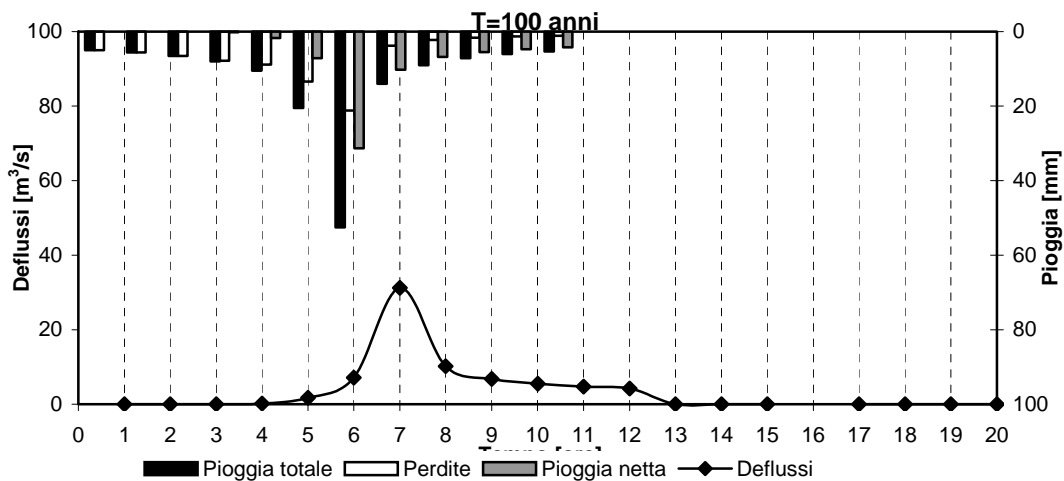
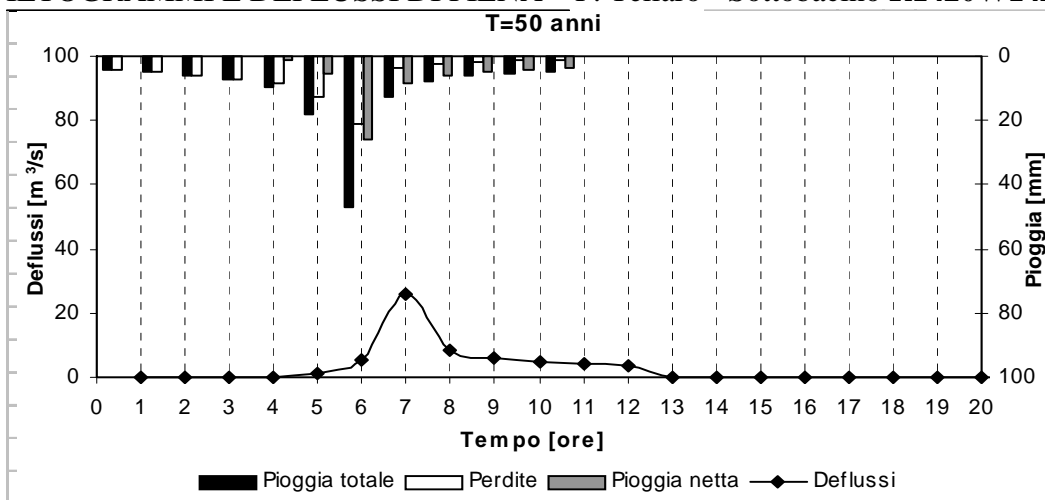


## IETOGRAMMI E DEFLUSSI DI PIENA – F. Tellaro - Sottobacino **R1440W1440**



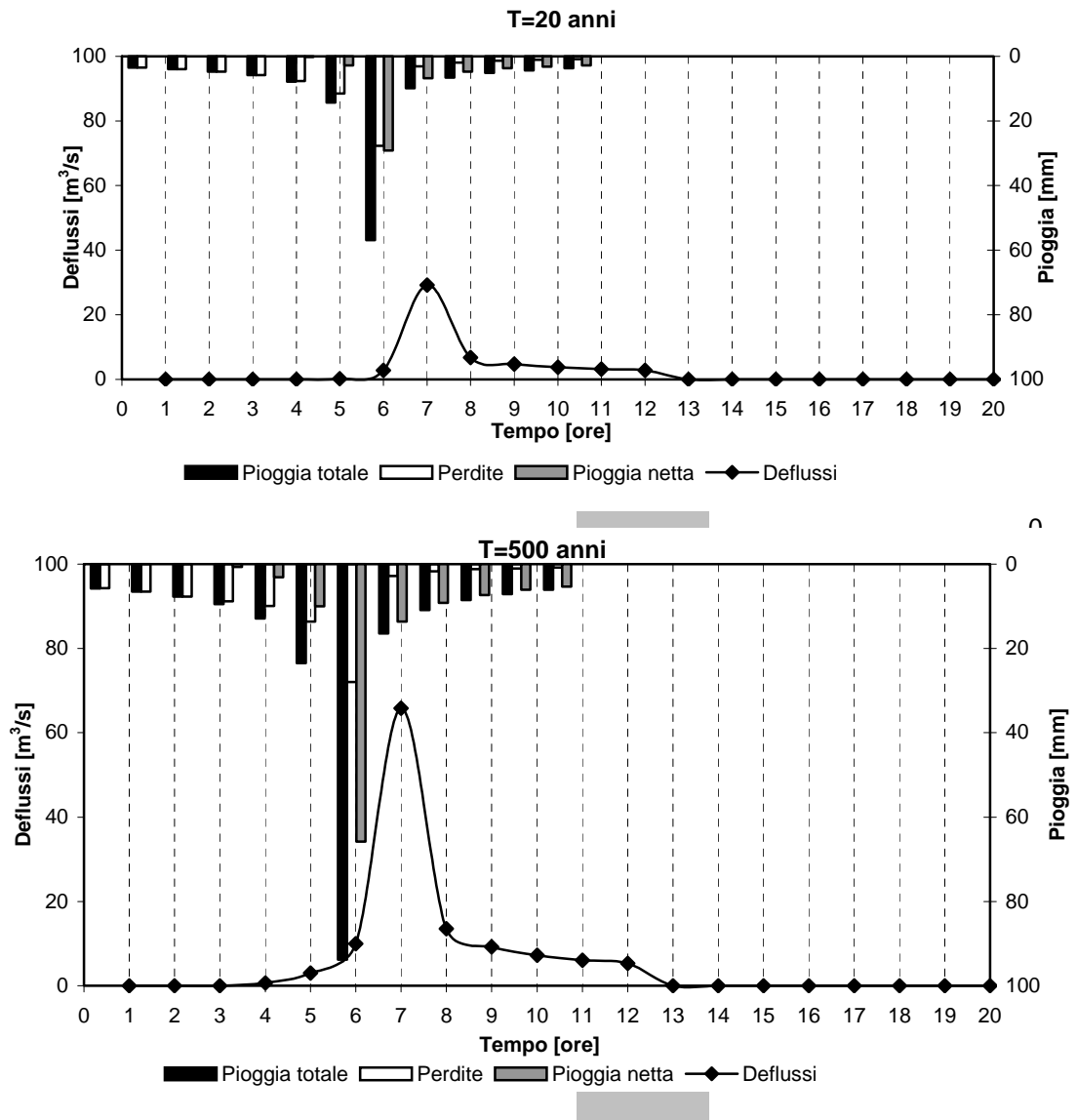


### IETOGRAMMI E DEFLUSSI DI PIENA – F. Tellaro - Sottobacino **R1420W1420**





## IETOGRAMMI E DEFLUSSI DI PIENA – F. Tellaro - Sottobacino **R1420W1420**





## **Appendice C**

### **OPERE PRINCIPALI NEL CORSO D'ACQUA**

- *Corografia generale degli attraversamenti*
- *Schede identificative degli attraversamenti*





## Corografia generale degli attraversamenti





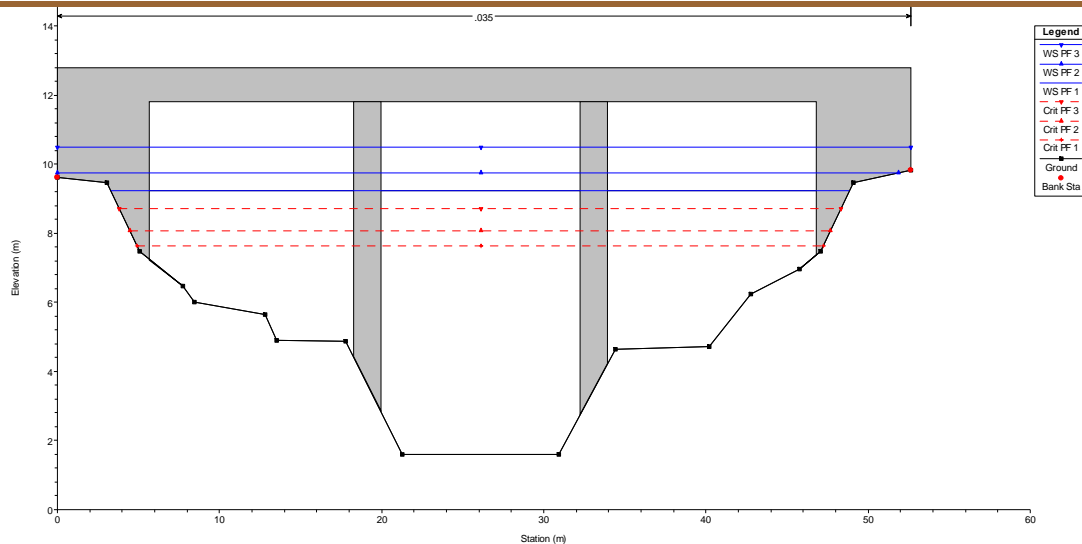
## Scheda identificativa attraversamento sul F. Tellaro (T1)

Foto  
attraversamento  
*ex S.P. 19*,  
vista da valle



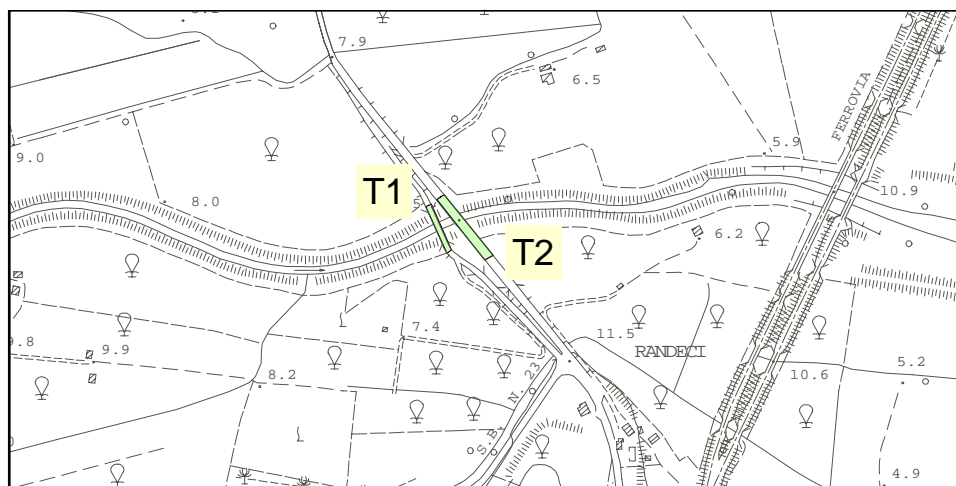
Schema sezione

Coefficiente  
Manning.  
 $0,035 \text{ m}^{-1/3} \text{ s}$



Ubicazione  
cartografica  
1:10.000

*stralcio  
planimetrico  
CTR 649130,  
649140*





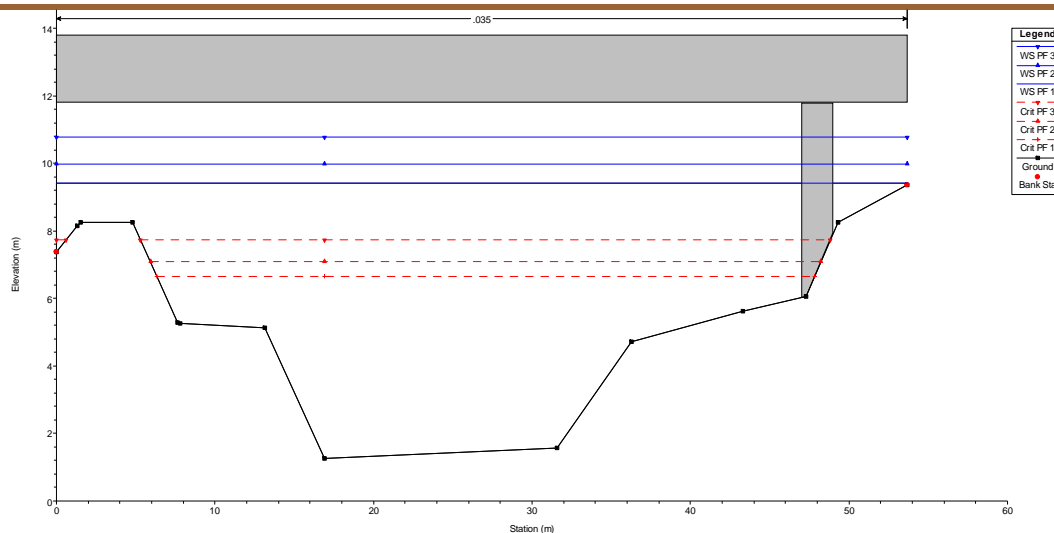
## Scheda identificativa attraversamento sul F. Tellaro (T2)

Foto  
attraversamento  
S.P. 19,  
vista da monte



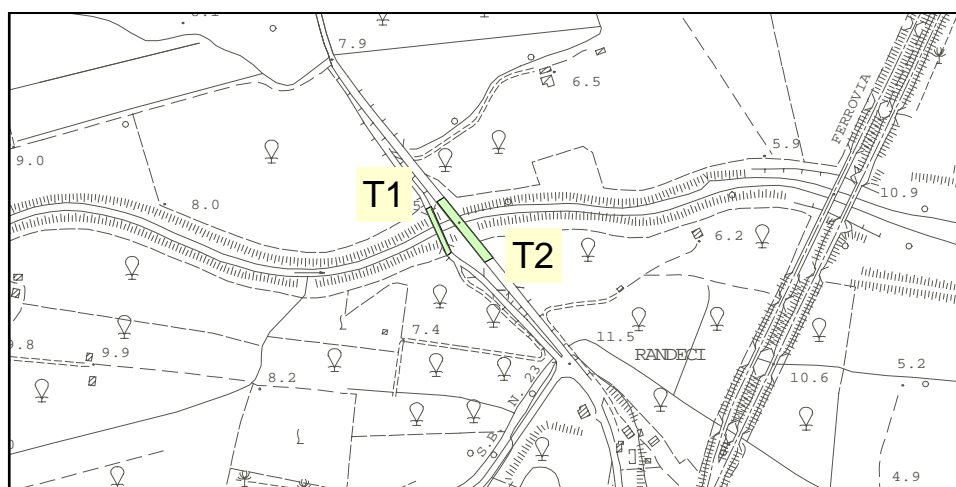
Schema sezione

Coefficiente  
Manning,  
 $0,035 \text{ m}^{-1/3} \text{ s}$



Ubicazione  
cartografica  
1:10.000

stralcio  
planimetrico  
CTR 649130,  
649140





## **Appendice D**

### **RISULTATI DELLE VERIFICHE IDRAULICHE**

- *Valori del coefficiente di Manning*
- *Valori delle caratteristiche idrauliche*
- *Schema planimetrico*
- *Tiranti idrici per tempo di ritorno*
- *Profili idraulici*



*Valori del coefficiente di scabrezza di Manning [ $m^{-1/3} \cdot s$ ] (Chow, 1959)*

		minimo	normale	massimo
<b>A.</b>	<b>CORSI D'ACQUA NATURALI</b>			
	<i>Corsi d'acqua minori (tirante inferiore a 3,5m)</i>			
<b>1.</b>	<b>Corsi d'acqua di pianura</b>			
a.	Puliti, rettilinei, in piena senza scavi localizzati	0.025	0.030	0.033
b.	Puliti, rettilinei, in piena senza scavi localizzati, con sassi e sterpaglia	0.030	0.035	0.040
c.	Puliti, ondulati, con alcune buche e banchi	0.033	0.040	0.045
d.	Puliti, ondulati, con alcune buche e banchi, con cespugli e pietre	0.035	0.045	0.050
e.	Puliti, ondulati, con alcune buche e banchi, in magra	0.040	0.048	0.055
f.	Puliti, ondulati, con alcune buche e banchi, con cespugli e più pietrame	0.045	0.050	0.060
g.	Tratti lenti, sterpaglia e buche profonde	0.050	0.070	0.080
h.	Tratti molto erbosi, buche profonde e grossi arbusti e cespugli	0.070	0.100	0.150
<b>2.</b>	<b>Aree golenali</b>			
a.	A pascolo senza vegetazione arbustiva	0.025	0.030	0.050
b.	Aree coltivate	0.020	0.035	0.050
c.	Con vegetazione arbustiva spontanea	0.035	0.070	0.160
d.	Con vegetazione arborea coltivata	0.030	0.060	0.120
<b>3.</b>	<b>Corsi d'acqua montani, senza vegetazione in alveo, sponde ripide alberi e cespugli lungo le sponde sommergibili durante le piene</b>			
a.	Fondo: ghiaia, ciottoli e massi sparsi	0.030	0.040	0.050
b.	Fondo: ciottoli e massi grossi	0.040	0.050	0.070
<b>B.</b>	<b>CANALI ARTIFICIALI</b>			
<b>1.</b>	<b>Canali in terra lisciata ed uniforme</b>			
a.	Puliti, scavata di recente	0.016	0.018	0.020
b.	Puliti, dopo prolungata esposizione	0.018	0.022	0.025
c.	Ghiaia, sezione uniforme, pulita	0.022	0.025	0.030
d.	Erba corta, pochi cespugli	0.022	0.027	0.033
<b>2.</b>	<b>Canali in terra con ondulazioni o irregolari</b>			
a.	Senza vegetazione	0.023	0.025	0.030
b.	Con erba e pochi cespugli	0.025	0.030	0.033
c.	Cespugli o piante acquatiche in canali profondi	0.030	0.035	0.040
d.	Fondo in terra e sponde in pietrisco	0.028	0.030	0.035
e.	Fondo in pietrame e sponde in cespugli	0.025	0.035	0.040
f.	Fondo in ciottoli e sponde pulite	0.030	0.040	0.050
<b>3.</b>	<b>Canali scavati o dragati</b>			
a.	Senza vegetazione	0.025	0.028	0.033
b.	Cespugli sparsi sulle sponde	0.035	0.050	0.060
<b>4.</b>	<b>Canali in roccia</b>			
a.	Lisci ed uniformi	0.025	0.035	0.040
b.	Frastagliati ed irregolari	0.035	0.040	0.050
<b>5.</b>	<b>Canali senza manutenzione, sterpaglia e cespugli</b>			
a.	Sterpaglia densa, alta quanto il tirante idrico	0.040	0.050	0.080
b.	Fondo pulito cespugli sulle sponde	0.045	0.070	0.110
c.	Fondo pulito, cespugli sulle sponde, in piena	0.050	0.080	0.120
d.	Cespugli densi ed acque profonde	0.080	0.100	0.140



*Valori delle caratteristiche idrauliche per il fiume Tellaro nel tratto  
tra la confluenza con il T. Saia Randeci e la ferrovia*

Nome sez. (dist. dalla foce in m)	Quota fondo alveo (m)	Coeff. di Manning (m <sup>-1/3</sup> s)	Tempo di ritorno (anni)	Portata (m <sup>3</sup> /s)	Quota pelo libero (m s.l.m.)	Tirante idrico (m)	Pendenza l.c.t. (m/m)	Velocità media alveo (m/s)	Sezione idrica (m <sup>2</sup> )
1632	4.10	0.035	50	717.44	12.77	8.67	0.003534	4.13	173.78
			100	862.00	13.53	9.43	0.003557	4.15	207.77
			300	1098.50	14.29	10.19	0.003505	4.50	244.02
1615	4.00	0.035	50	717.44	12.73	8.73	0.003408	4.07	176.07
			100	862.00	13.49	9.49	0.003416	4.10	210.49
			300	1098.50	14.25	10.25	0.003385	4.45	246.80
1594	3.90	0.035	50	717.44	12.66	8.76	0.003328	4.04	177.58
			100	862.00	13.42	9.52	0.003320	4.06	212.18
			300	1098.50	14.18	10.28	0.003308	4.42	248.37
1568	3.80	0.035	50	717.44	12.59	8.79	0.003232	3.99	179.74
			100	862.00	13.36	9.56	0.003231	4.01	215.10
			300	1098.50	14.12	10.32	0.003207	4.36	252.06
1546	3.80	0.035	50	717.44	12.44	8.64	0.003594	4.15	172.72
			100	862.00	13.20	9.40	0.003658	4.17	206.71
			300	1098.50	13.97	10.17	0.003558	4.51	243.72
1521	3.70	0.035	50	717.44	12.38	8.68	0.003431	4.07	176.25
			100	862.00	13.14	9.44	0.003473	4.09	210.92
			300	1098.50	13.91	10.21	0.003378	4.42	248.69
1495	3.60	0.035	50	717.44	12.27	8.67	0.003525	4.12	174.03
			100	862.00	13.02	9.42	0.003571	4.15	207.80
			300	1098.50	13.79	10.19	0.003495	4.49	244.58
1467	3.50	0.035	50	717.44	12.17	8.67	0.003502	4.11	174.56
			100	862.00	12.92	9.42	0.003560	4.14	208.45
			300	1098.50	13.70	10.20	0.003465	4.47	245.76
1444	3.40	0.035	50	717.44	12.10	8.70	0.003462	4.10	175.17
			100	862.00	12.85	9.45	0.003530	4.12	209.20
			300	1098.50	13.62	10.22	0.003431	4.45	246.76
1419	3.30	0.035	50	717.44	12.00	8.70	0.003504	4.12	174.10
			100	862.00	12.75	9.45	0.003583	4.15	207.81
			300	1098.50	13.52	10.22	0.003481	4.48	245.16
1393	3.20	0.035	50	717.44	11.92	8.72	0.003423	4.08	175.78
			100	862.00	12.67	9.47	0.003496	4.11	209.72
			300	1098.50	13.45	10.25	0.003395	4.44	247.45
1369	3.10	0.035	50	717.44	11.84	8.74	0.003378	4.06	176.63
			100	862.00	12.59	9.49	0.003449	4.09	210.64
			300	1098.50	13.37	10.27	0.003350	4.42	248.53
1344	3.00	0.035	50	717.44	11.76	8.76	0.003329	4.04	177.57
			100	862.00	12.51	9.51	0.003398	4.07	211.65
			300	1098.50	13.29	10.29	0.003302	4.40	249.69
1319	2.90	0.035	50	717.44	11.70	8.80	0.003199	3.97	180.58
			100	862.00	12.44	9.54	0.003209	4.02	214.48
			300	1098.50	13.22	10.32	0.003162	4.36	252.00



Nome sez. (dist. dalla foce in m)	Quota fondo alveo (m)	Coeff. di Manning (m <sup>-1/3</sup> s)	Tempo di ritorno (anni)	Portata (m <sup>3</sup> /s)	Quota pelo libero (m s.l.m.)	Tirante idrico (m)	Pendenza l.c.t. (m/m)	Velocità media alveo (m/s)	Sezione idrica (m <sup>2</sup> )
1294	2.80	0.035	50	717.44	11.60	8.80	0.003265	4.01	178.71
			100	862.00	12.34	9.54	0.003324	4.05	213.01
			300	1098.50	13.14	10.34	0.003226	4.37	251.41
1269	2.70	0.035	50	717.44	11.54	8.84	0.003152	3.96	181.32
			100	862.00	12.28	9.58	0.003199	3.99	216.04
			300	1098.50	13.08	10.38	0.003108	4.31	254.91
1244	2.60	0.035	50	717.44	11.47	8.87	0.003075	3.92	183.05
			100	862.00	12.21	9.61	0.003076	3.97	217.27
			300	1098.50	13.01	10.41	0.003032	4.30	255.30
1219	2.50	0.035	50	717.44	11.40	8.90	0.003014	3.89	184.39
			100	862.00	12.14	9.64	0.003045	3.92	219.64
			300	1098.50	12.95	10.45	0.002971	4.24	258.82
1194	2.50	0.035	50	717.44	11.28	8.78	0.003243	3.99	179.68
			100	862.00	12.02	9.52	0.003313	4.03	213.90
			300	1098.50	12.83	10.33	0.003174	4.33	253.49
1169	2.40	0.035	50	717.44	11.18	8.78	0.003330	4.05	177.32
			100	862.00	11.90	9.50	0.003388	4.11	209.96
			300	1098.50	12.70	10.30	0.003300	4.44	247.62
1139	2.30	0.035	50	717.44	11.08	8.78	0.003293	4.02	178.26
			100	862.00	11.80	9.50	0.003375	4.08	211.29
			300	1098.50	12.61	10.31	0.003255	4.39	249.95
1112	2.20	0.035	50	717.44	11.01	8.81	0.003194	3.97	180.57
			100	862.00	11.73	9.53	0.003290	4.02	214.26
			300	1098.50	12.55	10.35	0.003149	4.32	254.00
1083	2.10	0.035	50	717.44	10.93	8.83	0.003146	3.94	182.16
			100	862.00	11.64	9.54	0.003183	4.00	215.56
			300	1098.50	12.46	10.36	0.003071	4.31	254.98
1056	2.00	0.035	50	717.44	10.83	8.83	0.003178	3.96	181.19
			100	862.00	11.55	9.55	0.003224	4.02	214.28
			300	1098.50	12.37	10.37	0.003107	4.33	253.56
1031	1.90	0.035	50	717.44	10.55	8.65	0.003952	4.37	164.21
			100	862.00	11.24	9.34	0.004218	4.47	192.74
			300	1098.50	12.03	10.13	0.004060	4.81	228.25
1006	1.80	0.035	50	717.44	10.42	8.62	0.004095	4.43	161.92
			100	862.00	11.09	9.29	0.004452	4.56	189.18
			300	1098.50	11.89	10.09	0.004231	4.88	224.93
980	1.70	0.035	50	717.44	10.14	8.44	0.005003	4.75	150.89
			100	862.00	10.76	9.06	0.005670	4.93	174.92
			300	1098.50	11.62	9.92	0.004957	5.15	213.48
955	1.60	0.035	50	717.44	10.25	8.65	0.003516	4.08	175.89
			100	862.00	10.88	9.28	0.003937	4.20	205.18
			300	1098.50	11.78	10.18	0.003411	4.38	250.83
918	1.60	0.035	50	717.44	10.42	8.82	0.001791	3.04	236.02
			100	862.00	11.05	9.45	0.001715	3.20	269.22
			300	1098.50	11.95	10.35	0.001698	3.48	315.99





Nome sez. (dist. dalla foce in m)	Quota fondo alveo (m)	Coeff. di Manning (m <sup>-1/3</sup> s)	Tempo di ritorno (anni)	Portata (m <sup>3</sup> /s)	Quota pelo libero (m s.l.m.)	Tirante idrico (m)	Pendenza l.c.t. (m/m)	Velocità media alveo (m/s)	Sezione idrica (m <sup>2</sup> )
878	1.60	0.035	50	717.44	10.29	8.69	0.001995	3.20	224.49
			100	862.00	10.92	9.32	0.001919	3.37	255.79
			300	1098.50	11.80	10.20	0.001918	3.67	299.46
852	1.60	0.035	50	717.44	10.25	8.65	0.001916	3.14	228.66
			100	862.00	10.89	9.29	0.001834	3.30	260.94
			300	1098.50	11.77	10.17	0.001824	3.59	305.87
824	1.60	0.035	50	717.44	10.20	8.60	0.001946	3.12	230.31
			100	862.00	10.84	9.24	0.001844	3.27	263.56
			300	1098.50	11.73	10.13	0.001818	3.55	309.65
796	1.60	0.035	50	717.44	10.01	8.41	0.002424	3.46	207.55
			100	862.00	10.64	9.04	0.002322	3.64	236.89
			300	1098.50	11.50	9.90	0.002336	3.97	276.87
767	1.60	0.035	50	717.44	9.94	8.34	0.002514	3.45	207.77
			100	862.00	10.58	8.98	0.002340	3.60	239.16
			300	1098.50	11.45	9.85	0.002295	3.90	281.61
743	1.60	0.035	50	717.44	9.83	8.23	0.002592	3.57	200.91
			100	862.00	10.47	8.87	0.002505	3.73	231.28
			300	1098.50	11.33	9.73	0.002461	4.04	272.23
715	1.60	0.035	50	717.44	9.74	8.14	0.002632	3.61	198.50
			100	862.00	10.38	8.78	0.002597	3.79	227.64
			300	1098.50	11.22	9.62	0.002578	4.11	267.14
689	1.60	0.035	50	717.44	9.62	8.02	0.002838	3.74	191.91
			100	862.00	10.27	8.67	0.002836	3.89	221.79
			300	1098.50	11.12	9.52	0.002735	4.18	262.56
665	1.60	0.035	50	717.44	9.47	7.87	0.003126	3.92	183.02
			100	862.00	10.11	8.51	0.003233	4.06	212.34
			300	1098.50	10.99	9.39	0.003014	4.32	254.02
640	1.60	0.035	50	717.44	9.35	7.75	0.003179	4.01	178.81
			100	862.00	9.96	8.36	0.003464	4.21	204.74
			300	1098.50	10.83	9.23	0.003267	4.49	244.60
606	1.60	0.035	50	717.44	9.47	7.87	0.001853	3.25	220.73
			100	862.00	10.09	8.49	0.002045	3.42	252.40
			300	1098.50	10.98	9.38	0.001956	3.67	299.42
597	1.26	0.035	50	717.44	9.47	8.21	0.001233	2.68	267.86
			100	862.00	10.05	8.79	0.001262	2.88	299.19
			300	1098.50	10.88	9.62	0.001338	3.20	343.56
589	1.26	0.035	50	717.44	9.43	8.17	0.001369	2.77	259.05
			100	862.00	10.01	8.75	0.001386	2.97	290.31
			300	1098.50	10.84	9.58	0.001454	3.28	334.52
566	1.26	0.035	50	717.44	9.28	8.02	0.001830	3.09	231.96
			100	862.00	9.85	8.59	0.001901	3.30	261.13
			300	1098.50	10.65	9.39	0.001957	3.61	304.30
559	1.26	0.035	50	717.44	9.22	7.96	0.002026	3.21	223.42
			100	862.00	9.78	8.52	0.002093	3.43	251.57
			300	1098.50	10.58	9.32	0.002187	3.74	293.82





Nome sez. (dist. dalla foce in m)	Quota fondo alveo (m)	Coeff. di Manning (m <sup>-1/3</sup> s)	Tempo di ritorno (anni)	Portata (m <sup>3</sup> /s)	Quota pelo libero (m s.l.m.)	Tirante idrico (m)	Pendenza l.c.t. (m/m)	Velocità media alveo (m/s)	Sezione idrica (m <sup>2</sup> )
543	1.26	0.035	50	717.44	9.31	8.05	0.001232	2.67	268.28
			100	862.00	9.88	8.62	0.001271	2.88	298.87
			300	1098.50	10.69	9.43	0.001359	3.21	342.27
513	1.22	0.035	50	717.44	9.06	7.84	0.002235	3.27	219.27
			100	862.00	9.62	8.40	0.002192	3.47	248.12
			300	1098.50	10.40	9.18	0.002231	3.81	288.45
485	1.26	0.035	50	717.44	9.01	7.75	0.002065	3.24	221.23
			100	862.00	9.56	8.30	0.002064	3.46	248.99
			300	1098.50	10.33	9.07	0.002149	3.82	287.56
459	1.26	0.035	50	717.44	8.90	7.64	0.002310	3.38	212.49
			100	862.00	9.45	8.19	0.002299	3.60	239.47
			300	1098.50	10.21	8.95	0.002392	3.97	276.61
436	1.23	0.035	50	717.44	8.82	7.59	0.002558	3.45	208.18
			100	862.00	9.37	8.14	0.002502	3.66	235.81
			300	1098.50	10.13	8.90	0.002563	4.02	273.59
405	1.20	0.035	50	717.44	8.76	7.56	0.002421	3.38	212.06
			100	862.00	9.32	8.12	0.002374	3.59	239.99
			300	1098.50	10.07	8.87	0.002446	3.95	277.96
388	1.22	0.035	50	717.44	8.59	7.37	0.003141	3.69	194.21
			100	862.00	9.15	7.93	0.002981	3.88	222.04
			300	1098.50	9.90	8.68	0.002997	4.24	259.08
363	1.21	0.035	50	717.44	8.52	7.31	0.003025	3.64	196.85
			100	862.00	9.09	7.88	0.002874	3.83	224.97
			300	1098.50	9.84	8.63	0.002903	4.19	262.11
342	1.21	0.035	50	717.44	8.51	7.30	0.002529	3.48	206.16
			100	862.00	9.07	7.86	0.002472	3.69	233.65
			300	1098.50	9.82	8.61	0.002571	4.07	269.89
318	1.18	0.035	50	717.44	8.49	7.31	0.002219	3.31	216.75
			100	862.00	9.06	7.88	0.002172	3.51	245.52
			300	1098.50	9.81	8.63	0.002264	3.88	283.39
294	1.19	0.035	50	717.44	8.30	7.11	0.002899	3.64	197.03
			100	862.00	8.87	7.68	0.002779	3.84	224.65
			300	1098.50	9.59	8.40	0.002873	4.23	259.90
270	1.12	0.035	50	717.44	8.07	6.95	0.003901	3.99	179.67
			100	862.00	8.66	7.54	0.003533	4.14	208.45
			300	1098.50	9.37	8.25	0.003548	4.52	243.27
234	1.14	0.035	50	717.44	8.18	7.04	0.001891	3.20	224.17
			100	862.00	8.76	7.62	0.001876	3.41	253.04
			300	1098.50	9.49	8.35	0.002033	3.81	288.65
218	-0.20	0.035	50	717.44	7.90	8.10	0.003452	3.79	189.06
			100	862.00	8.52	8.72	0.003093	3.92	220.05
			300	1098.50	9.23	9.43	0.003132	4.29	256.09
193	-0.82	0.035	50	717.44	6.56	7.38	0.009790	6.00	119.67
			100	862.00	7.32	8.14	0.009492	5.87	146.79
			300	1098.50	8.04	8.86	0.009432	6.11	179.73



Nome sez. (dist. dalla foce in m)	Quota fondo alveo (m)	Coeff. di Manning (m <sup>-1/3</sup> s)	Tempo di ritorno (anni)	Portata (m <sup>3</sup> /s)	Quota pelo libero (m s.l.m.)	Tirante idrico (m)	Pendenza l.c.t. (m/m)	Velocità media alveo (m/s)	Sezione idrica (m <sup>2</sup> )
167	-0.79	0.035	50	717.44	3.96	4.75	0.034542	8.63	83.14
			100	862.00	4.29	5.08	0.032478	8.99	95.83
			300	1098.50	4.84	5.63	0.028629	9.34	117.57
126	-0.70	0.035	50	717.44	5.47	6.17	0.005680	4.69	153.00
			100	862.00	5.90	6.60	0.005763	5.02	171.68
			300	1098.50	6.54	7.24	0.005903	5.50	199.82
94	0.00	0.035	50	717.44	5.37	5.37	0.005006	4.48	160.08
			100	862.00	5.82	5.82	0.005002	4.77	180.74
			300	1098.50	6.49	6.49	0.005001	5.17	212.40

*Schema planimetrico con l'ubicazione delle sezioni di calcolo per le verifiche idrauliche nel fiume Tellaro*

