

*Supplementary Information*

A comparison of four methods to estimate population size of Alpine marmot (*Marmota marmota*)

Corlatti L., Nelli L., Bertolini M., Zibordi F., Pedrotti L.

**Table S1** - Sex-age class and capture history of the marmots (ID) marked between May 7 and May 14, 2015 (n=39) in the study site within the Stelvio National Park, used to estimate population size by means of CMR models.

ID	Sex-age class	Capture history
1	adult male	00010001
2	adult male	00001000
3	young	00110100
4	adult male	00000010
5	adult female	00000100
6	young	00001000
7	young	00000001
8	adult male	00000010
9	adult female	00100001
10	adult female	00010000
11	adult male	00010000
12	adult male	01000100
13	adult female	00100000
14	adult male	01001000
15	young	00001010
16	adult male	00100100
17	young	01011100
18	adult female	01100001
19	young	01100000
20	adult male	10000010
21	young	10000010
22	adult female	00001001
23	adult male	10000000
24	adult male	00000100
25	adult female	01001010
26	adult male	01000000
27	adult male	00000100
28	adult male	00100000
29	adult female	01000000
30	young	00100000
31	adult male	00010000
32	adult female	00010100
33	young	00000010
34	adult female	00011000
35	adult female	01010000
36	young	00010000
37	adult female	00001000
38	adult male	00000100
39	young	00000101

**Table S2** – Sex-age class, number of observations for each marked individual (ID, n=39), number of unidentified individuals seen and number of unmarked individuals seen during the mark-resight sessions conducted in spring of 2015 in the study site within the Stelvio National Park, used to estimate population size of Alpine marmot by means of MR models.

ID	Sex-age class	Number of observations
1	adult male	0
2	adult male	2
3	young	2
4	adult male	0
5	adult female	1
6	young	2
7	young	0
8	adult male	2
9	adult female	4
10	adult female	2
11	adult male	1
12	adult male	2
13	adult female	4
14	adult male	1
15	young	3
16	adult male	1
17	young	4
18	adult female	2
19	young	5
20	adult male	4
21	young	5
22	adult female	2
23	adult male	1
24	adult male	2
25	adult female	4
26	adult male	5
27	adult male	3
28	adult male	6
29	adult female	0
30	young	0
31	adult male	2
32	adult female	2
33	young	2
34	adult female	1
35	adult female	1
36	young	0
37	adult female	0
38	adult male	0
39	young	1
Marked unidentified seen = 29		
Unmarked seen = 65		

**Table S3** – Number of observed individuals during the double-observer sessions conducted in summer of 2015 in the study site within the Stelvio National Park, used to estimate population size of Alpine marmot by means of IDO and DDO models.

Independent double-observer			
sector	observer A	observer B	observers A & B
A	2	0	5
B	1	2	0
C	0	1	3
D	1	4	2
Dependent double-observer			
sector	primary observer	secondary observer	
A	8	0	
B	2	0	
C	2	1	
D	1	1	