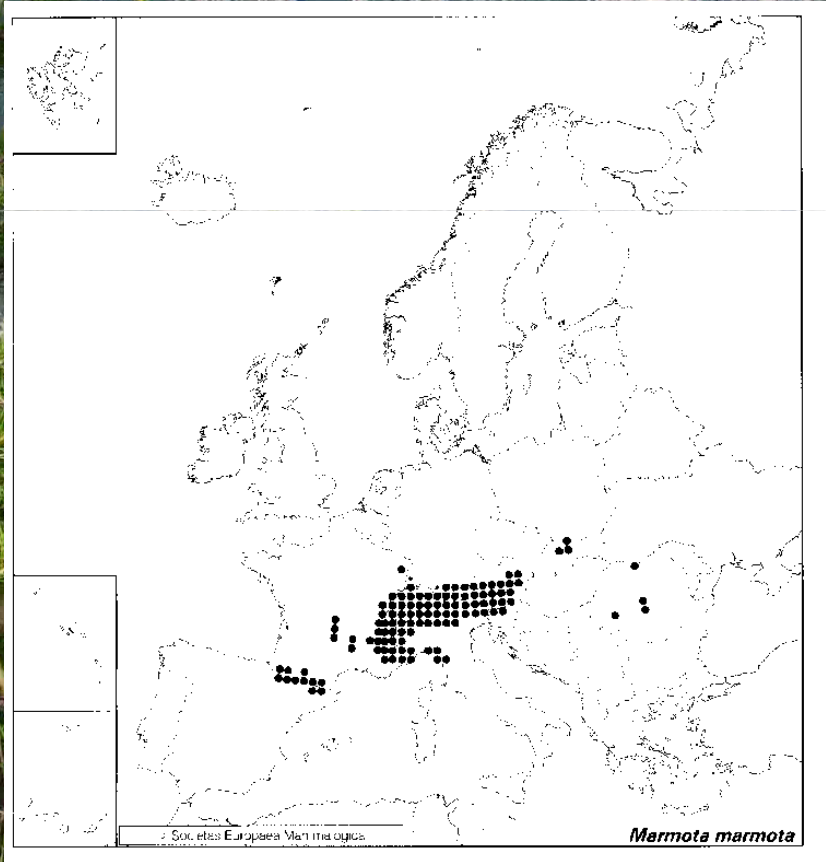
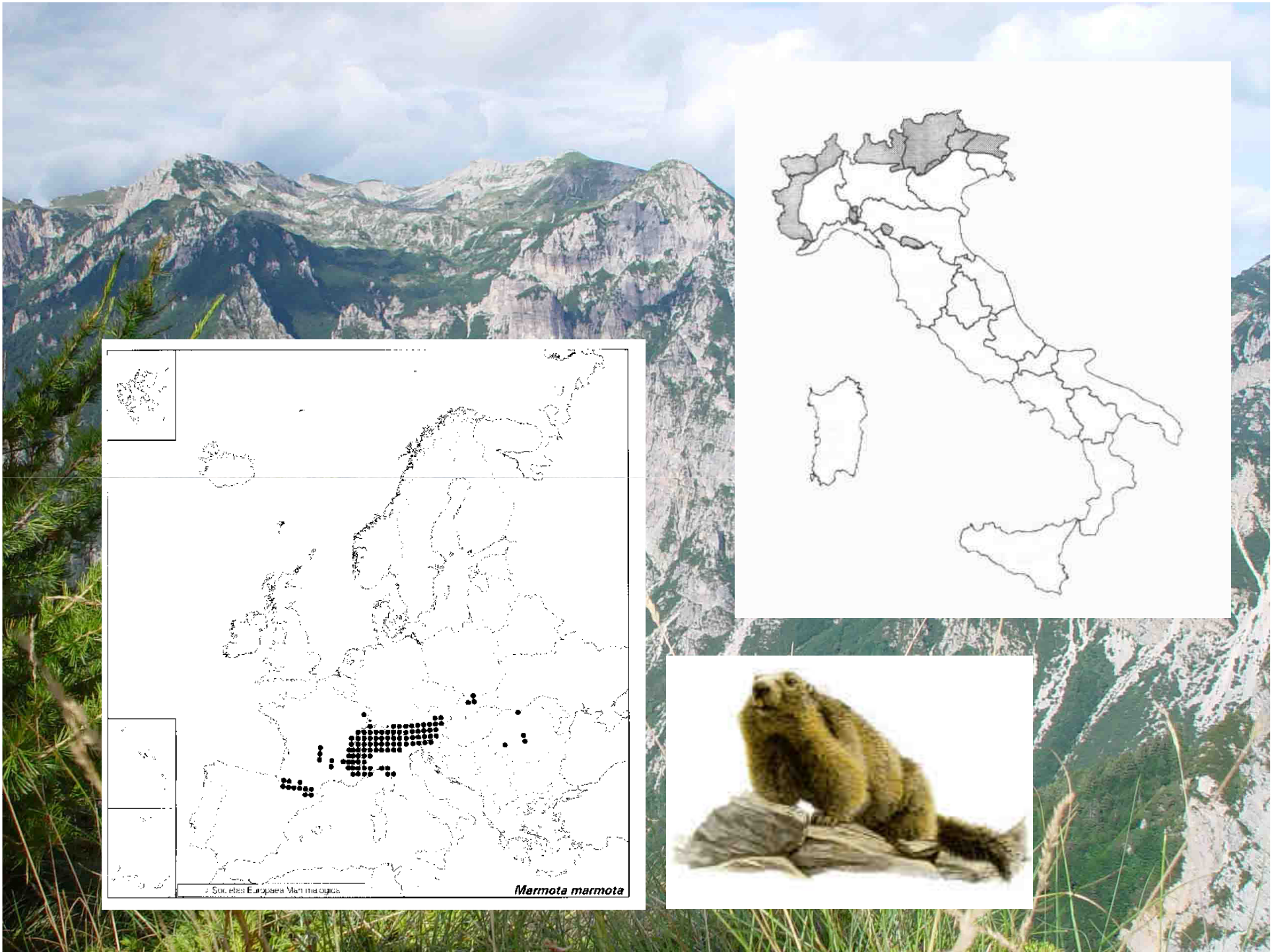




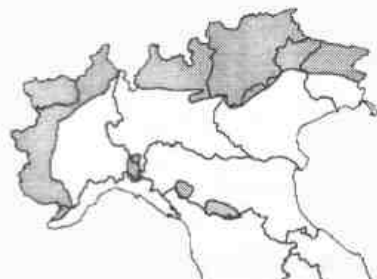
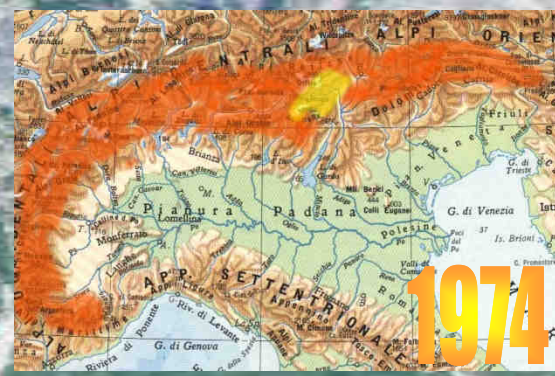
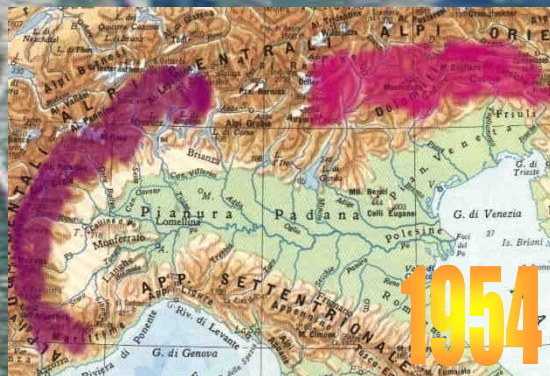
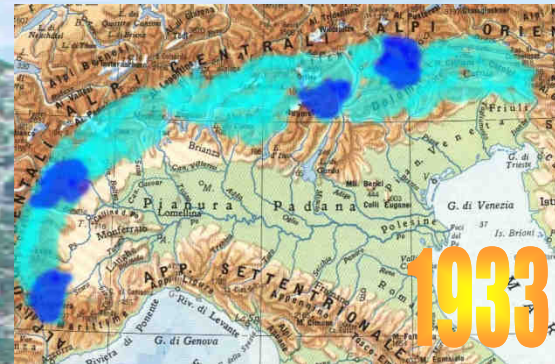
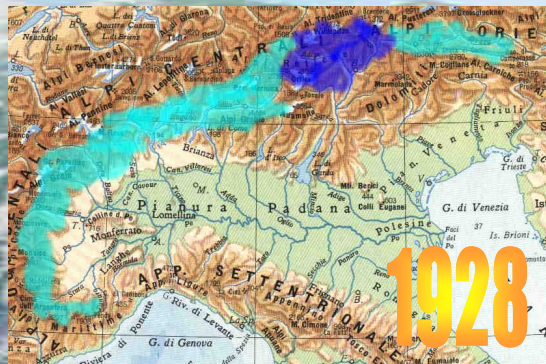
Le introduzioni di *Marmota marmota* come elemento perturbativo delle relazioni trofiche e sanitarie degli ecosistemi

Les introductions de *Marmota marmota* comme élément perturbatif des relations trofiche e sanitaires du écosystème

SCARAVELLI Dino, ZACCARONI Annalisa & PRIORI Pamela



Le variazioni della presenza e della distribuzione durante questo secolo

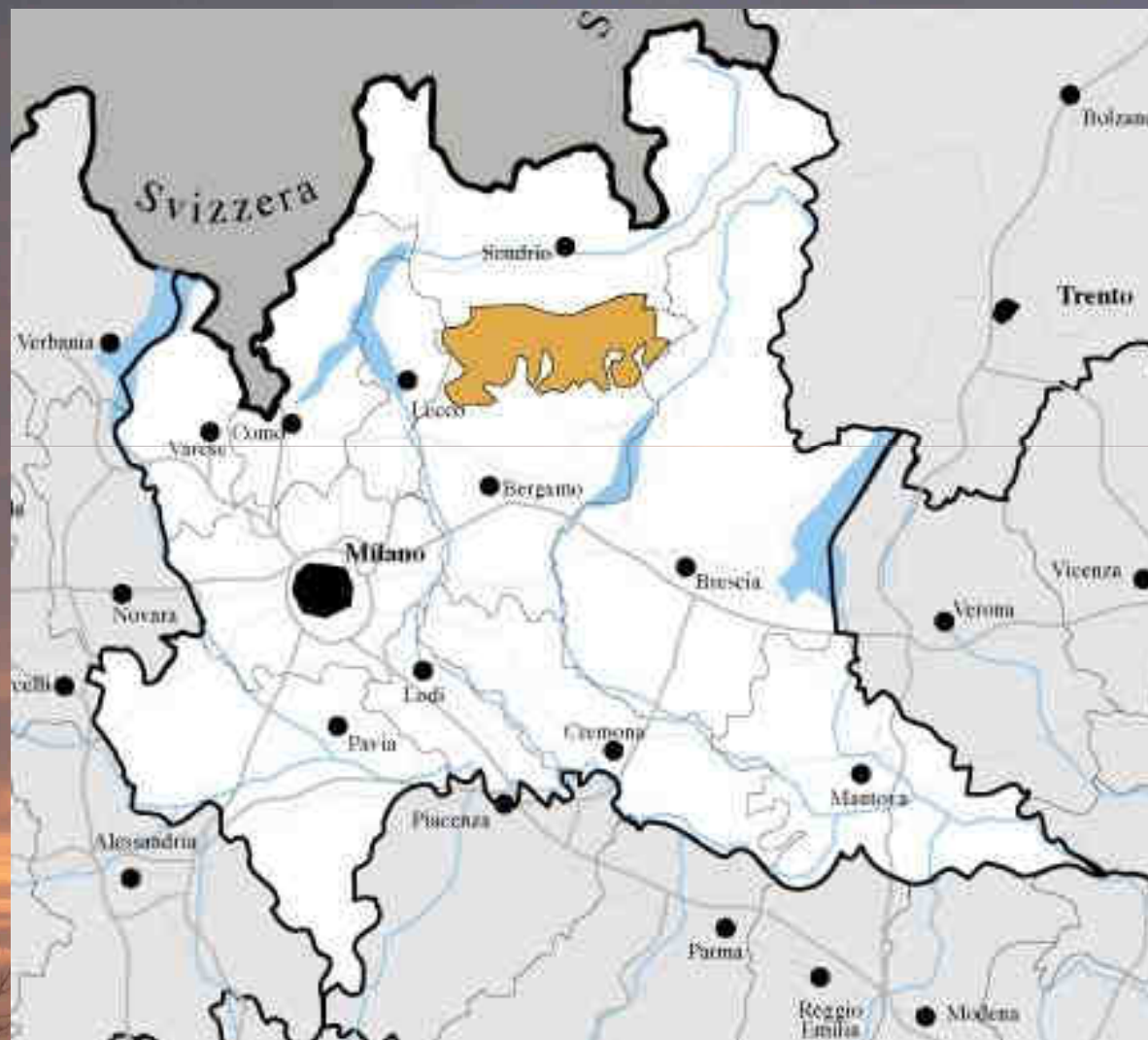


Aujourd'hui

Una serie di introduzioni in nuovi siti...



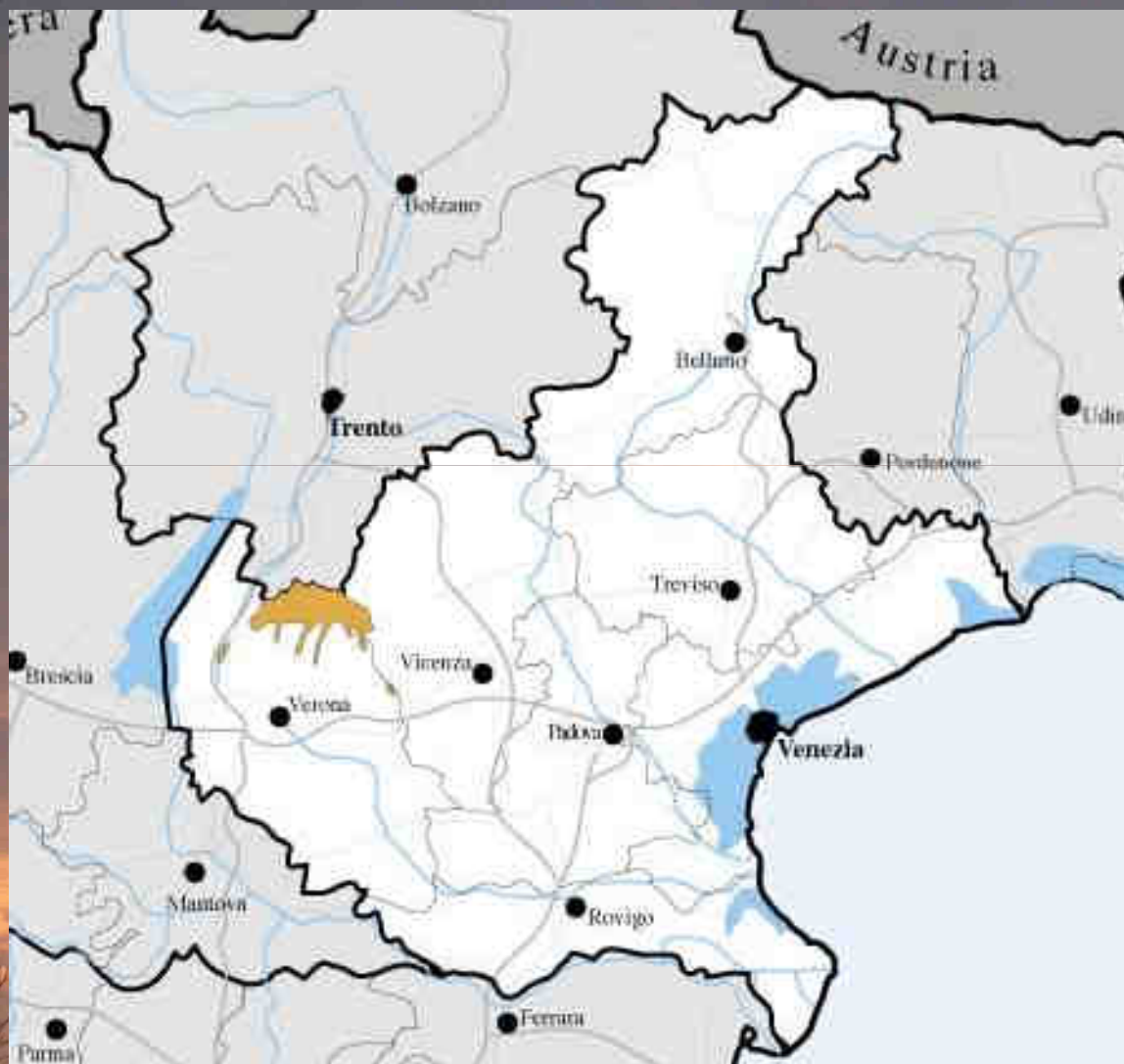
Parco delle Orobie Bergamasche



Parco Nazionale Appennino Tosco-Emiliano




Parco Naturale Regionale della Lessinia



Parco Nazionale Gran Paradiso





*Queste introduzioni possono
cambiare l'equilibrio ecosistemico*

Effetti sulla vegetazione

Creazione di nuove nicchie ecologiche

Rapporto preda-predatore

Un petit exemple puant

Un bousier

Variazioni nella composizione della fauna?

Nuove specie?

Successo dei taxa rari?



un autre petit exemple
et les autres rongeurs?



Chionomys nivalis



© Miloš Anděra

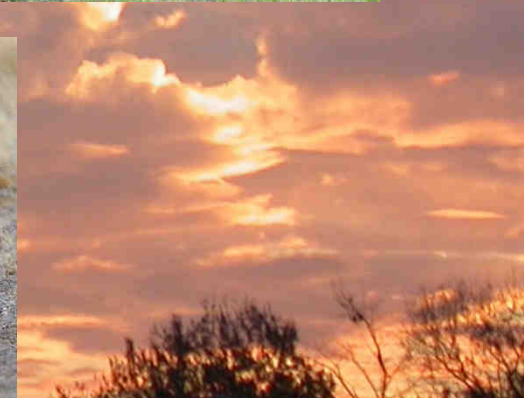


autre Microtus

aussi...

L'ambient alpin fournit une intéressant série de "proies"

Pour les PREDATEURS





Mais les prédateurs peuvent trouver...



une grosse proie!

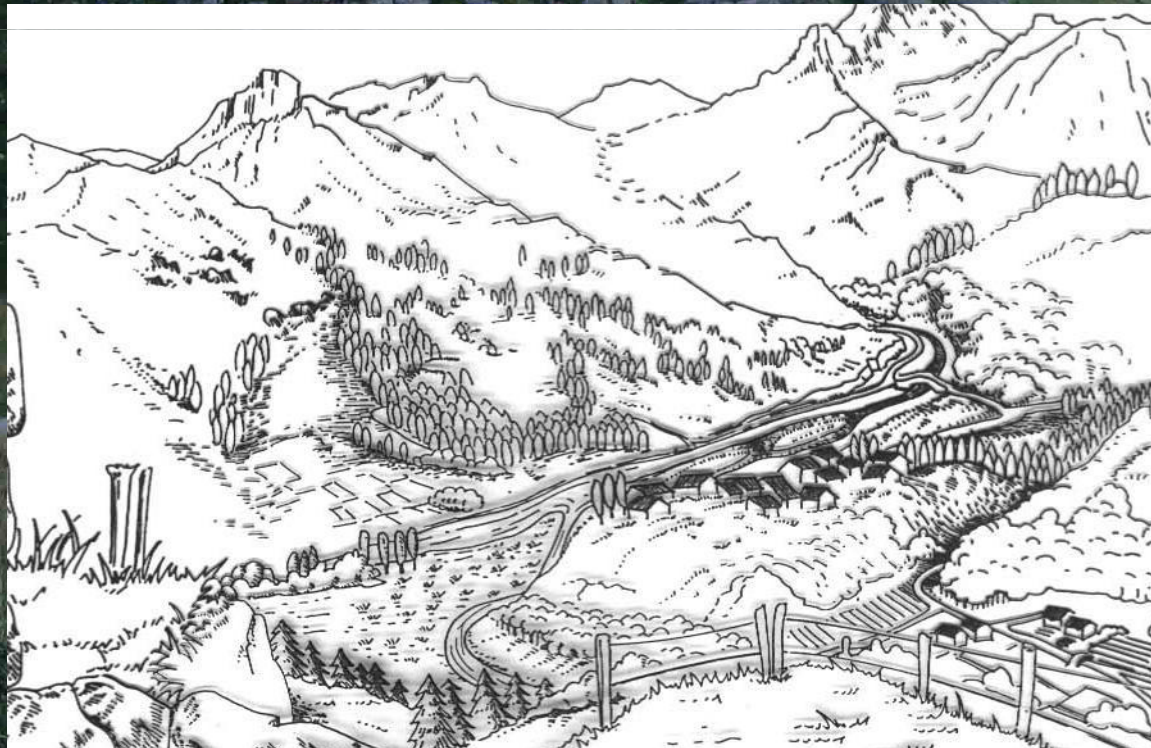
et autres proies....



FIESTA!!!

aussi...

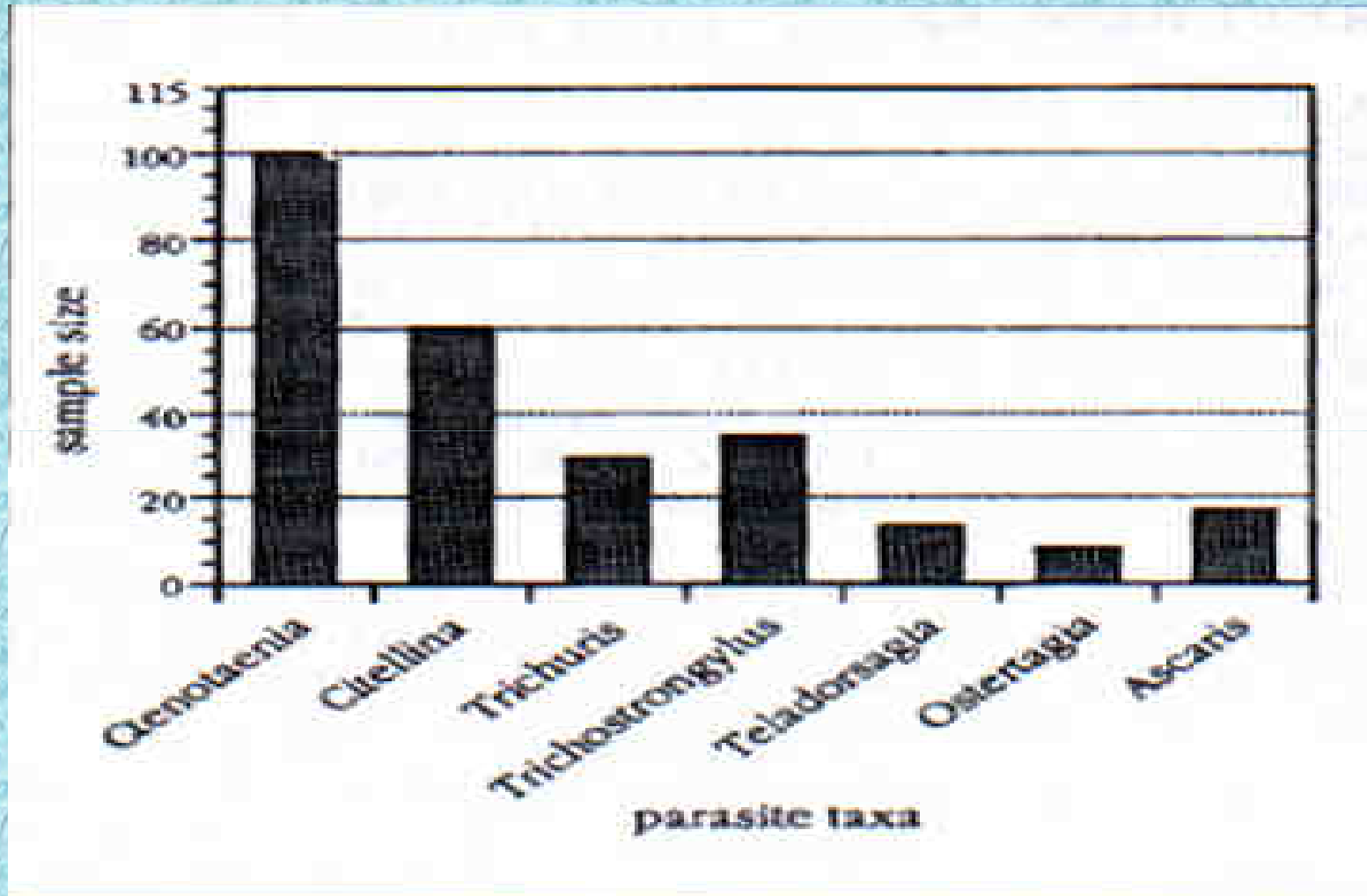
Cambiamenti nel rapporto tra parassita e organismo ospite



aussi... *Marmota marmota*. Lista parassiti...

- *Ctenotaenia marmotte*
- *Citellina alpina*
- *Trichostrongylus axei*
- *O. leptospicularis*
- *Teladorsagia circumcincta*
- *T. pinnata*
- *T. trifurcata*
- *Ascaris* sp
- *T. capriola*
- *T. colubriformis*
- *T. retortaeformis*
- *T. vitrinus*
- *Ostertagia ostertagi*

PRELEUTHNER M. 1990 . Studio su distribuzione, genetica di popolazione e parassitologia della marmotta alpina (*Marmota marmota*) in Austria: Stato di avanzamento.

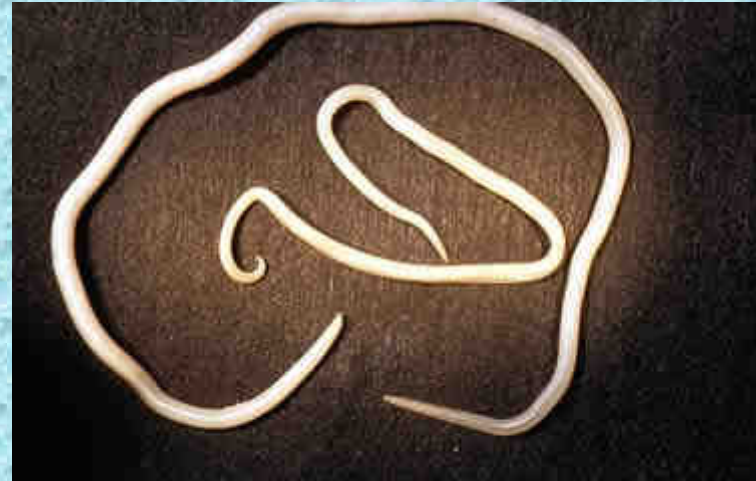


La composizione della fauna parassitologica in base all'origine degli organismi ospiti

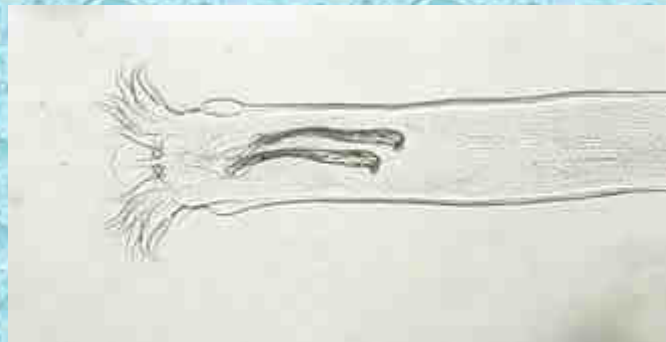
Images de certaines des parasites de *Marmota marmota*



***Trichostrongylus axei* - egg**



***Ascaris suum* - adult male and female.**



Ostertagia ostertagi



***Trichostrongylus axei* - adult male**

alors...
chaque population crée
doit être bien monitorée et recensée





PARCO NATURALE REGIONALE DELLA LESSINIA





ATIT 2008

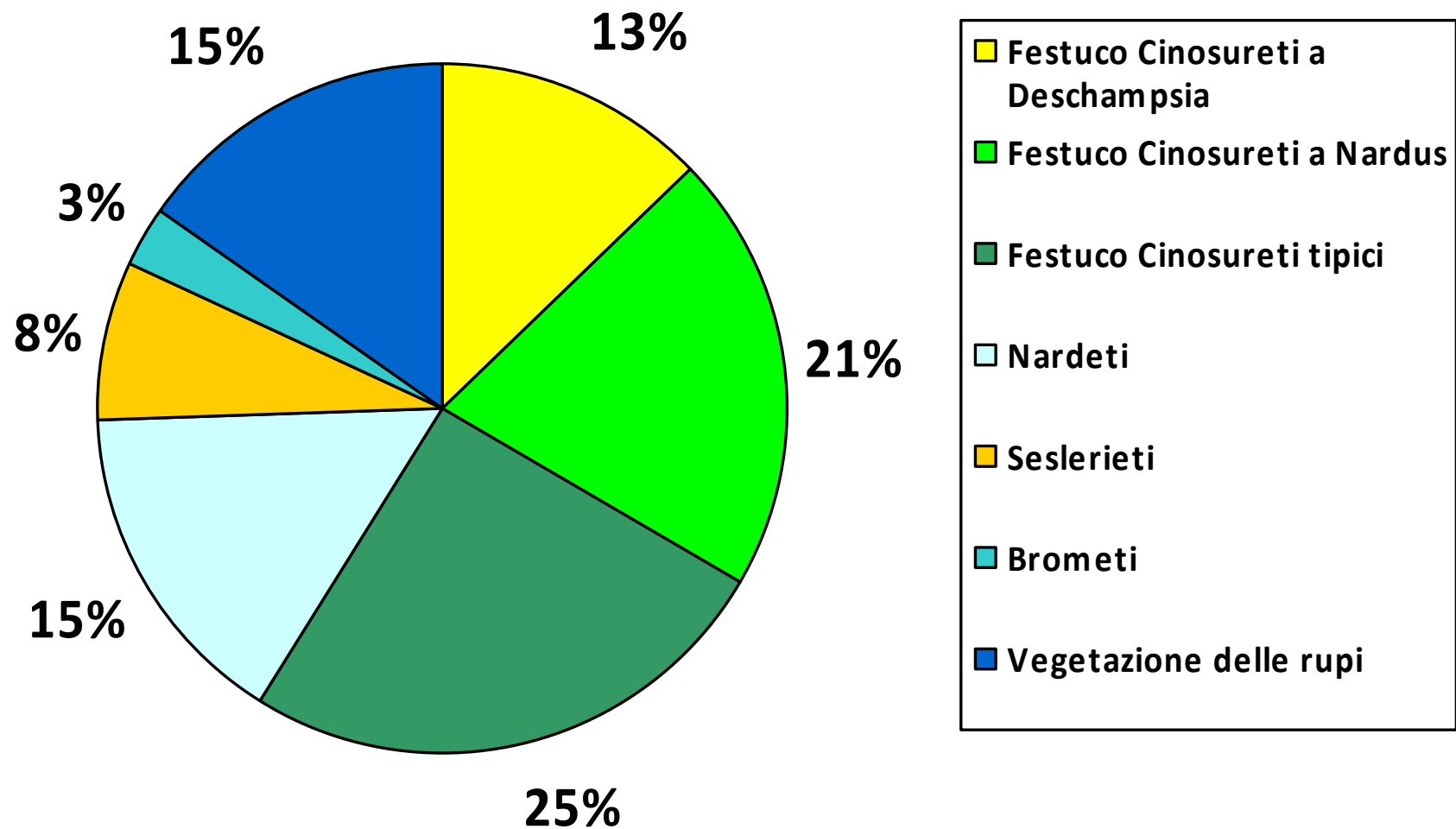


Le introduzioni originali effettuate in Lessinia

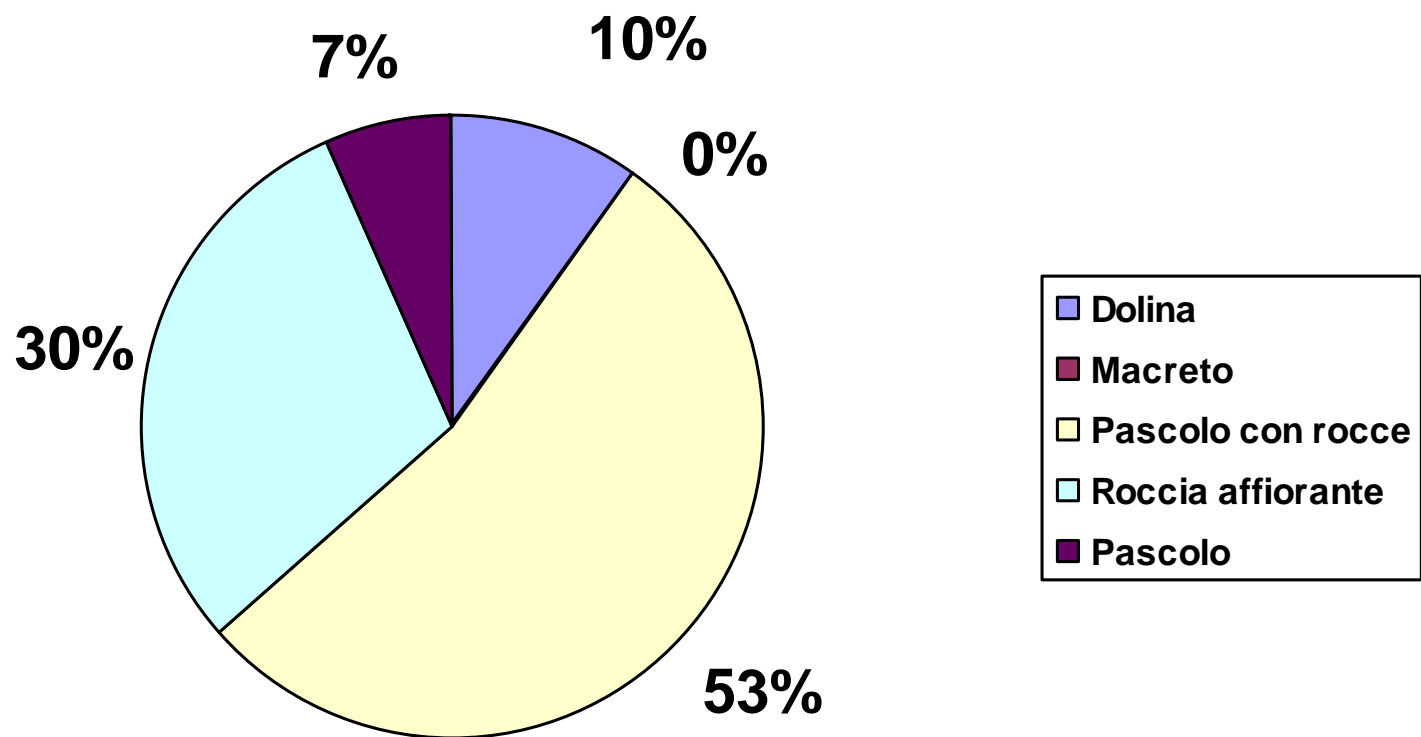
Location	Date	tot	M	F	Ind
Vallone di Malera	26/05/1995	23	8	5	10
percentage	%	100	34,78	21,74	43,48
Malga Podesteria	25/05/1996	20	8	12	
percentage	%	100	40,00	60,00	0,00
Podesteria – Malga Costeggioli	29/05/1997	20			
Podesteria – Vallone	29/05/1997	10			
Podesteria	29/05/1997	30	16	13	1
percentage	%	100	53,33	43,33	3,33
total	95-97	73	32	30	11
percentage	%	100	43,84	41,10	15,07



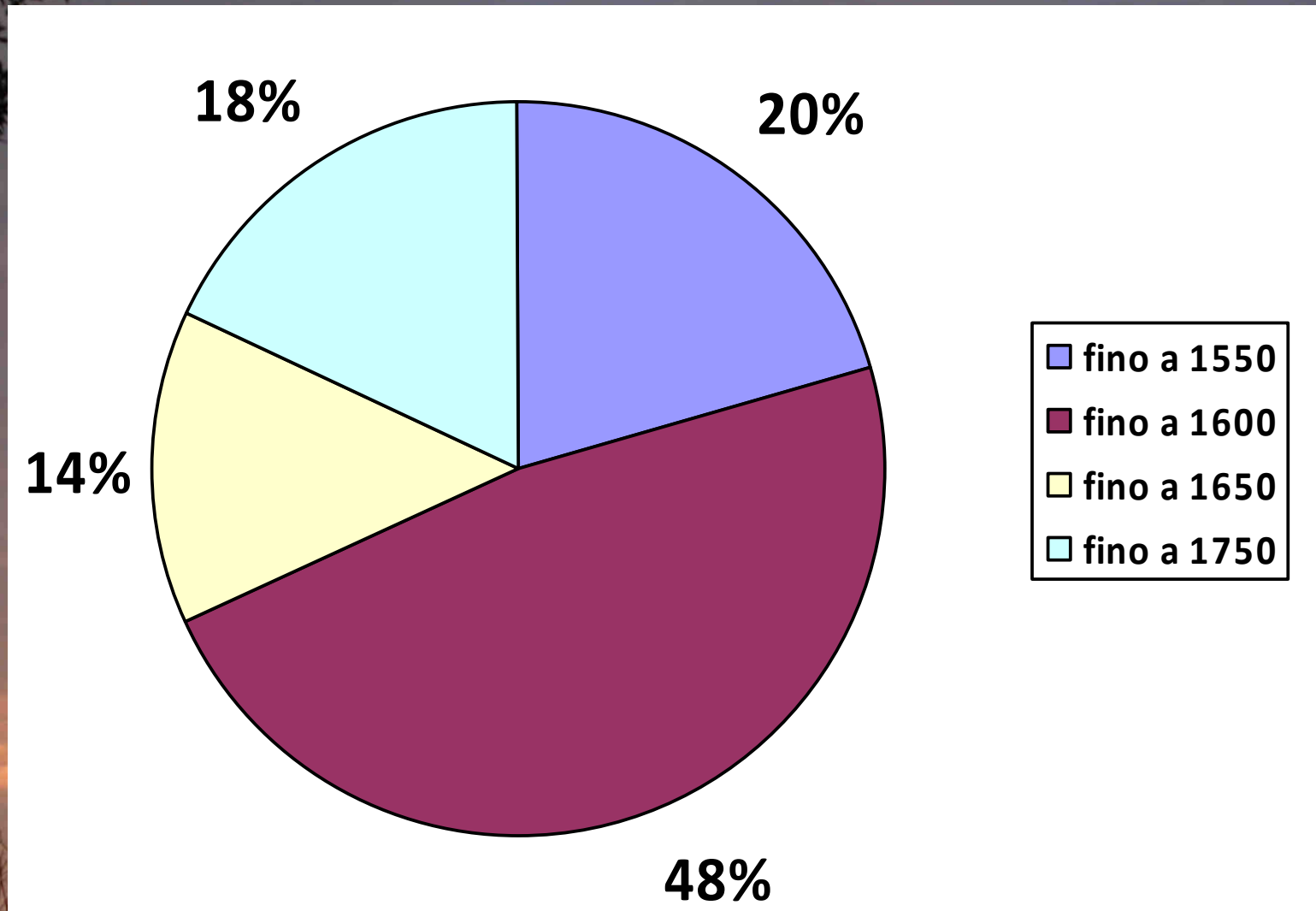
Distribuzione sistemi di tane per TPOLOGIA VEGETAZIONALE



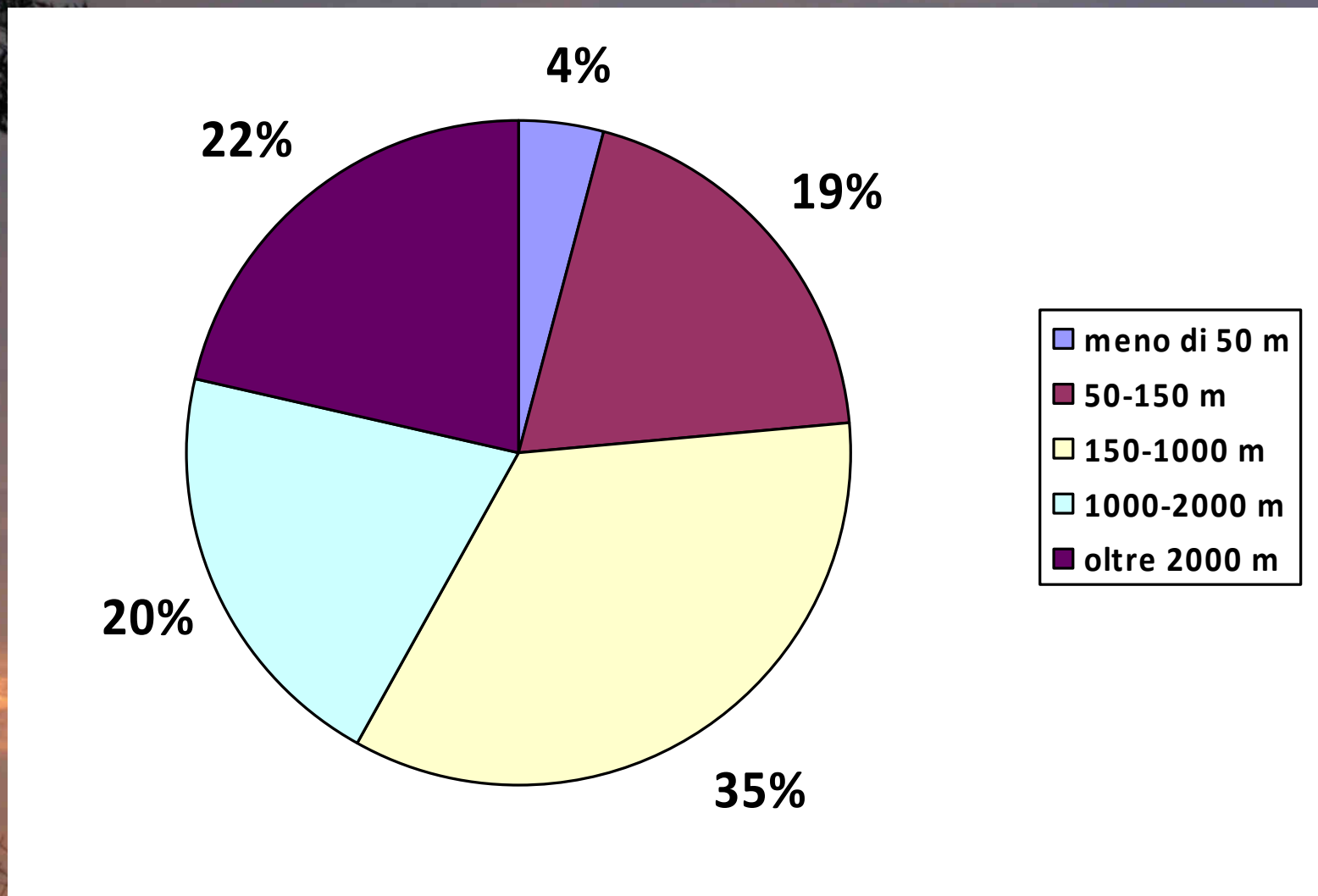
Distribuzione sistemi di tane per TIPOLOGIA AMBIENTALE prevalente



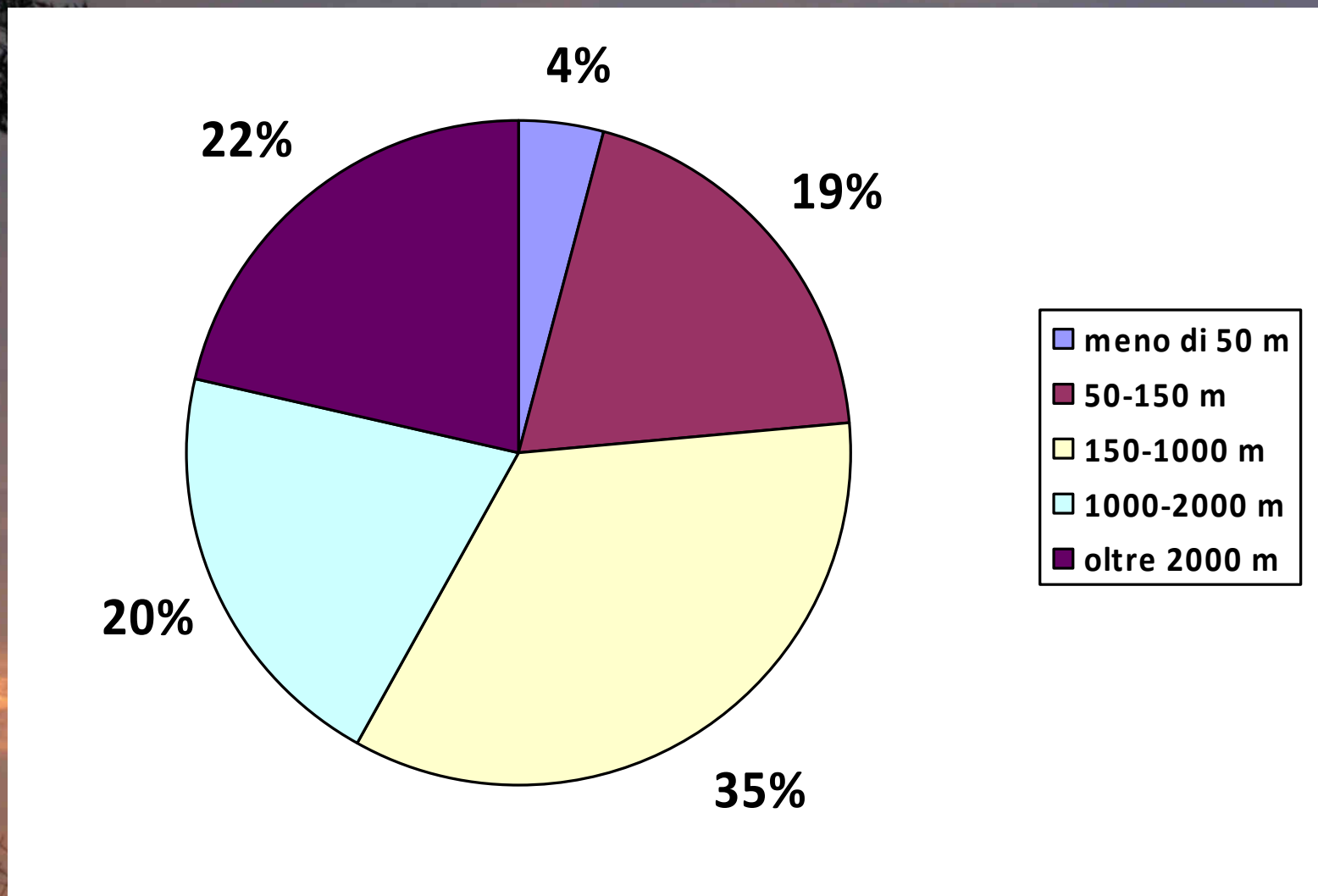
Distribuzione sistemi di tane per QUOTA



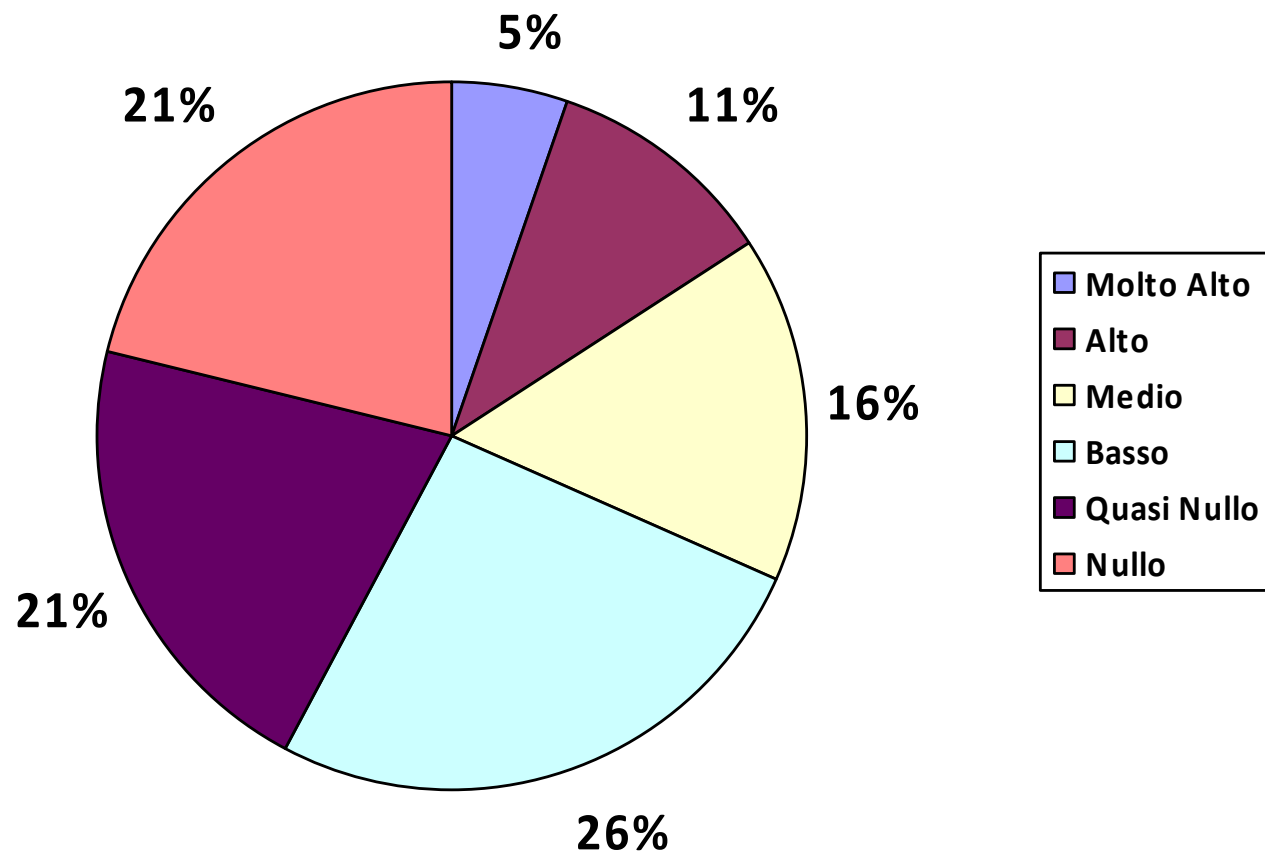
*Distribuzione sistemi di tane per distanza da passaggi
(strade-sentieri-ecc)*



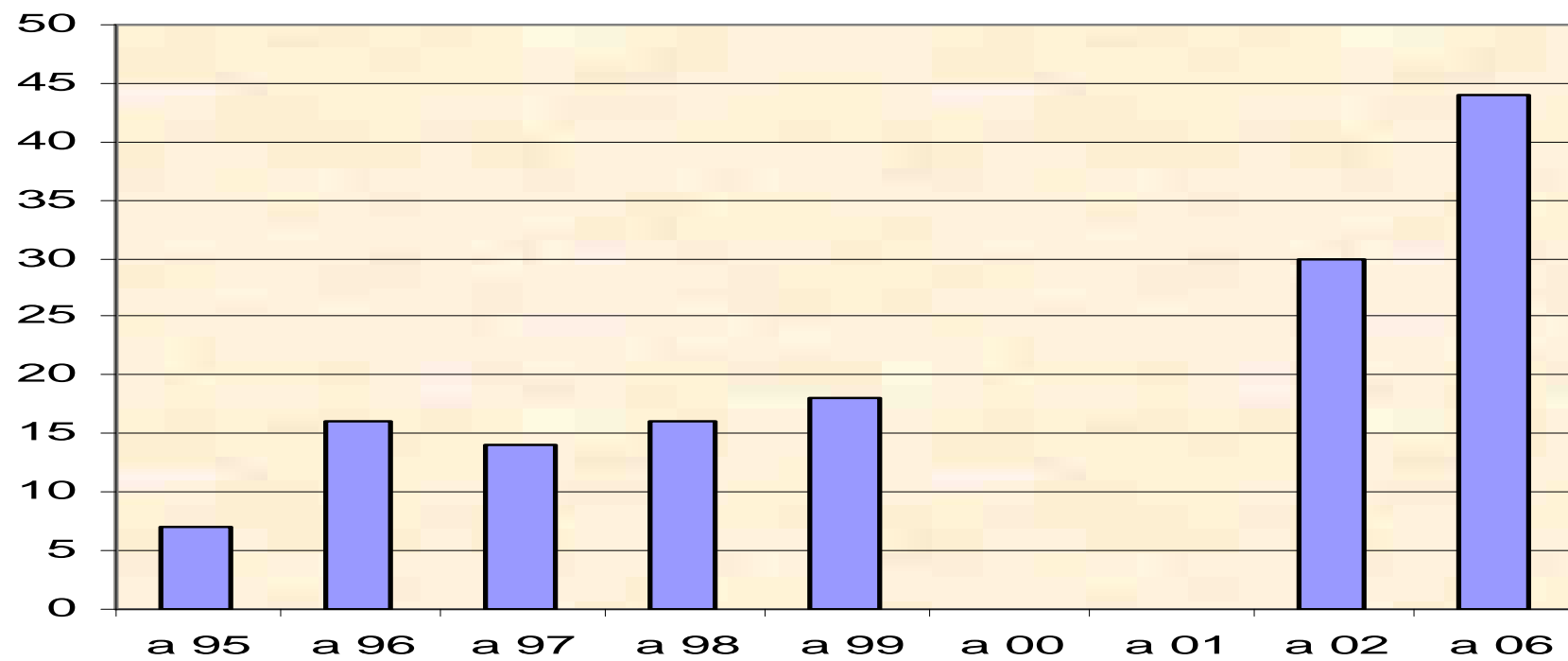
*Distribuzione sistemi di tane per distanza da passaggi
(strade-sentieri-ecc)*

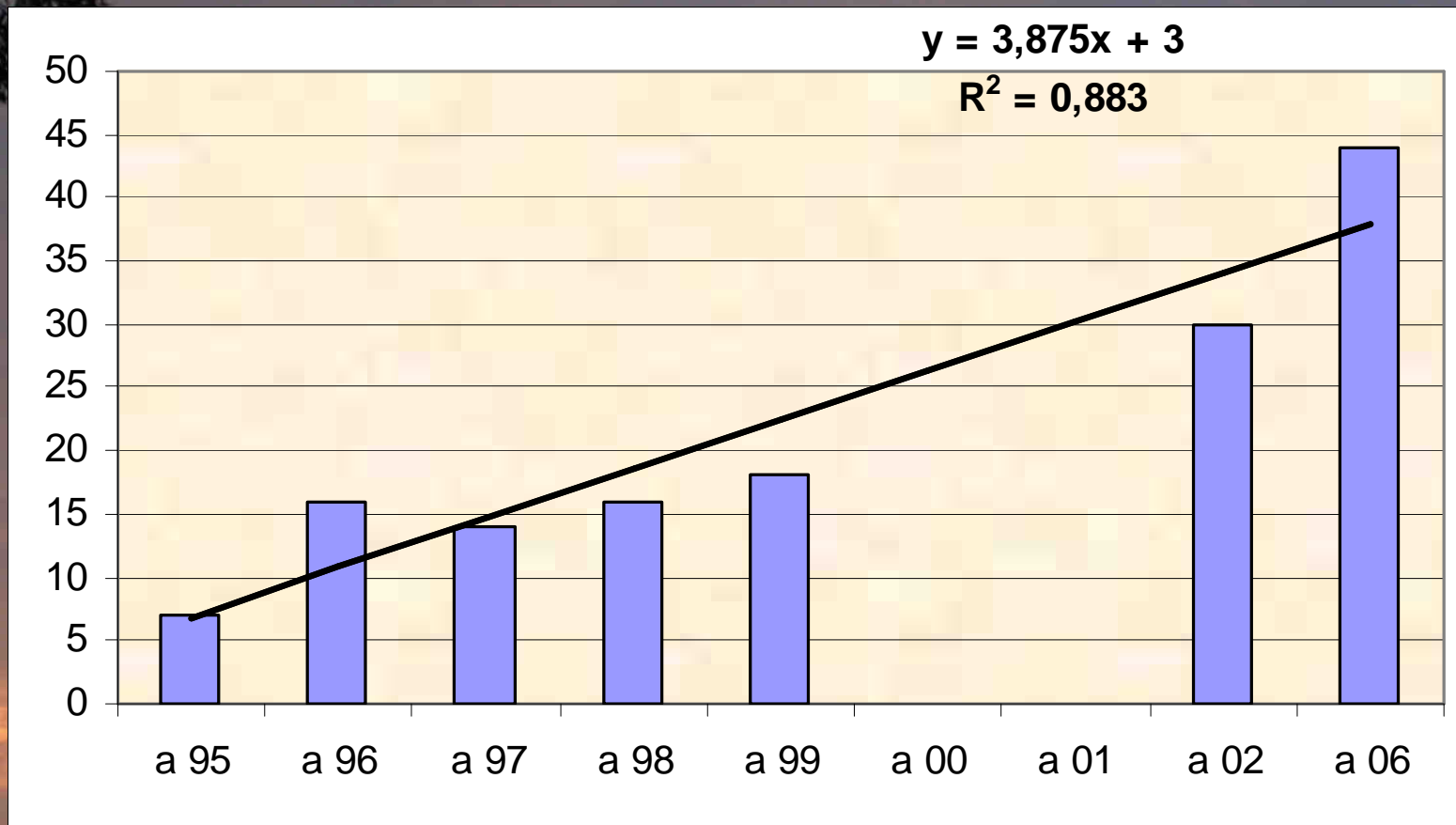


Distribuzione dei sistemi di tane sul fattore *DISTURBO UMANO*

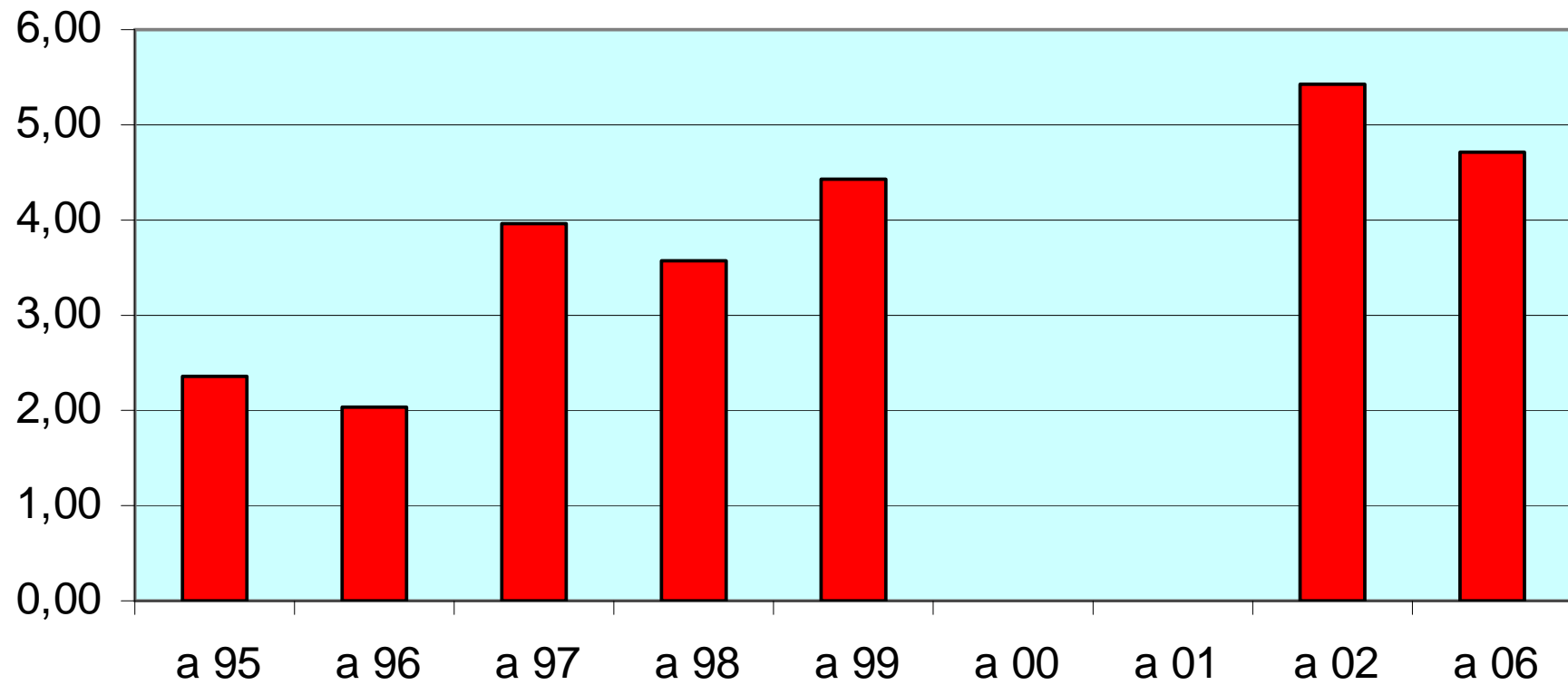


n. tane

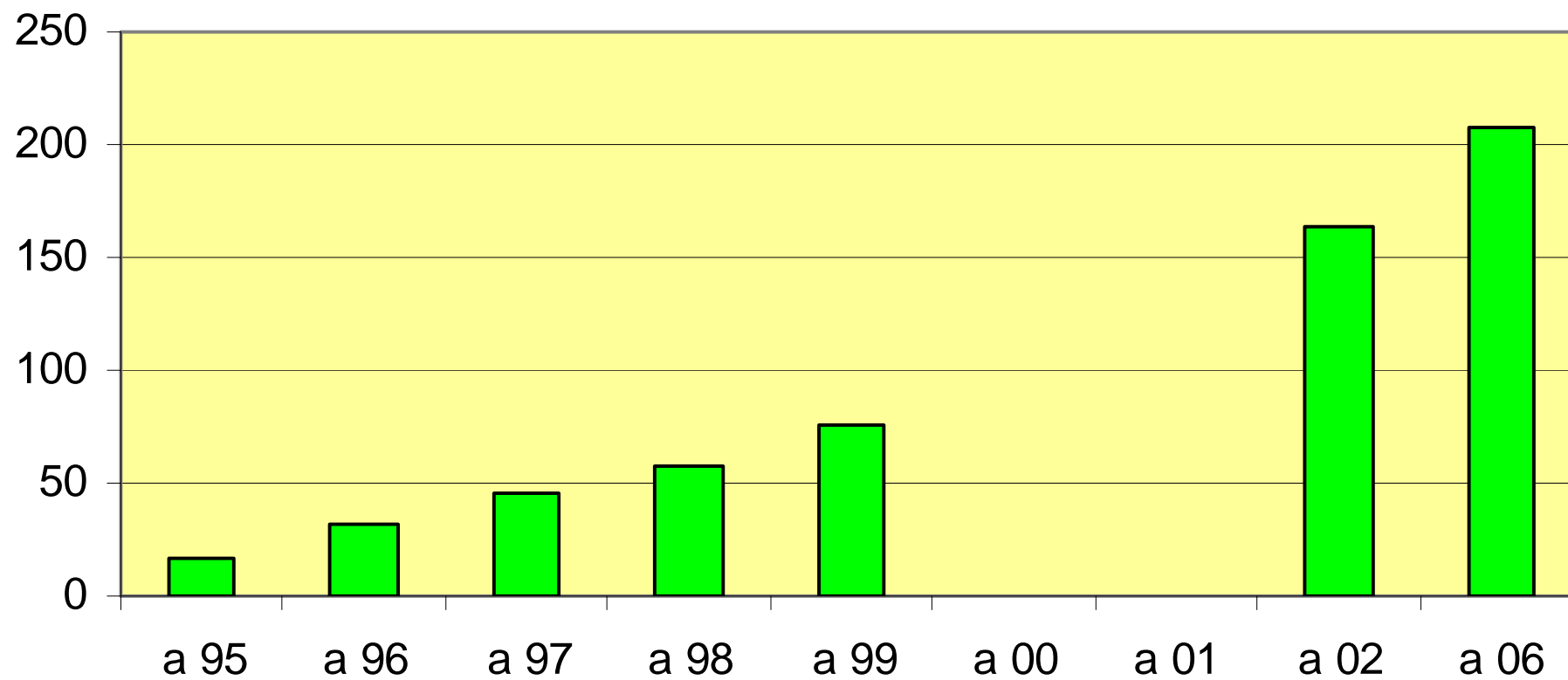




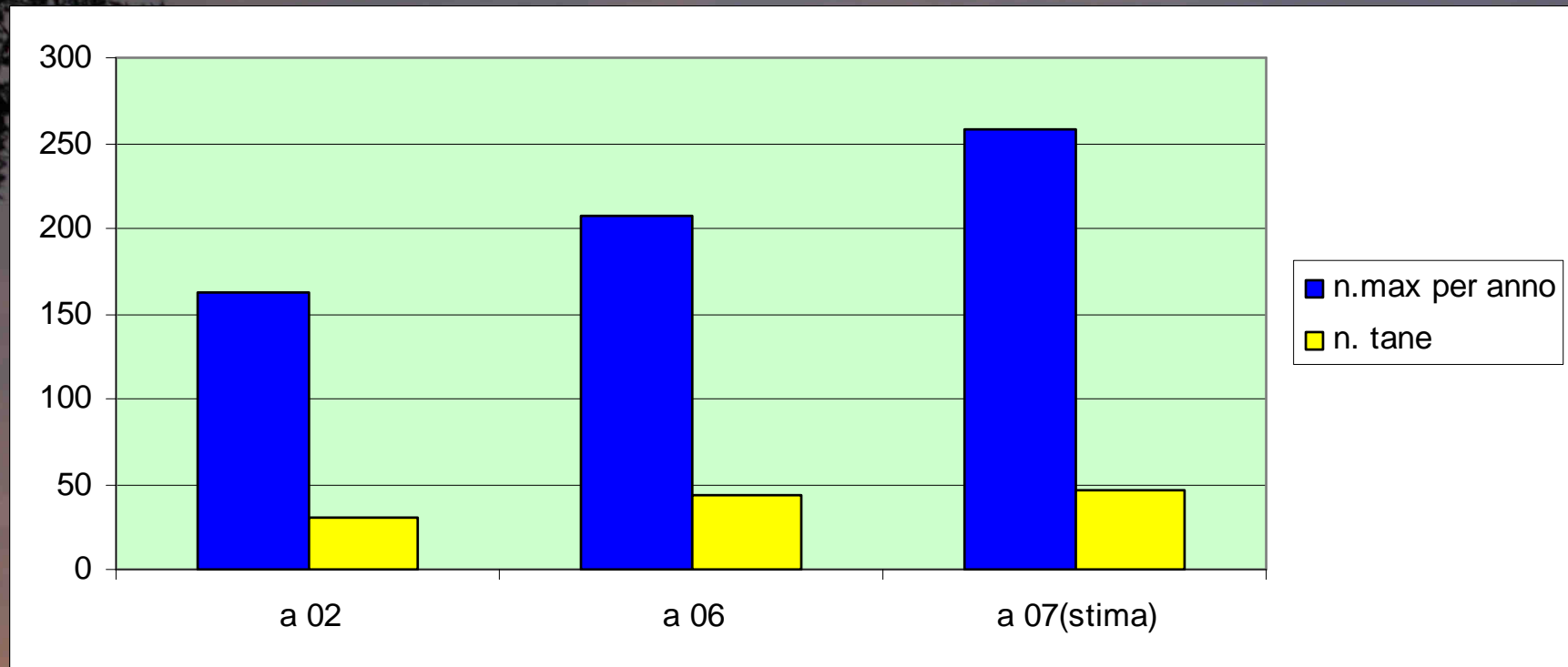
n.esemplari medio per tana



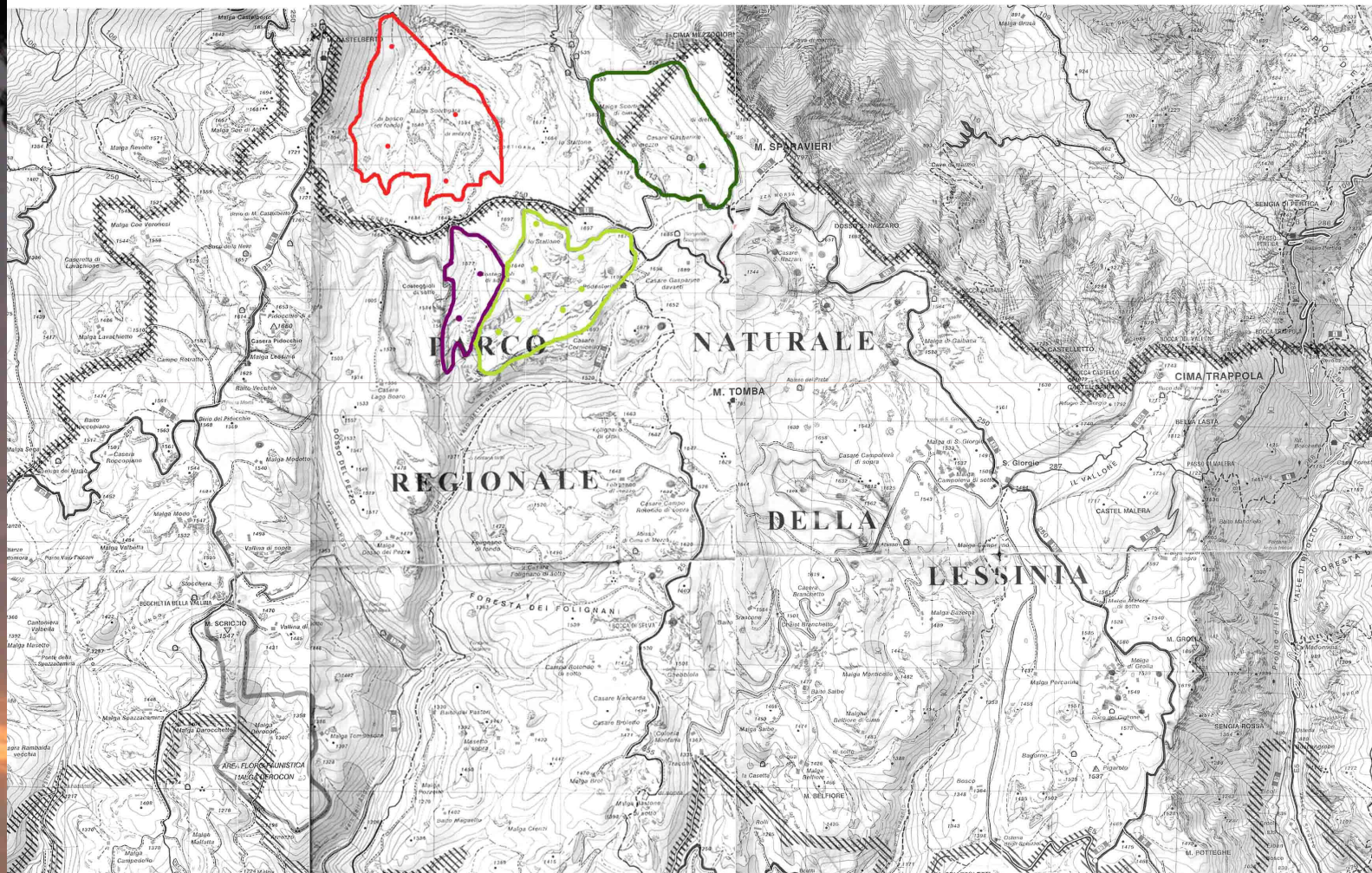
n. marmotte totali per anno



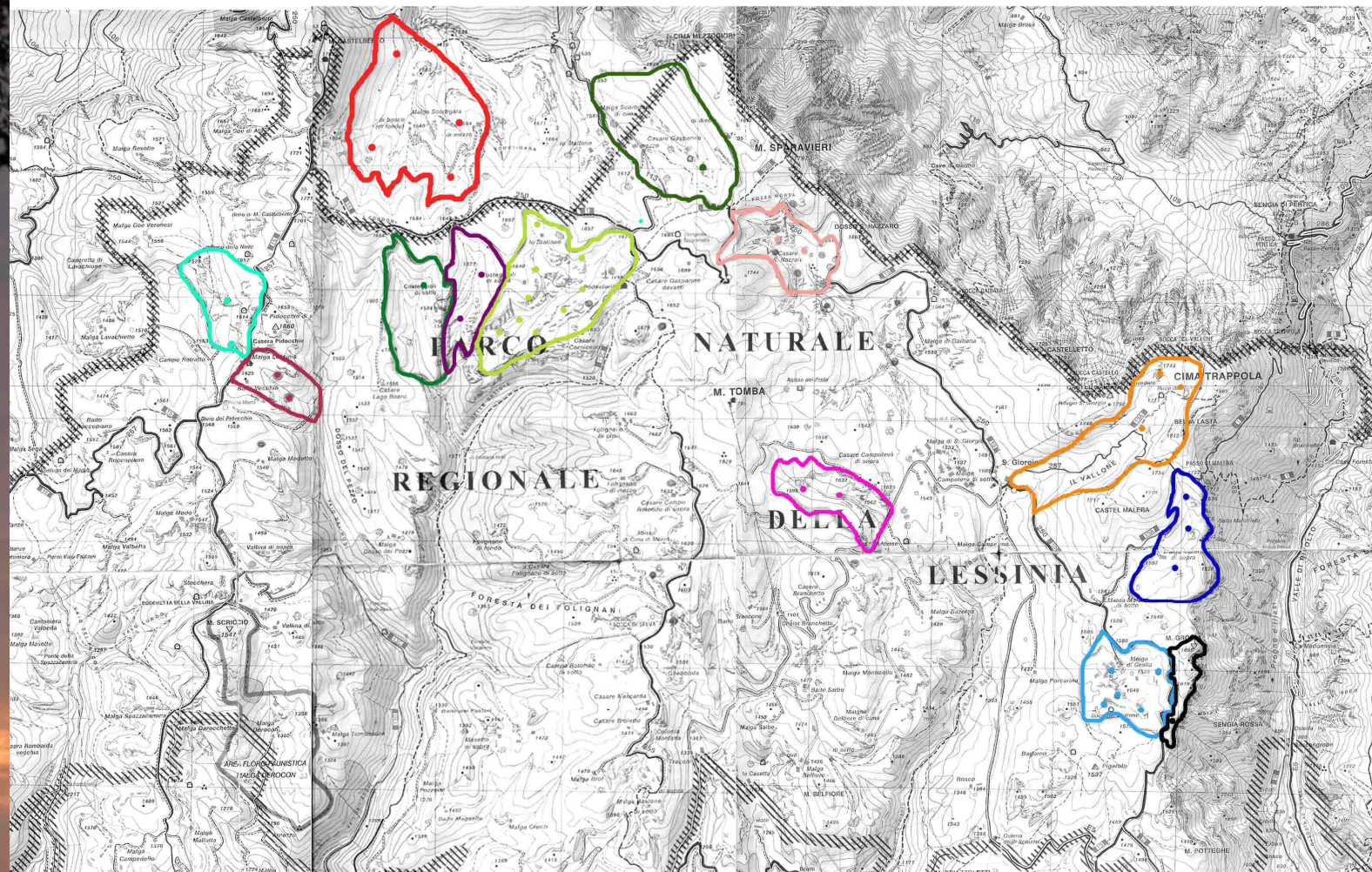
ultima serie in trend



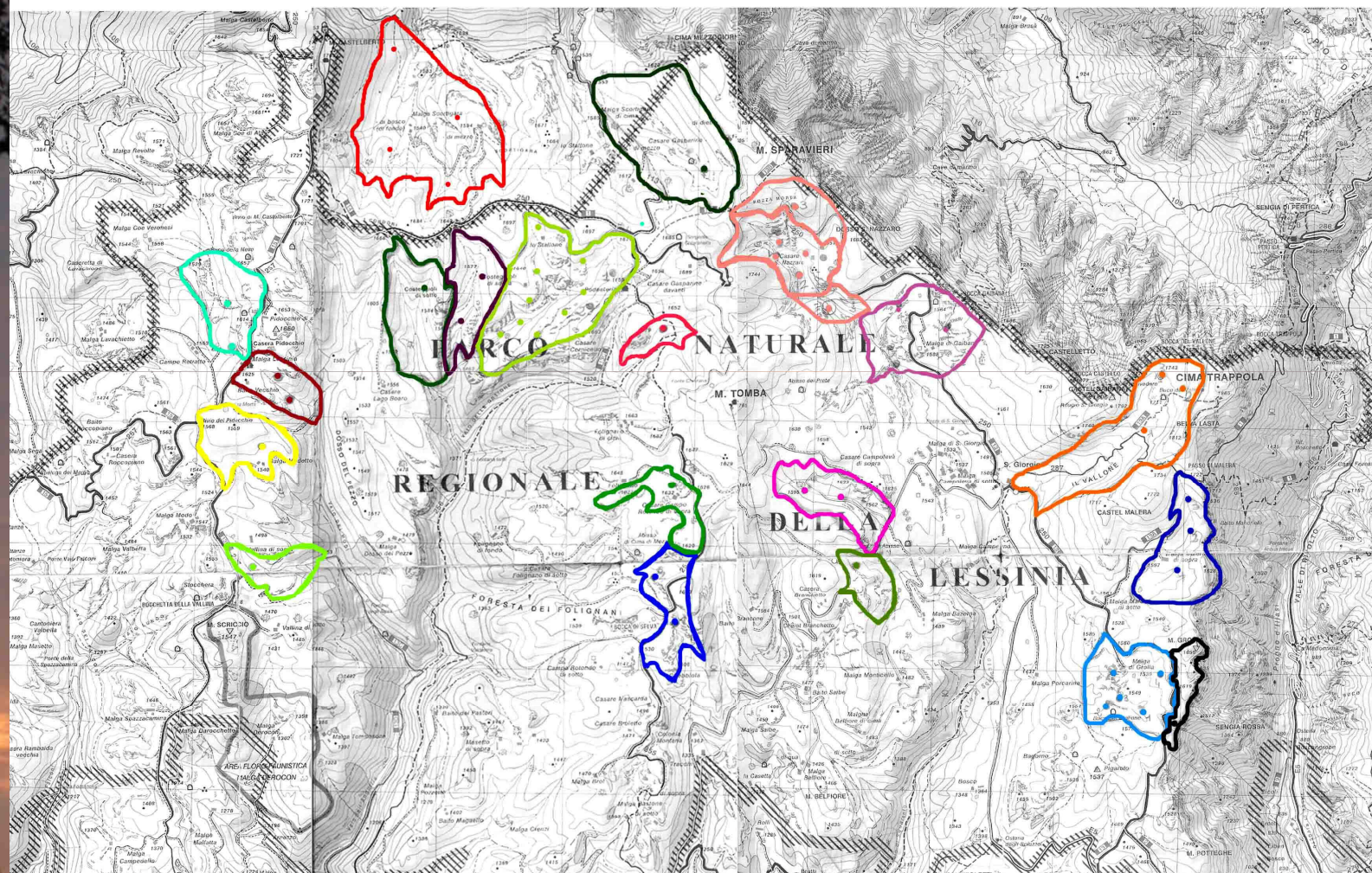
1997

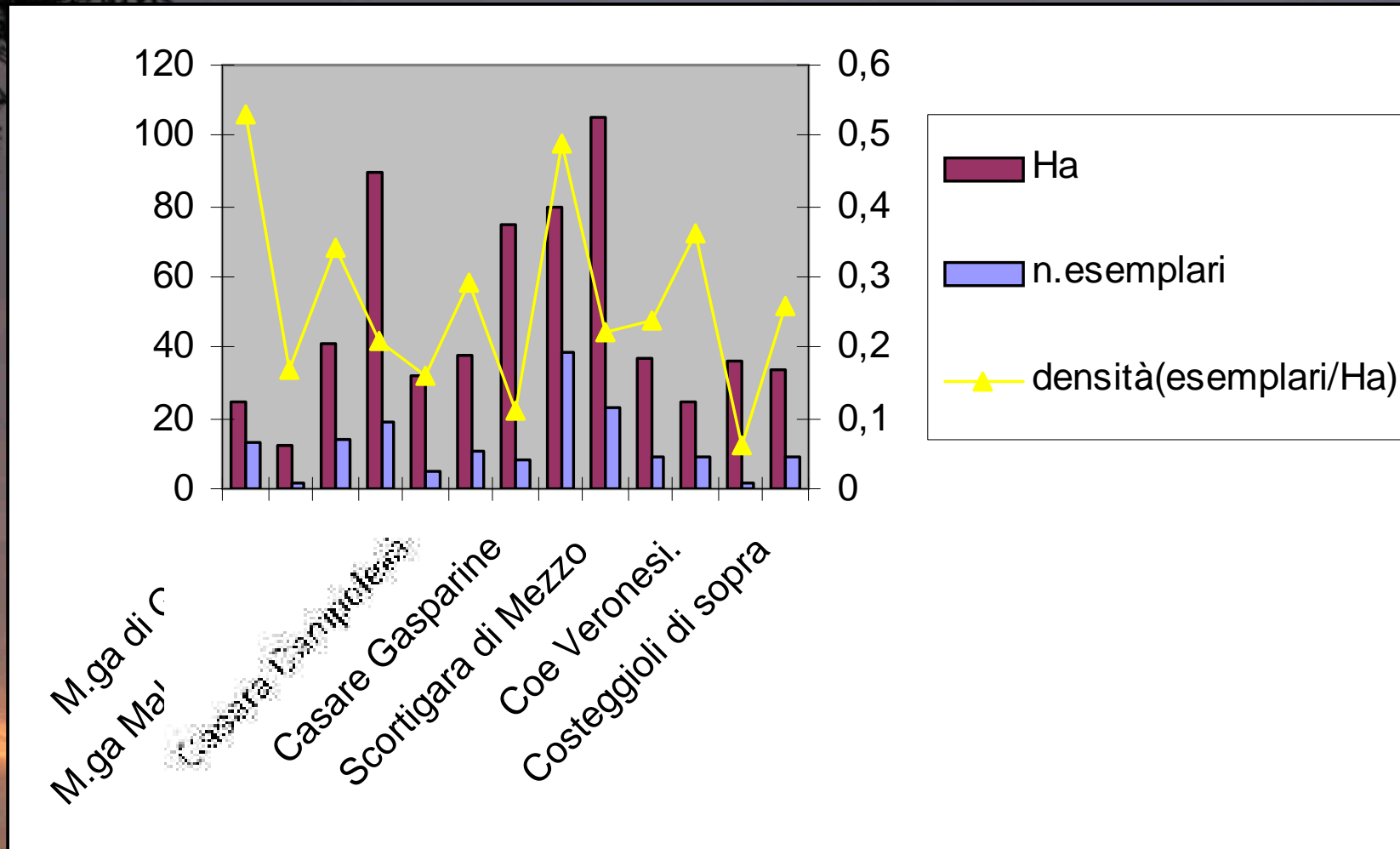


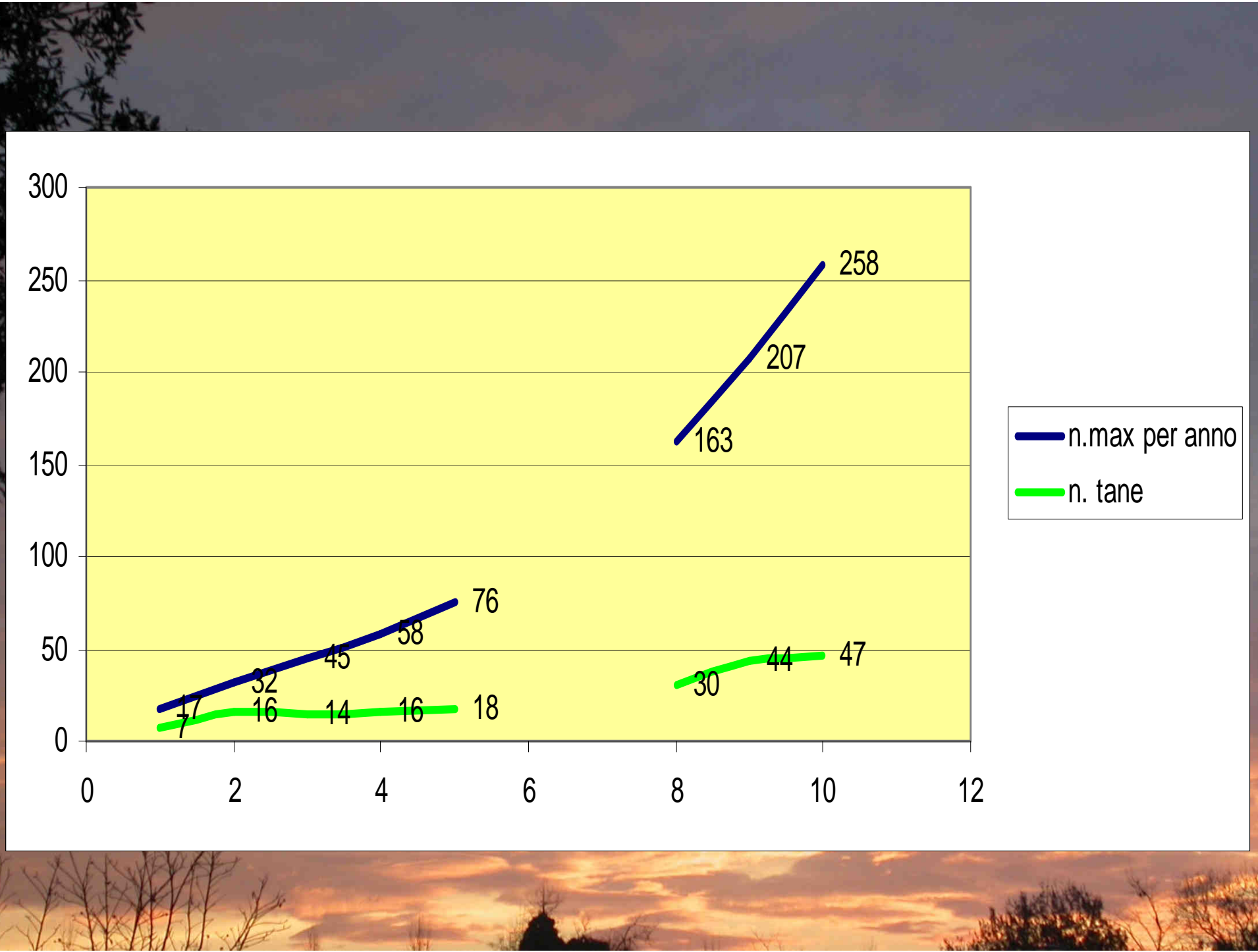
2003



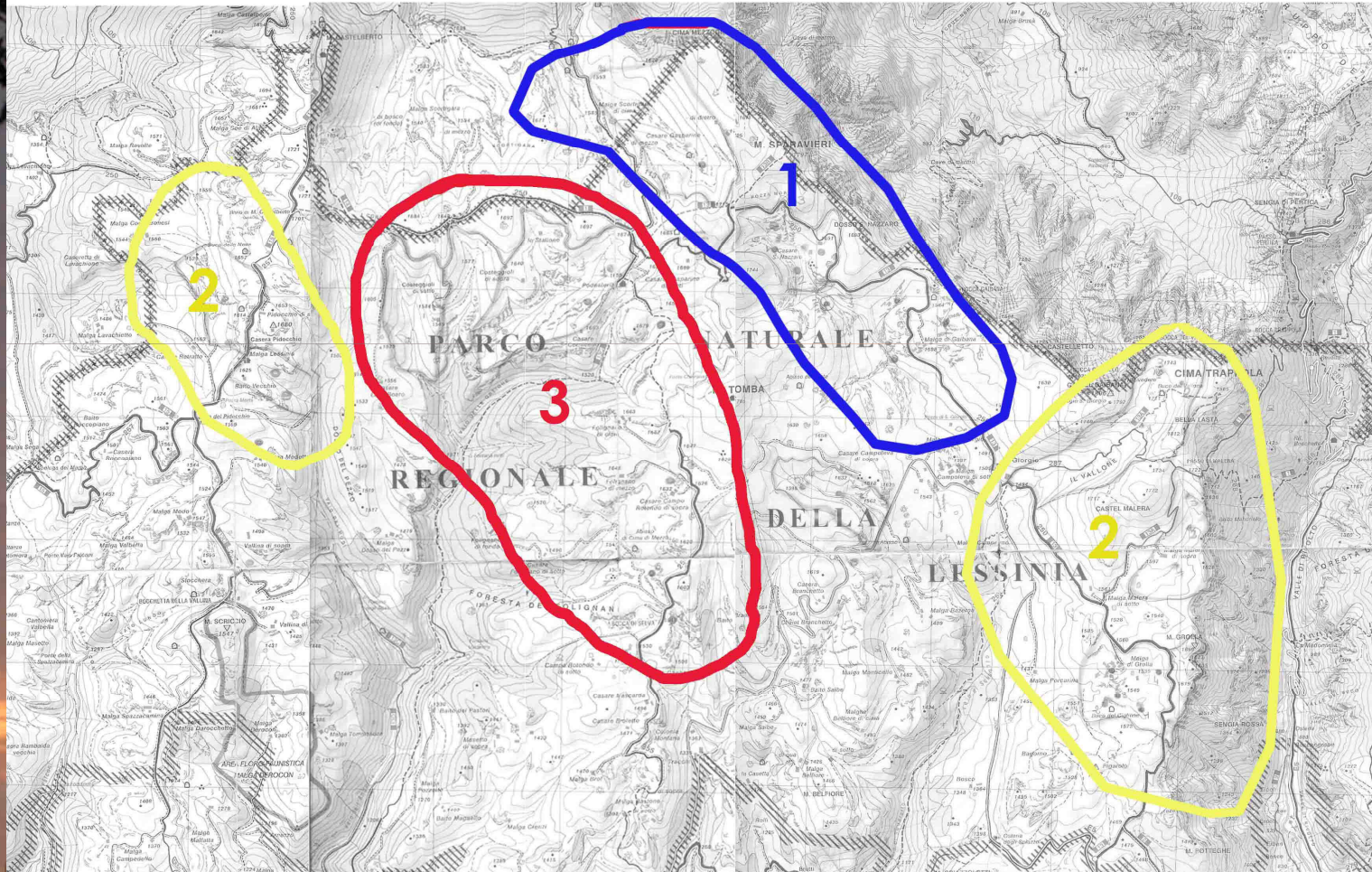
2007







Ordine cronologico inizio letargo





**Dino, Annalisa e Pam vous
remercient de votre aimable
attention!**