STATIC PRESSURE MEASUREMENTS IN SOME DOMESTIC UNGULATES MANAGED UNDER EXTENSIVE CONDITIONS

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Animal impact is everything large animals physically do to land *except* graze.

— dunging

— urinating

— rubbing,

— wallowing

— salivating

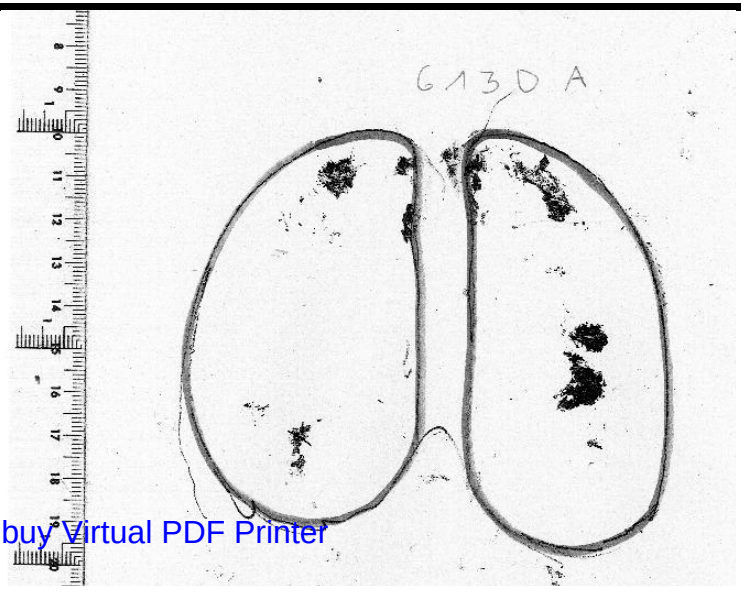
— trampling,

etc.

The goal of this research was to investigate the static trampling pressure of livestock managed under extensive conditions: goats, horses and cows.

N=81	n	BW (kg)
Bruna dels Pirineus	9	442.3
Cabra Blanca de Rasquera	14	56.6
Cavall Pirinenc Català	58	364.6

	Total hoof surface (cm^2)
Bruna dels Pirineus	281.0
Cabra Blanca de Rasquera	95.4
Cavall Pirinenc Català	512.0
	KPa
Bruna dels Pirineus	92.9
Cabra Blanca de Rasquera	57.9
Cavall Pirinenc Català	62.3

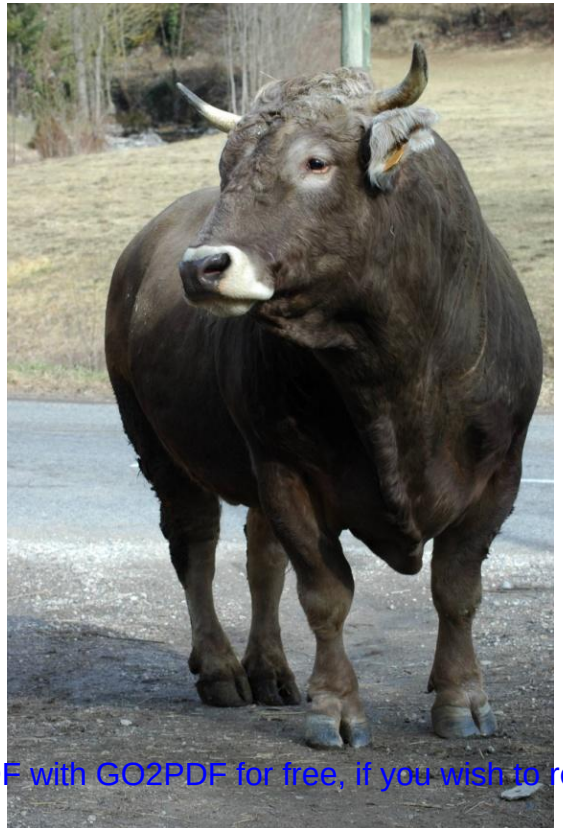


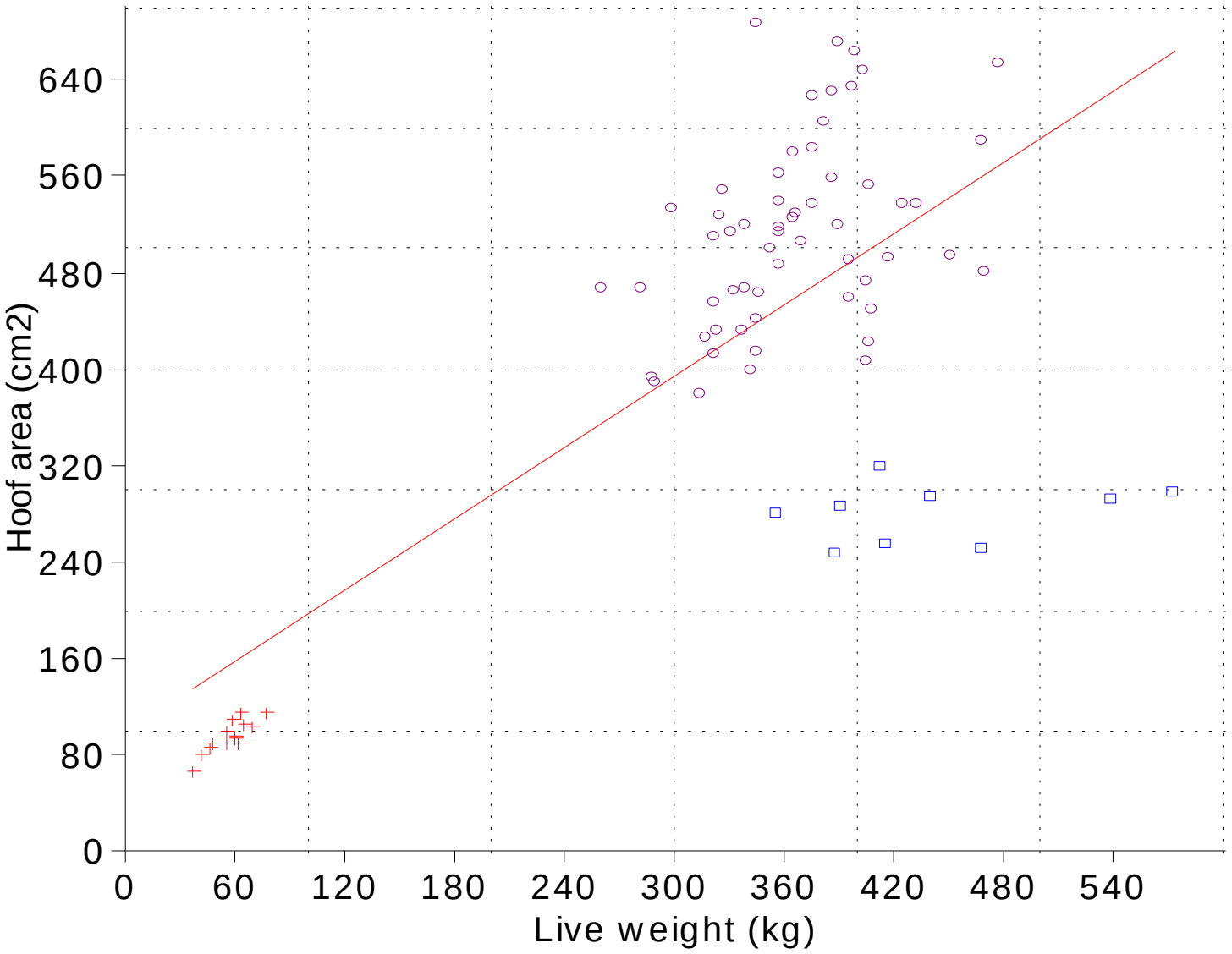
Unit-trampling index:

$\log_{10}(\text{stride length}) = 0.729 \log_{10}(\text{shoulder height}) + 0.0623$

(Cumming & Cumming, 2003)

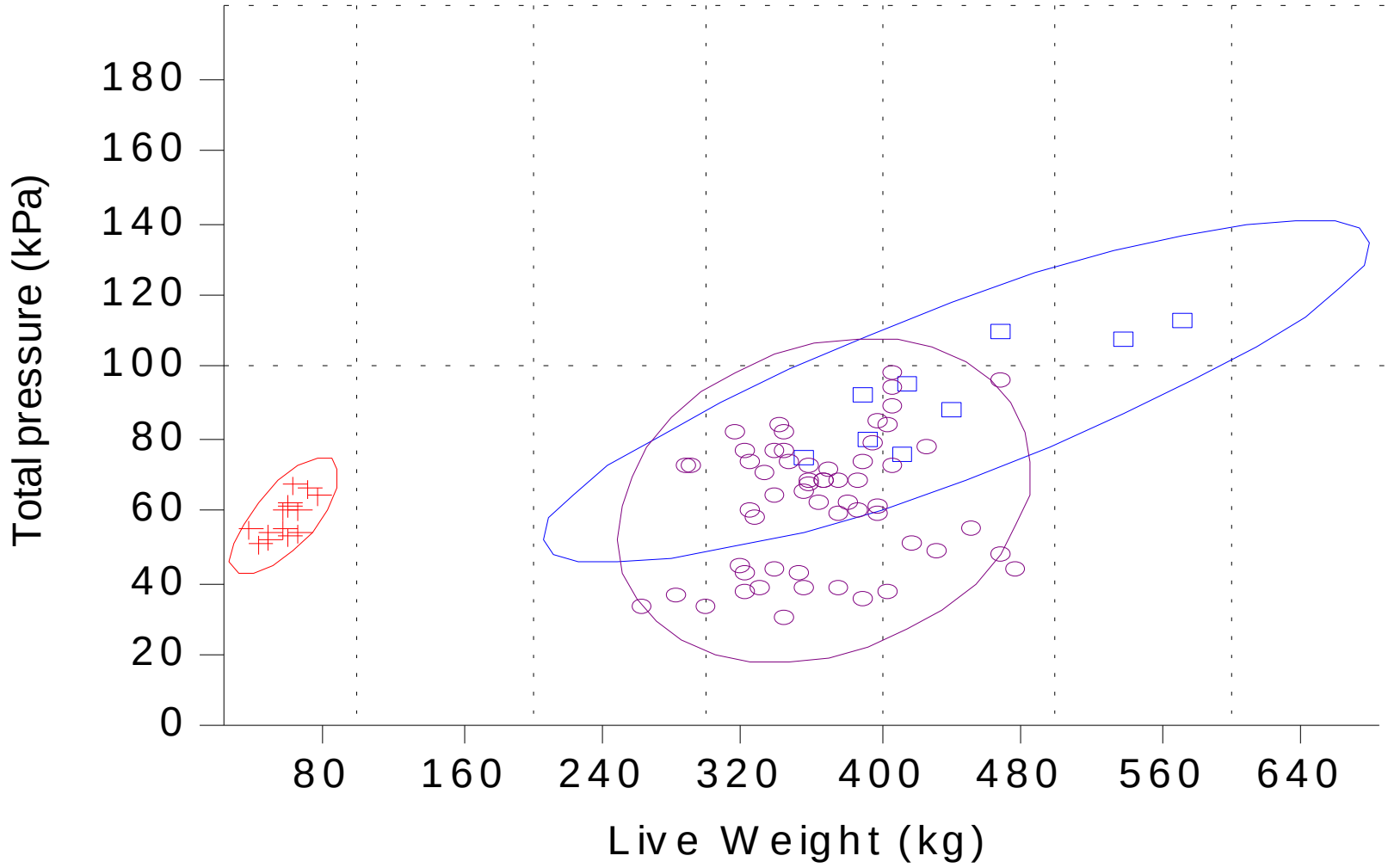
Bruna dels Pirineus	124.7
Cabra Blanca de Rasquera	69.7
Cavall Pirinenc Català	227.2



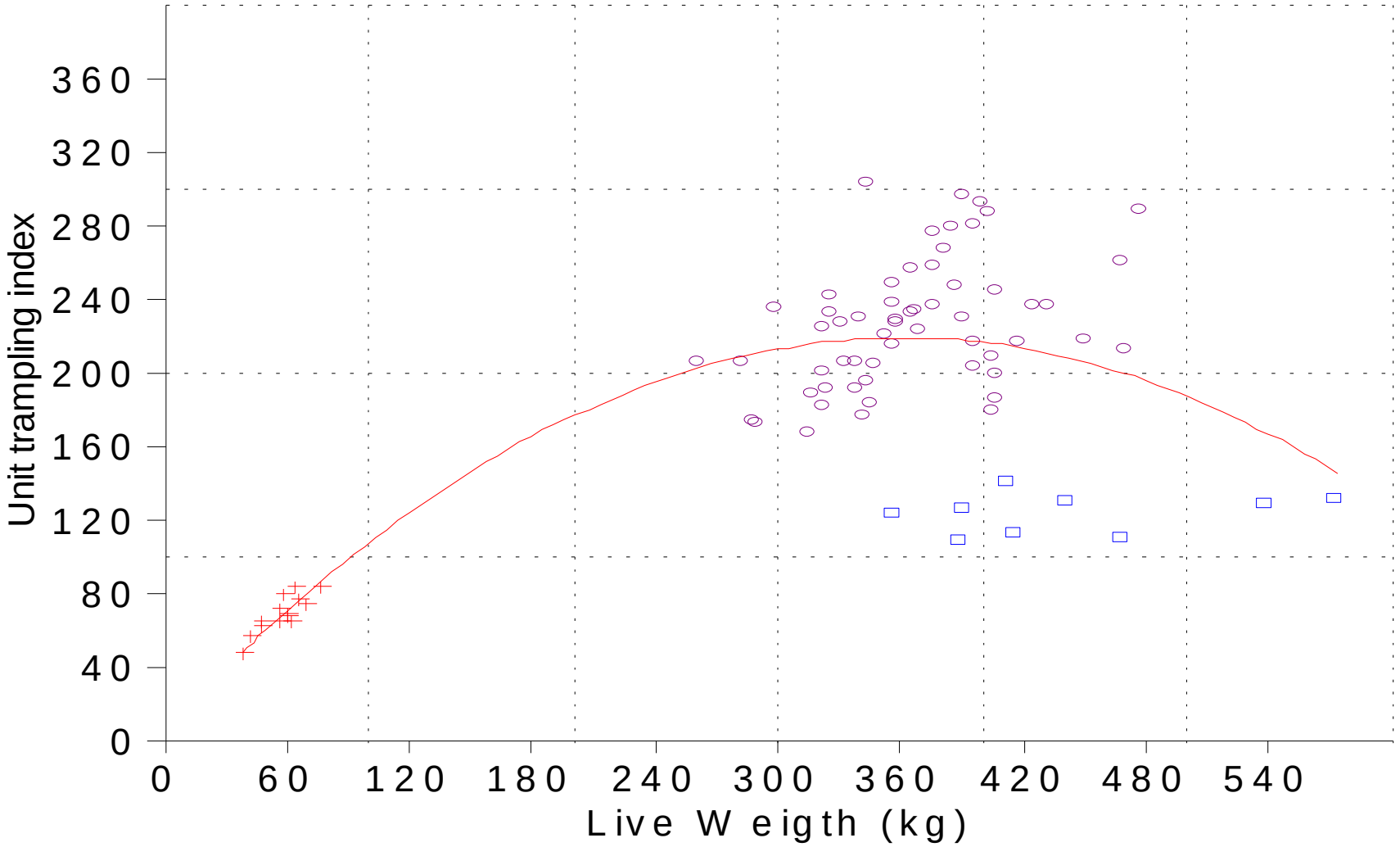


r=0.738,
p<0.0001

The surface area of the feet in contact with the ground is proportionally the same in larger ungulates than in smaller animals.



The pressure per unit area exerted on the ground by an animal standing on all four of its feet is similar for all breeds.



Large ungulates trample a greater area than small ones.

Static hoof pressure is constant over the range of body size considered here.

But the impact of different kinds of livestock communities is likely to be distinct.

We predict that, at carrying capacity, livestock communities that consist entirely of large ungulates, specially horses, are likely to result in greater trampling impacts.

Questions about:

- the different dinamogenic capacities (it can be expected different trampled areas of ground per unit distance travelled by each species)
- foraging and food intake
- dung quality and deposition rates....

are deserving of further investigation.