

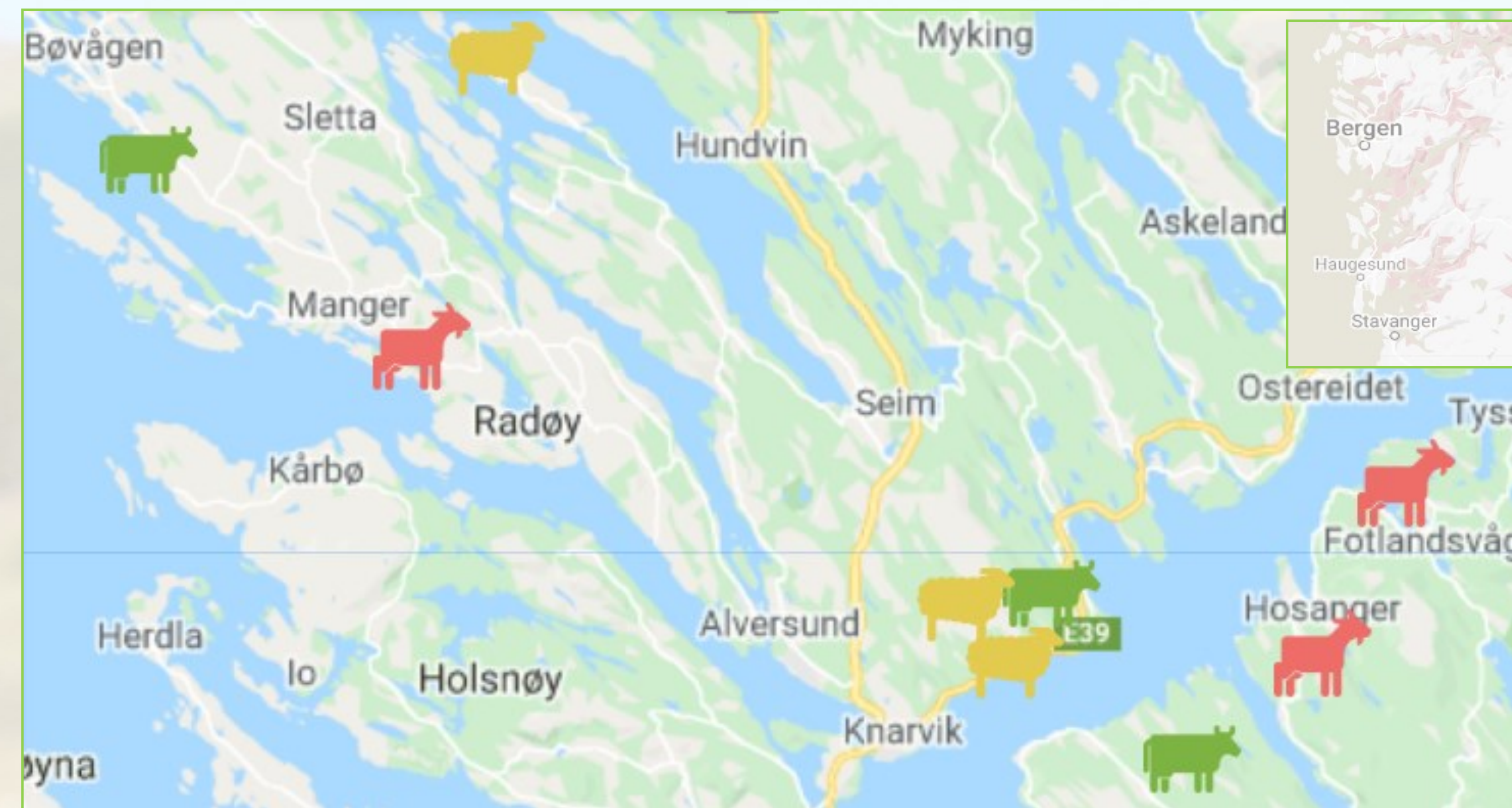
THE BEETLES AND THE BEASTS

How grazing affects the abundance and diversity of beetles

BY INGRID VAKSVIK & THE TRADMOD TEAM

WHY CARE?

- Beetles are sensitive to any changes made by natural or human induced disturbance and management
- Beetles may be a key stone indicator to distinguish the health of an ecosystem
- To provide optimal management of ecosystem services and biodiversity
- To protect these amazing creatures!



WHAT AND WHERE?

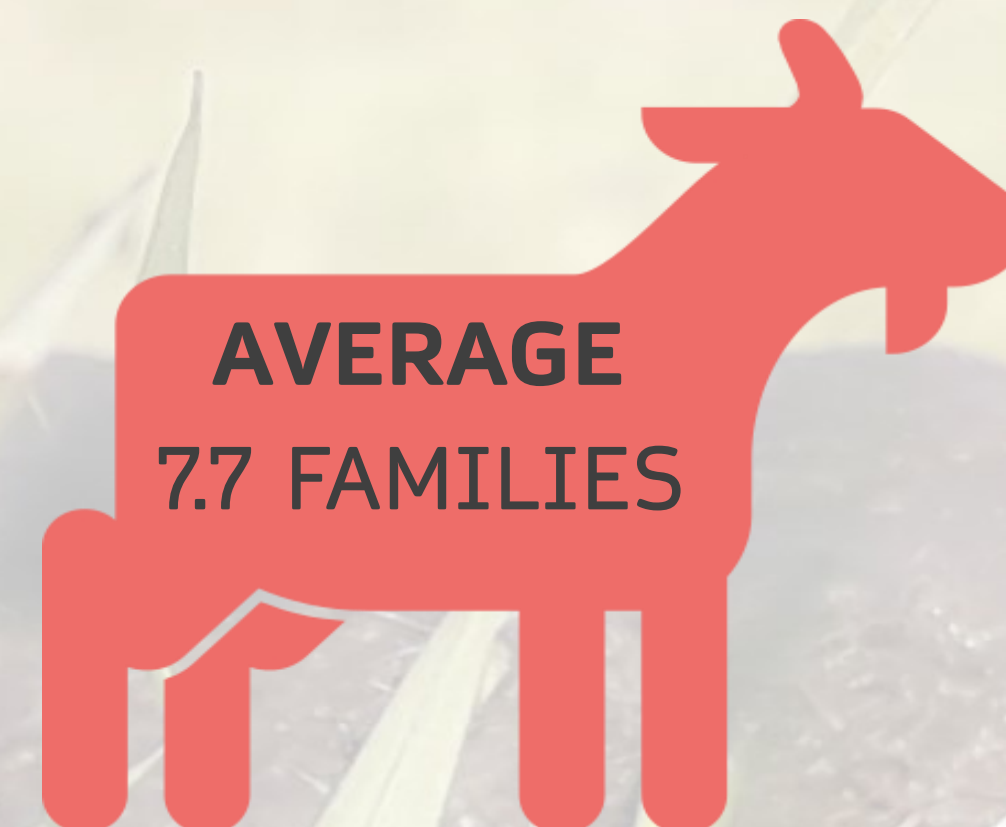
- The study is looking at the effect of grazers on beetle communities, exploring abundance and diversity. Sampling took place within the Nordhordaland biosphere reserve (shown on map). The habitat of interest was grassland in fjords - grazed by sheep, cows and goats. Beetles were collected using 12 dung baited pitfall traps, staying for one week in each site. Different families of beetles were sorted and counted in a laboratory.

The analysis is primarily based on each set of 3 sites per. type of grazer.

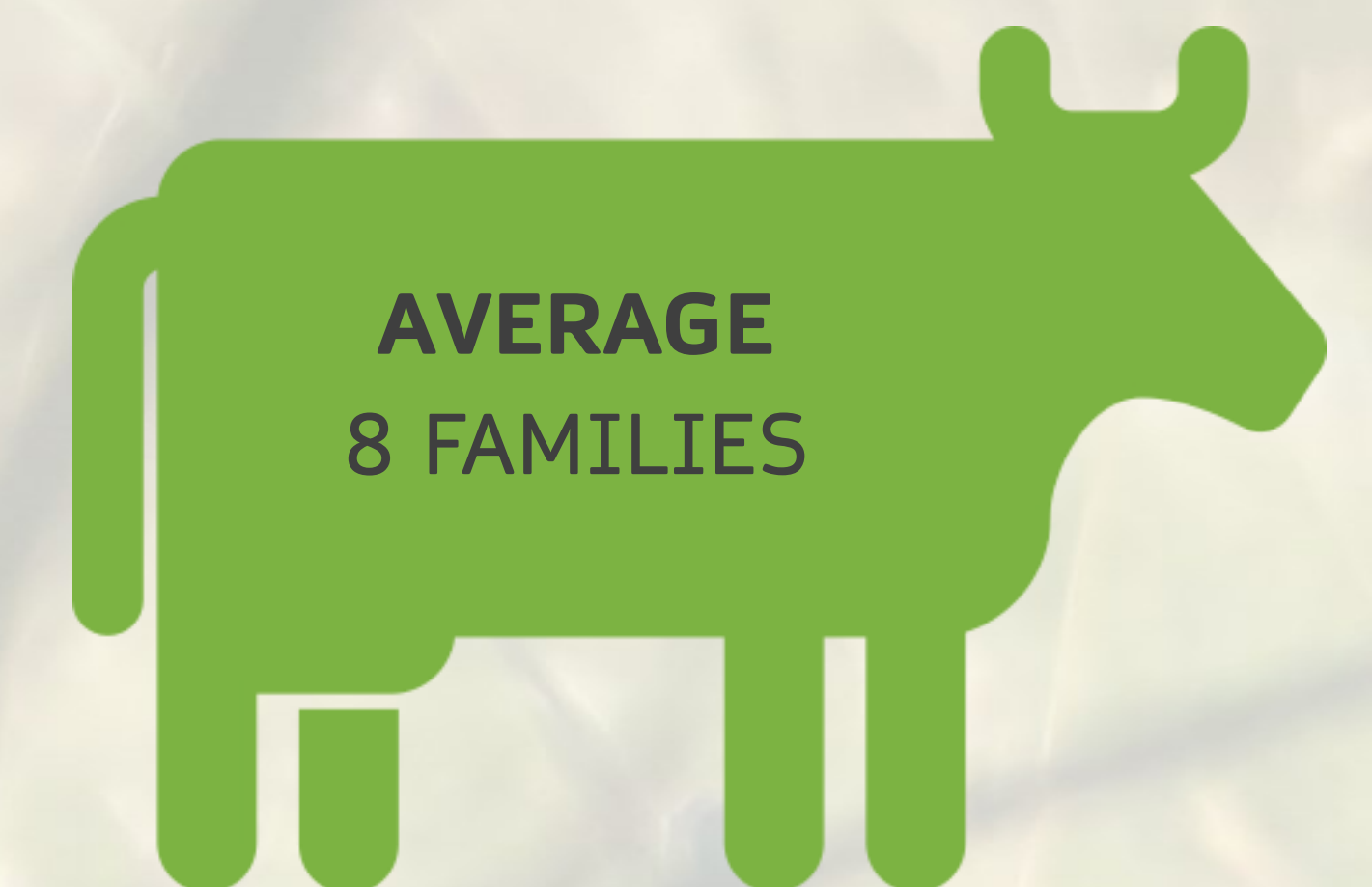
AVERAGE
7 FAMILIES



AVERAGE
7.7 FAMILIES



AVERAGE
8 FAMILIES



BEETLE DISTRIBUTION

Abundance (Fig 1.)

- Highest in sites grazed by sheep
- Lowest in sites grazed by goats
- Sites close to the coast w/ higher abundance in total
- Sites close to the coast w/ higher abundance per. fam.

Diversity (grazer shapes)

- Lowest in sites grazed by sheep (seemingly)
- Highest in sites grazed by cows (seemingly)

ABUNDANCE OF BEETLES IN MAIN FAMILIES

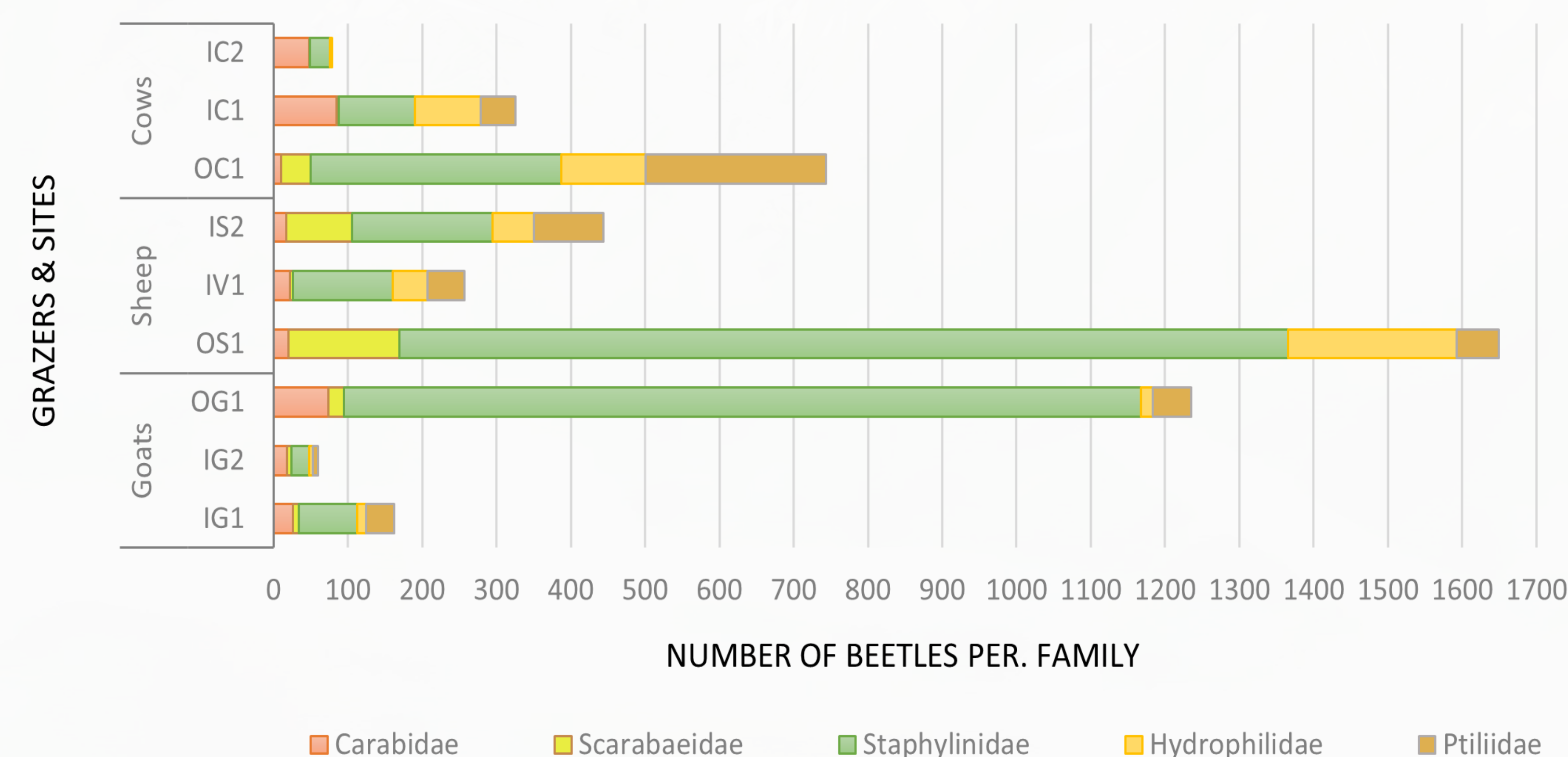


Fig 1. shows the total number of beetles in each main family, ranged per. site and grouped by type of grazer.

TAKE- AWAY MESSAGE

Grazing plays a key role in the pattern between diversity and abundance. But the interpretation is different between the two. Some sites have opposite patterns while most sites do not. Geography also plays an important role for the results.

Less intense grazing seems to lead toward high diversity of beetles, which may indicate an ecosystem in good shape!

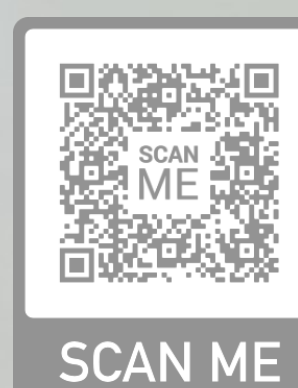


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Photo Coleoptera/ Staphylinidae: https://stock.adobe.com/no/images/id/278263238?as_campaign=Freepik&as_content=api&as_audience=404&as_camtype=test-bannerbigger-b&tduid=2c040b476f5f2c70736ff4eb54509a0d&as_channel=affiliate&as_campclass=redirect&as_source=arvato

Photo of poo: https://grid.gograph.com/dung-poo-with-magnifying-glass-stock-illustration_gg122124789.jpg
Shapes of cow, sheep, and goat by Linn Voldstad
Background image by Amy Eycott