Analysis of the Reproductive Performance in Swedish Breeding Cats

These results come from a questionnaire study aimed at describing the situation in Swedish breeding catteries regarding management, prevalence of infectious diseases and reproductive performance.
It was performed in 2001 in collaboration with the Swedish Cat Association and approximately half (n=265) of the active registered breeders responded.
As part of this study, reproductive performance, based on ≈670 litters, was described and further investigated by analysing these four outcomes using different regression models:

Photo: Anna Thunblom

Litter size, linear regression
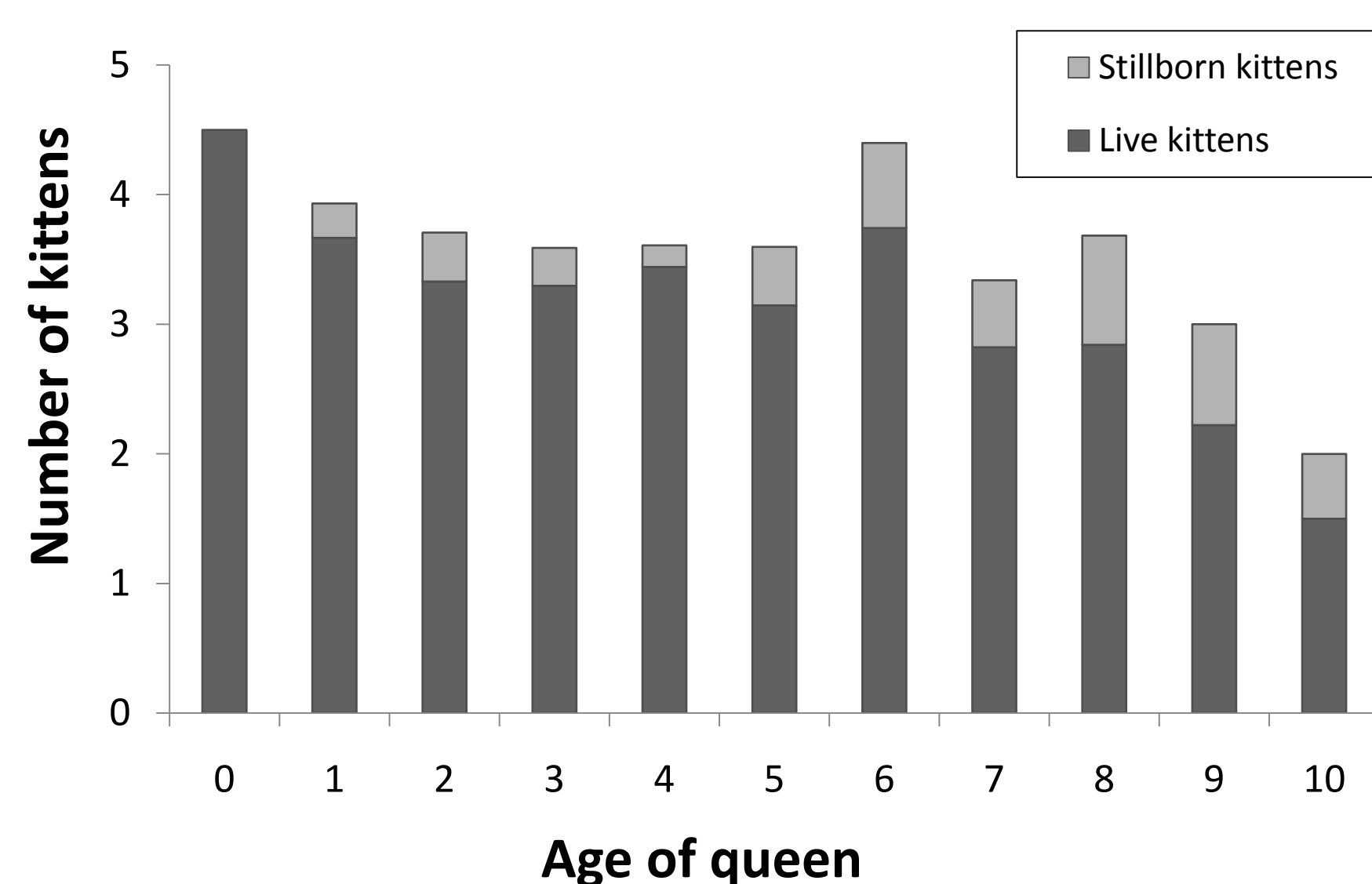
> Litter size seemed to decrease with age.

Based on this material, older cats seemed to have smaller litters. However, the only covariate significantly associated with litter size was breed (*p*=0.000).
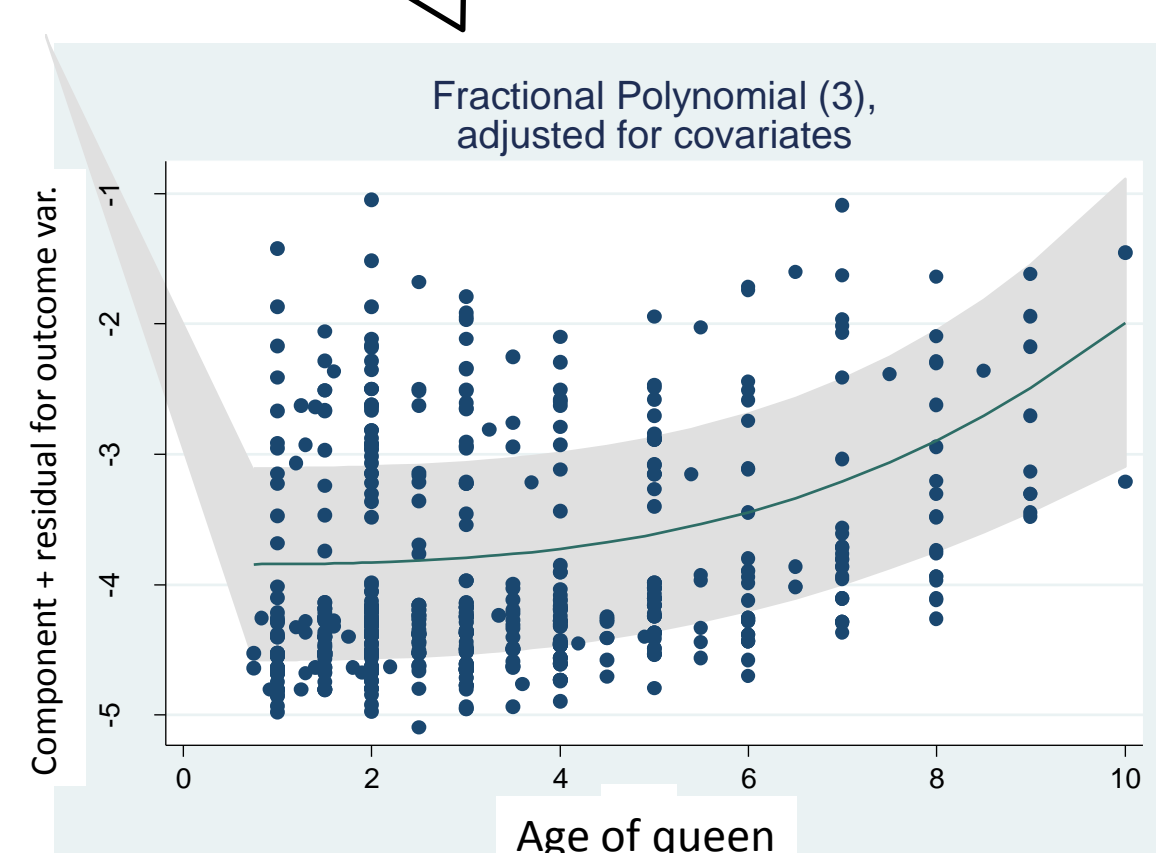
Dystocia, logistic regression

Dystocia was more frequent in litters of very small (1 kitten) or large sizes. Dystocia was also associated with presence of dead kittens in the litter (OR=3.7), and delivery during winter (OR=2.2).
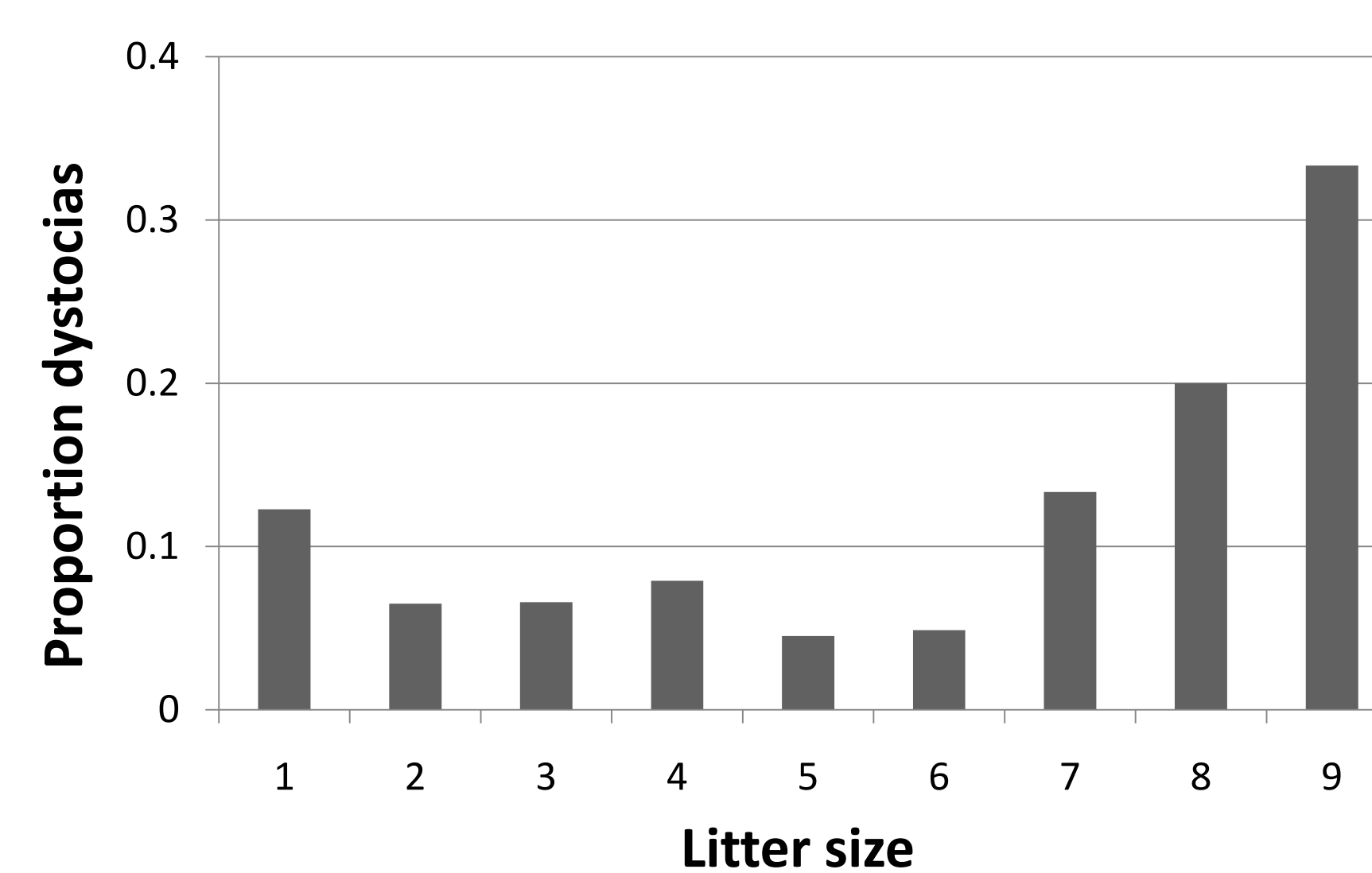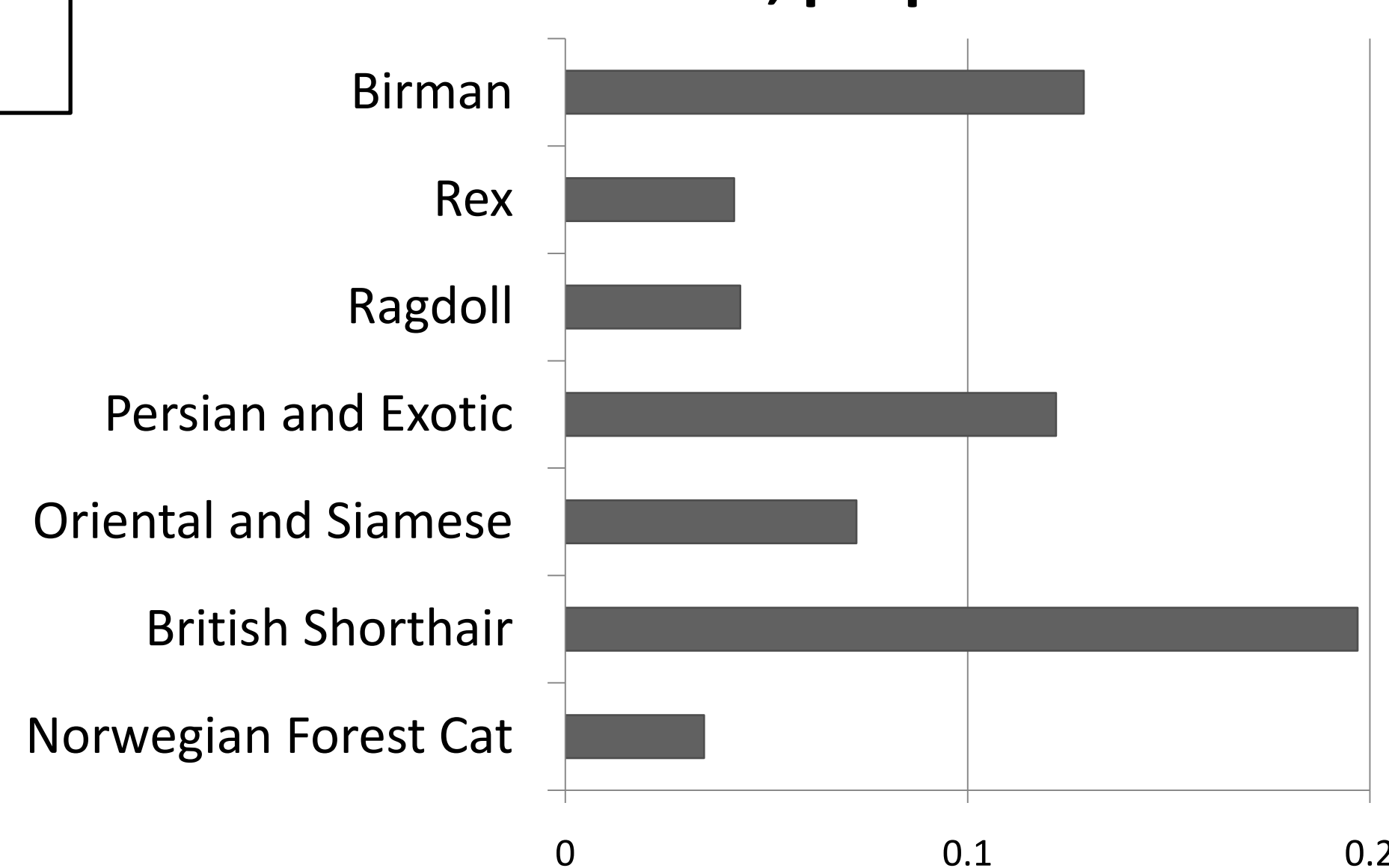

> There were more cases of dystocia during winter.

Stillbirth, negative binomial regression

> Older queens had more stillbirths.

Stillborn kittens, proportion

The outcome of this model was number of stillborn kittens in each litter and the exposure variable was litter size at birth. Breed, age of the queen and litter size were the significant covariates included in the final model.

Because data could be assumed to be clustered (i.e. litters within catteries), possible cluster effects were adjusted for by applying robust standard errors (option "cluster" in Stata 9).

Kitten mortality week 1-12, negative binomial regression

Higher incidence of kitten mortality was associated with increasing litter size. In addition, a queen being <1 year and the litter being artificially delivered, both increased kitten mortality (IRR=5.8 and 2.3, respectively).

Mortality also differed significantly between breeds.

> Kitten mortality did not increase with age of the queen.

Cumulative proportions of kittens dying
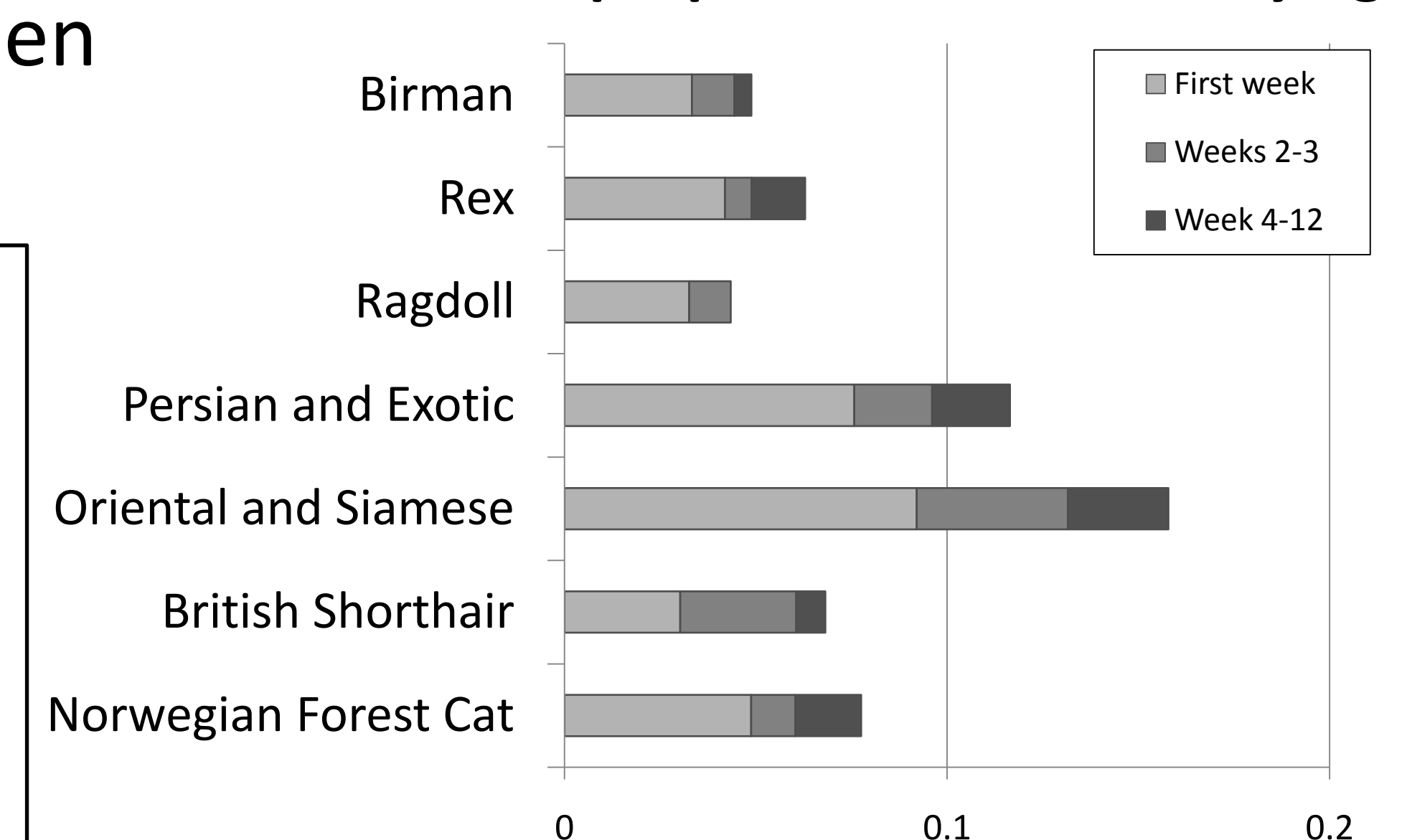
Jenny Frössling, DVM PhD (*in picture*)
Department of Disease Control and Biosecurity
National Veterinary Institute (SVA)
Uppsala, Sweden
jenny.frossling@sva.se

Bodil Ström Holst, DVM PhD Dipl ECAR
* Dep. of Animal Health and Antimicrobial Resistance
  National Veterinary Institute (SVA)
* Department of Clinical Sciences
  Swedish University of Agricultural Sciences
  Uppsala, Sweden.

STATENS VETERINÄRMEDICINSKA ANSTALT