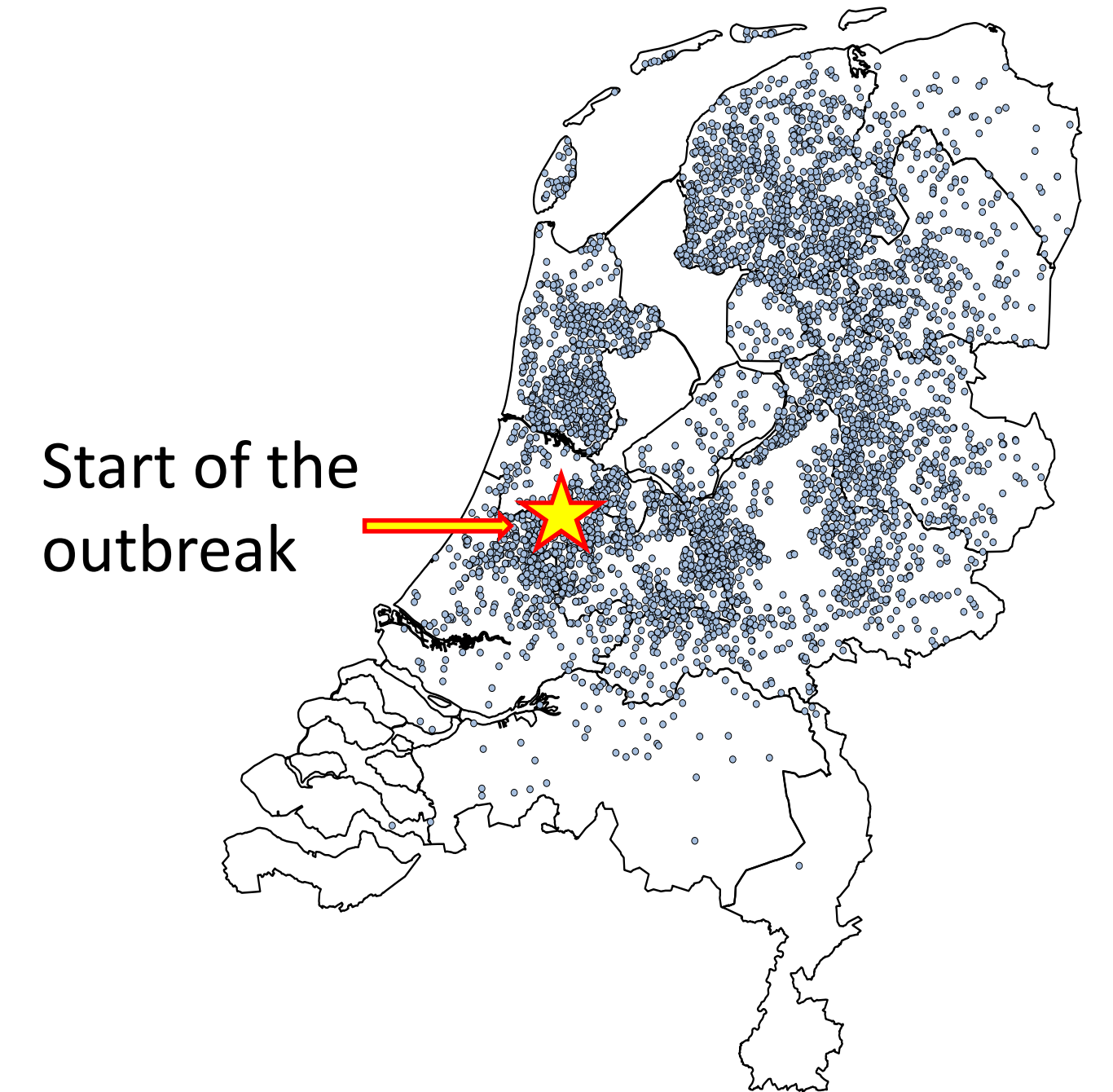


Impact of the Bluetongue serotype 3 outbreak in the Netherlands in 2023

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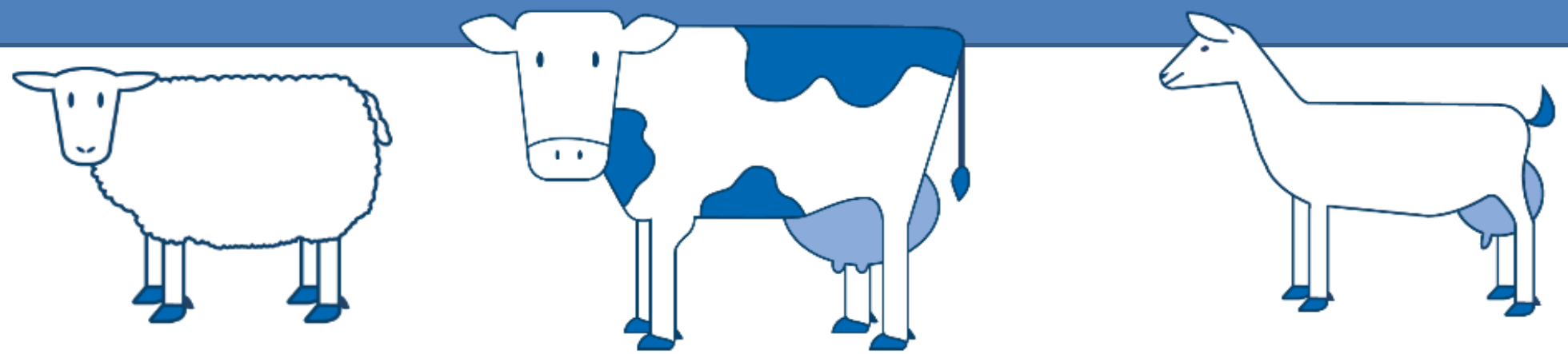
BTV-3 notifications



The outbreak

- On 3 September 2023, the first four BTV-3 infected sheep flocks were detected
- During 2023 >5,000 livestock farmers notified BTV-3 to the authorities
- Farmers reported high morbidity, mortality and a major loss in milk production
- Current antibody evaluation indicate a low seroprevalence in the ruminant population after 2023

Aim: quantify the impact of BTV-3 in 2023



Available data

- Sheep, goat and cattle census data
- From 2020 until the end of 2023
- **Data:** - I&R: on and off-farm movements, including mortality
- **Notification data:** date, location, species, PCR positive result
- **Dairy industry:** milk production data on a daily basis (cattle only)

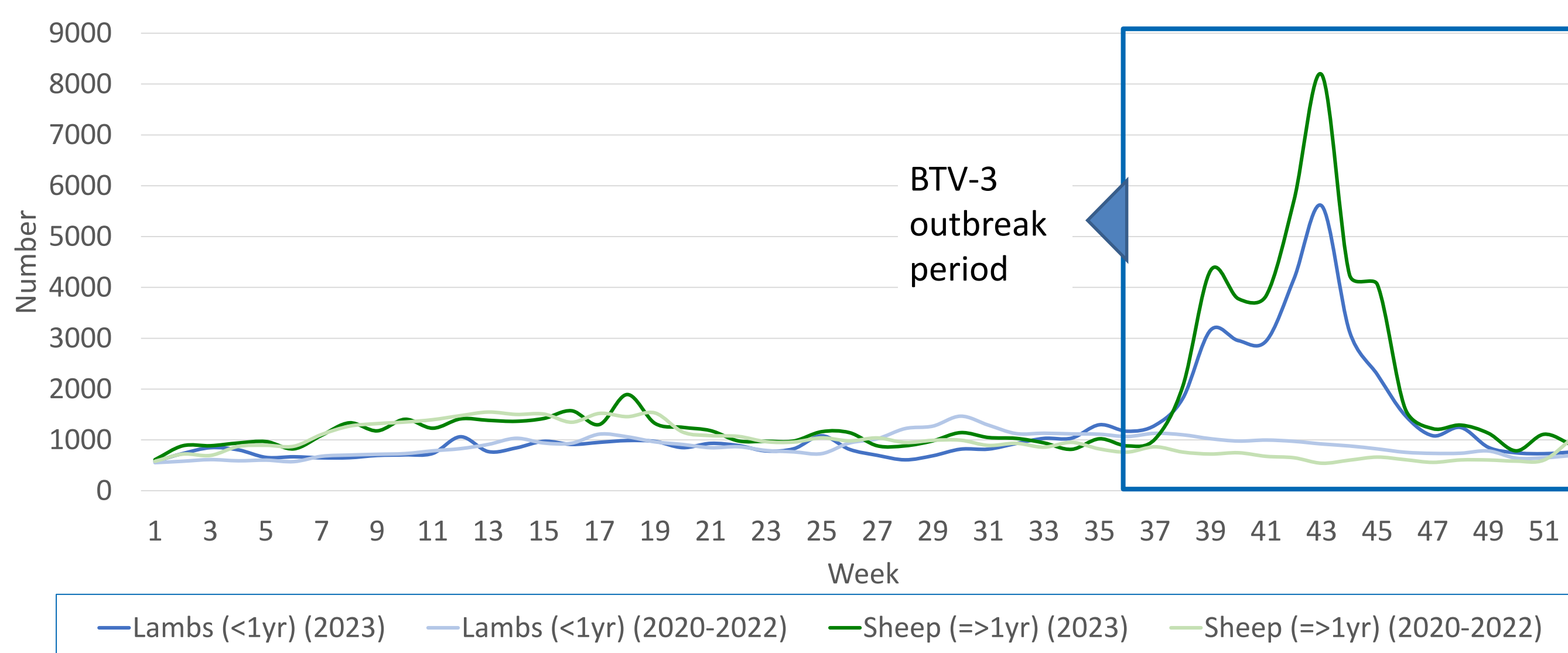
Impact sheep & goats

BTV-3: 55,157 extra dead sheep (5% of sheep population)

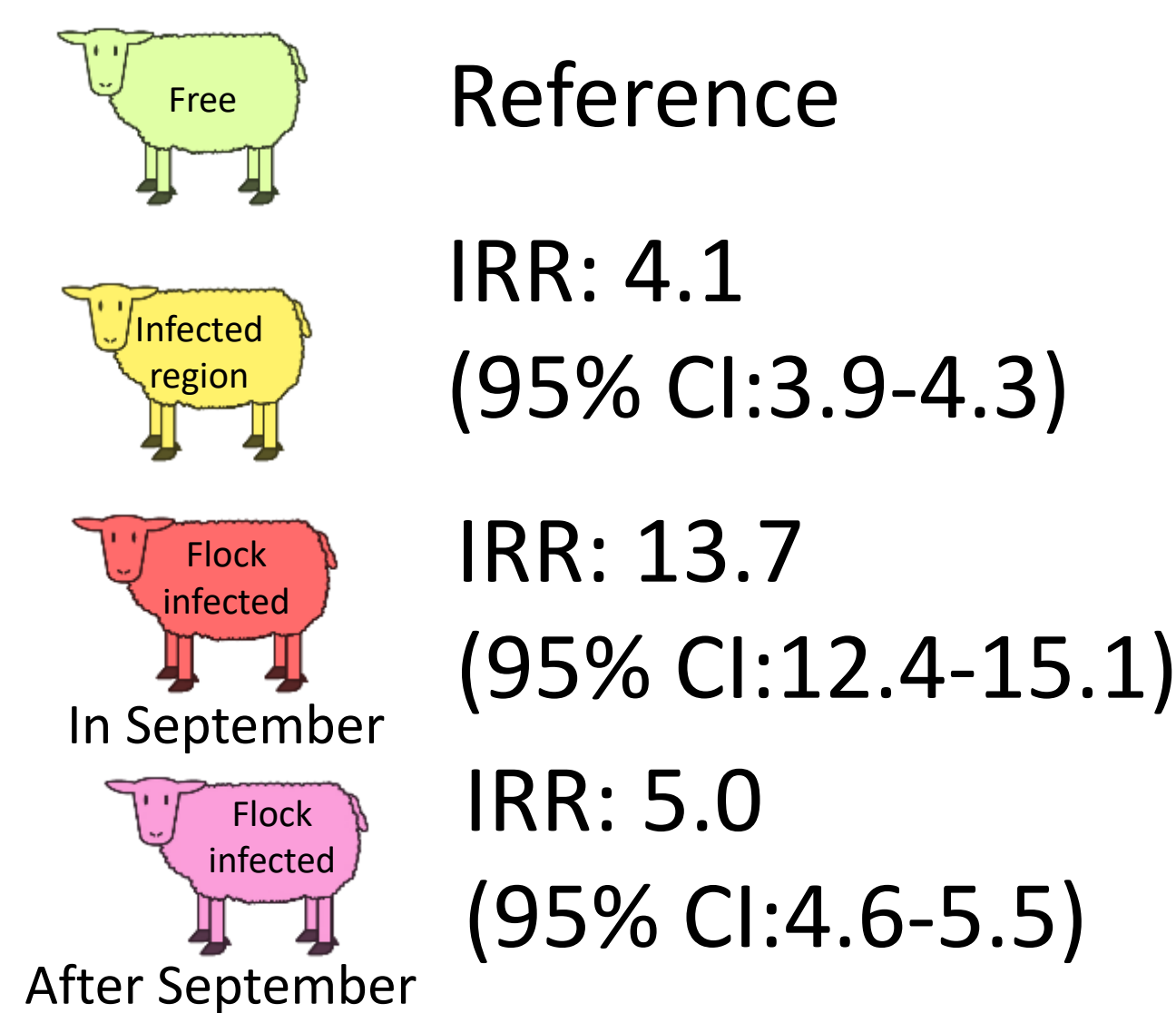
BTV-3: 4,271 extra dead goats (0.7% of goat population)

- Multivariate multilevel PA regression model with a negative binomial distribution and log link function
- Dependent variable: sheep (>1yr) or goat (>1yr) mortality
- Corrected for BTV-3 status, herd size, herd type, season and year
- Significant higher mortality due to BTV-3 in both sheep and goats

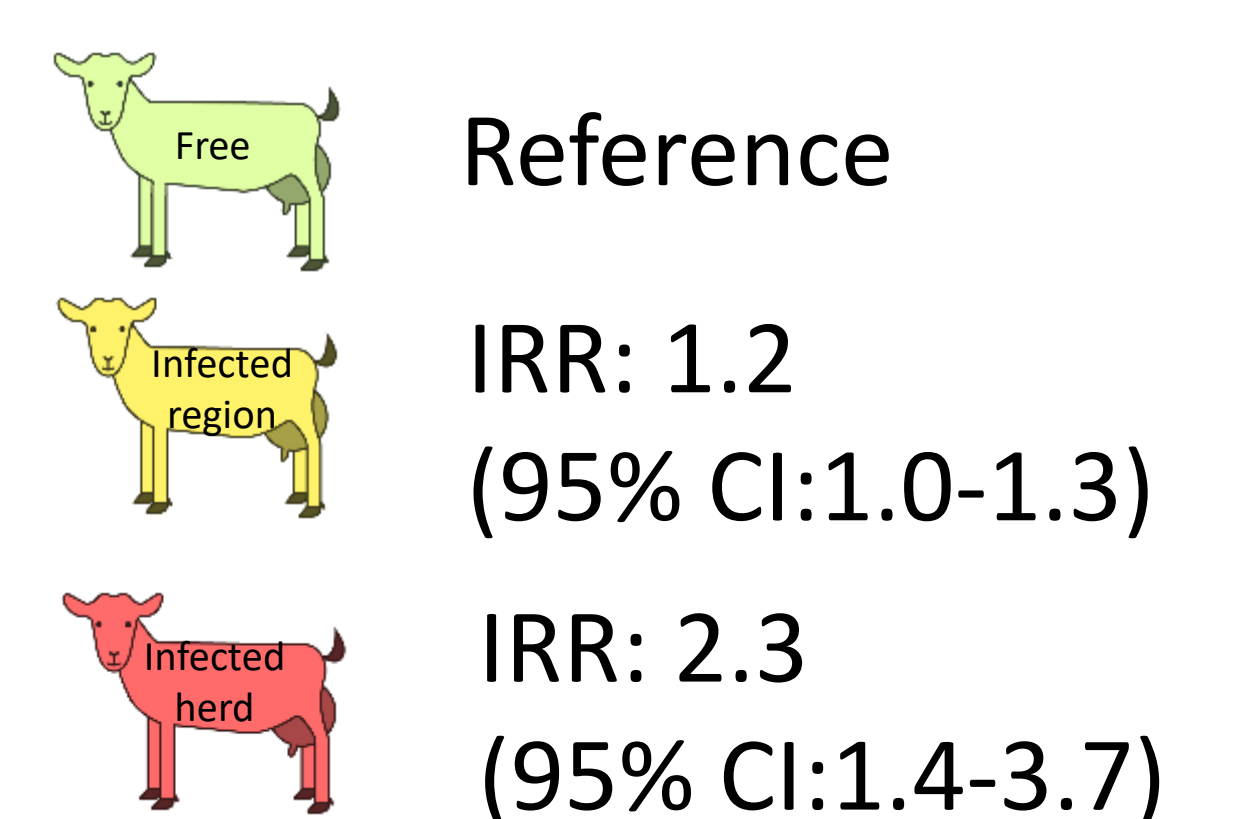
Number of dead sheep per week



Sheep mortality



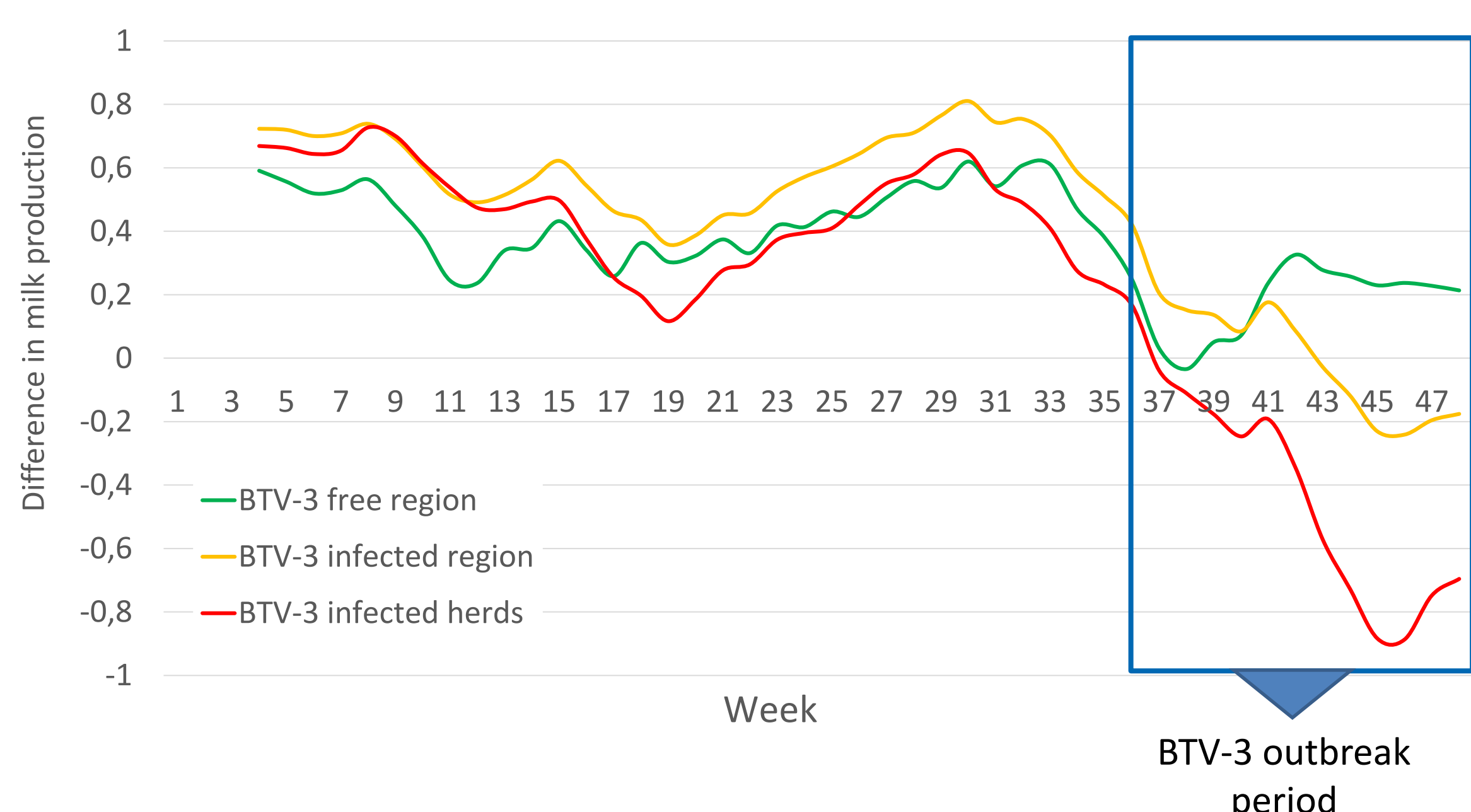
Goat mortality



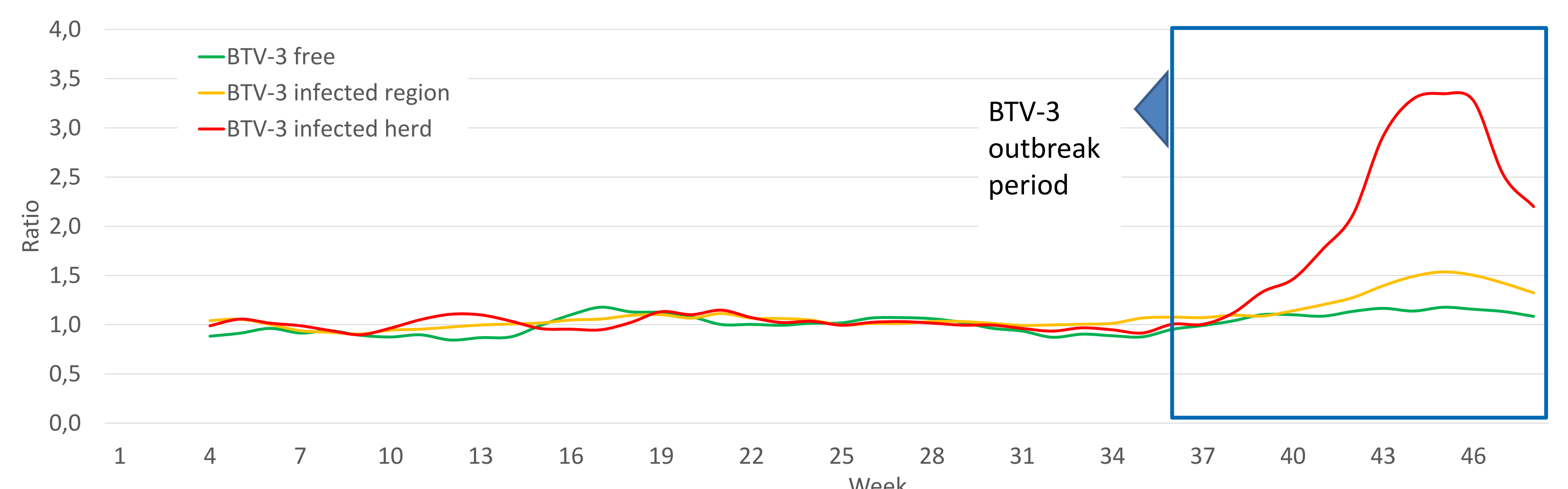
Impact cattle

BTV-3: ~4,000 extra dead cattle (~0,2% of cattle population)

Difference in milk production (kg/cow/d): 2023 vs 2020-2022



Ratio of 4-weekly moving average cattle mortality (>2 year) in dairy herds in 2023 compared to 2020-2022



- Clear increase in mortality & decrease in milk production
- Impact on mortality and milk production lasts for at least 2 months in infected herds
- Multivariable models are currently being analysed

Conclusion

- There was a major impact of in the Netherlands in 2023 and **the impact of BTV-3 in 2024 is expected to be much higher**
- **Vaccination seems to be the only possible measure to protect the susceptible population.**

