Can sheep learn the virtual fencing system NoFence?

Photo: Oscar H. Berntsen

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Rangeland sheep production in Norway

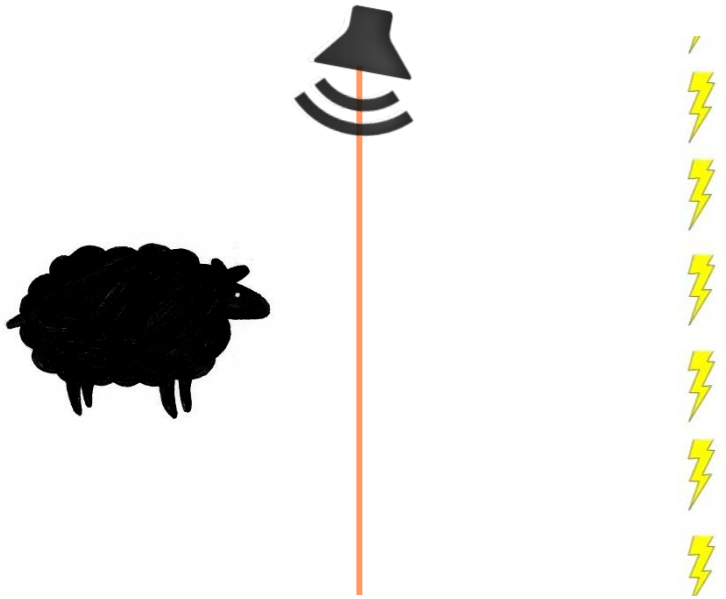
- > 2.1 million on rangeland pastures
- Feeding resource and keeping landscape open
- 6% of sheep and lamb lost due to predators and disease
- Supervision once/week

Photo: Kari Grøva

Photo: Heine Schjølberg

NoFence

- GPS based
- Sound signal
- Shock



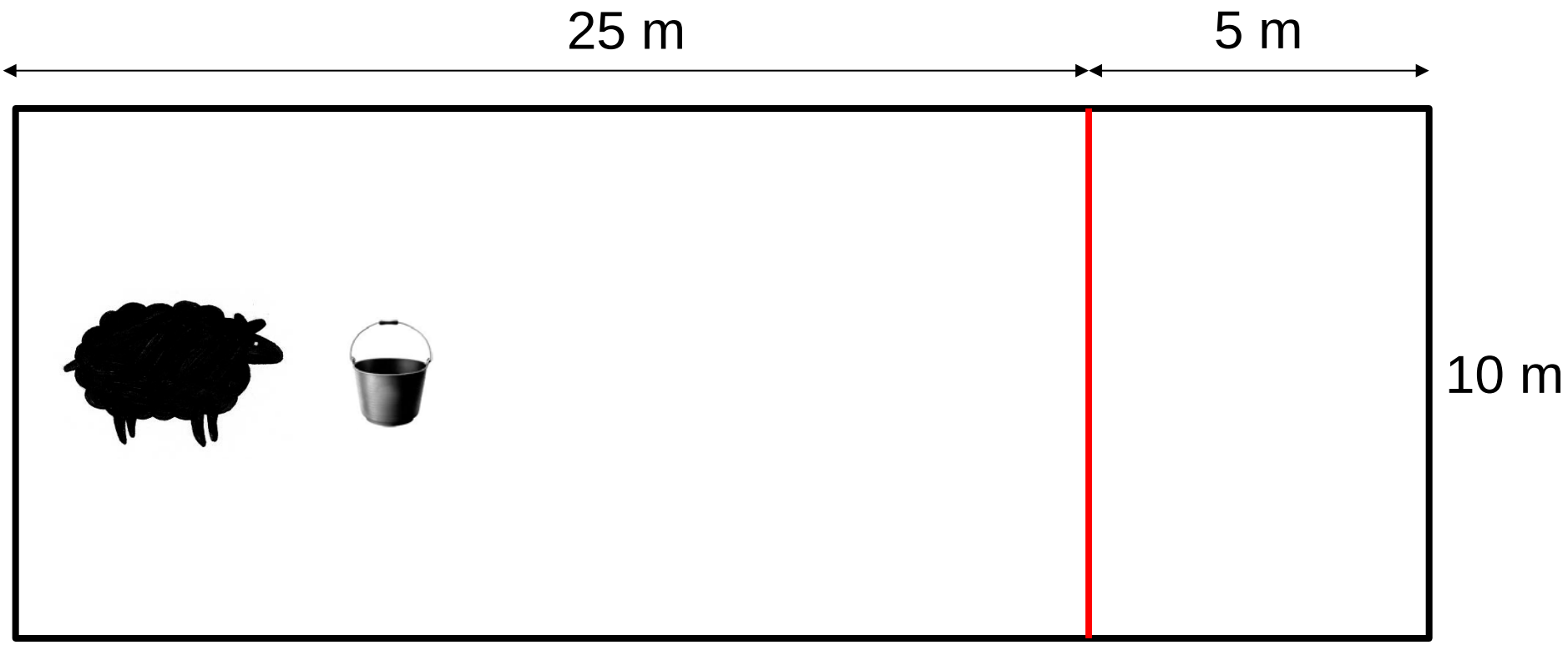
NoFence

Overall aim: How do NoFence affect stress & sheep welfare

Study aim: Can the animals learn the system receiving a minimum number of shocks?

Photo: Oscar H. Berntsen.

Experiment 1



Experiment 1

Results

- Technical problems – 24 sheep with working collars
- 8 sheep removed (stress (N=5); reaction (N=3))
- 9 of 16 (56%) reached the learning criteria

Conclusions

- Few animals learned the system quickly
- Situation or learning ability?
- Large variation in reaction

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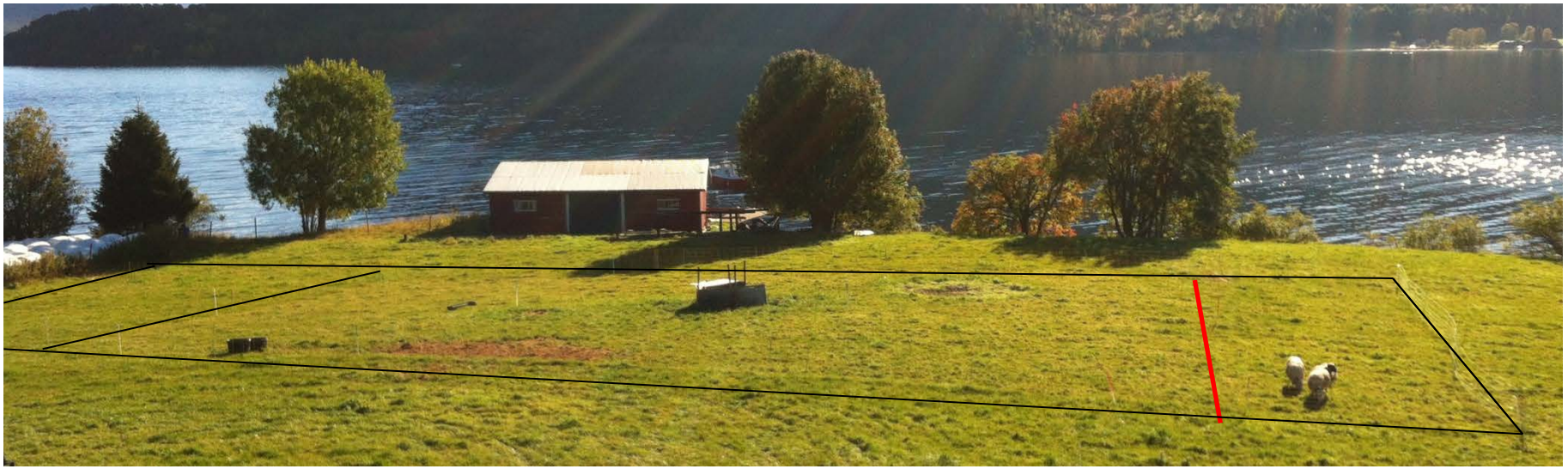
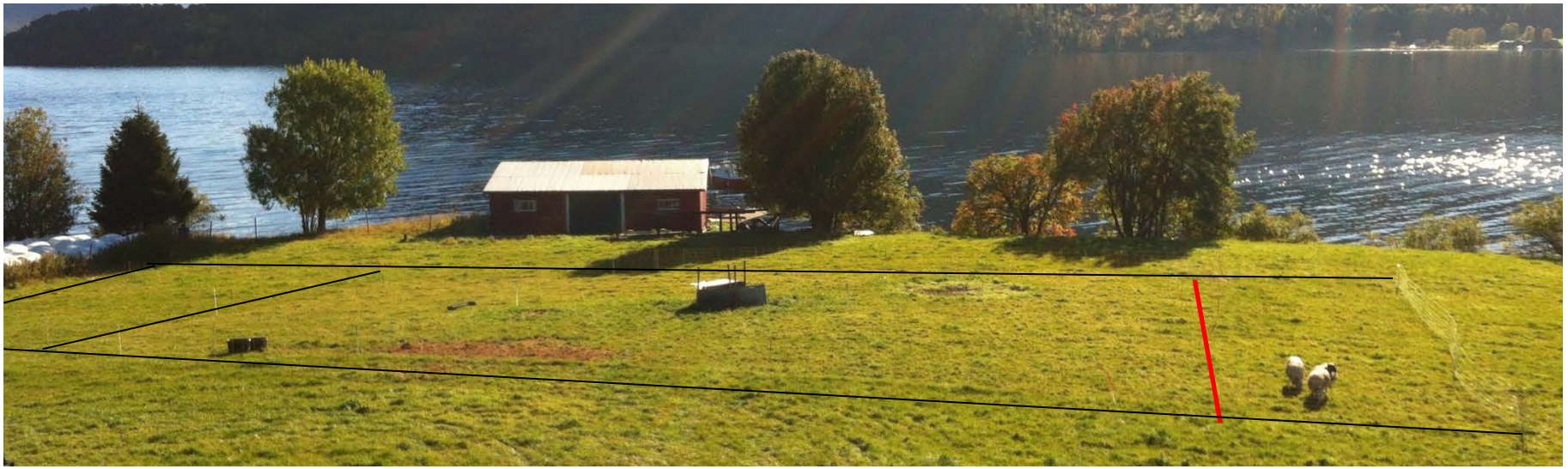
Methods – Experiment 2



Day 1-2:
NoFence with physical fence
Learning criteria Day 2:
Max 1 shock

Methods – Experiment 2



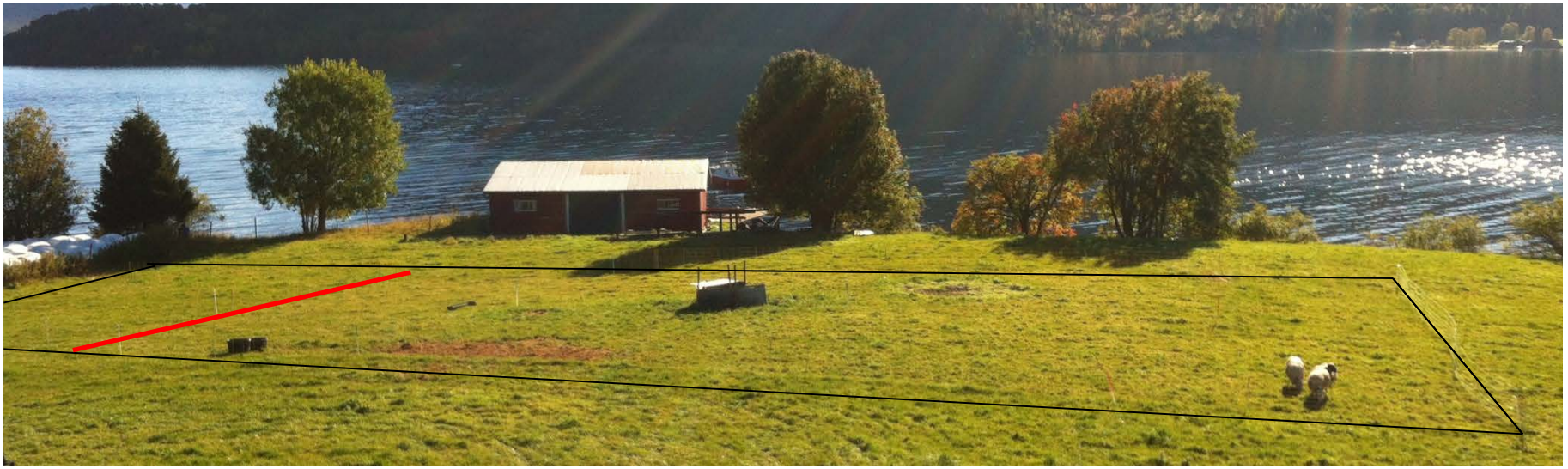
Day 3:

NoFence without physical fence

Learning criteria Day 3:

Max 1 shock

Methods – Experiment 2



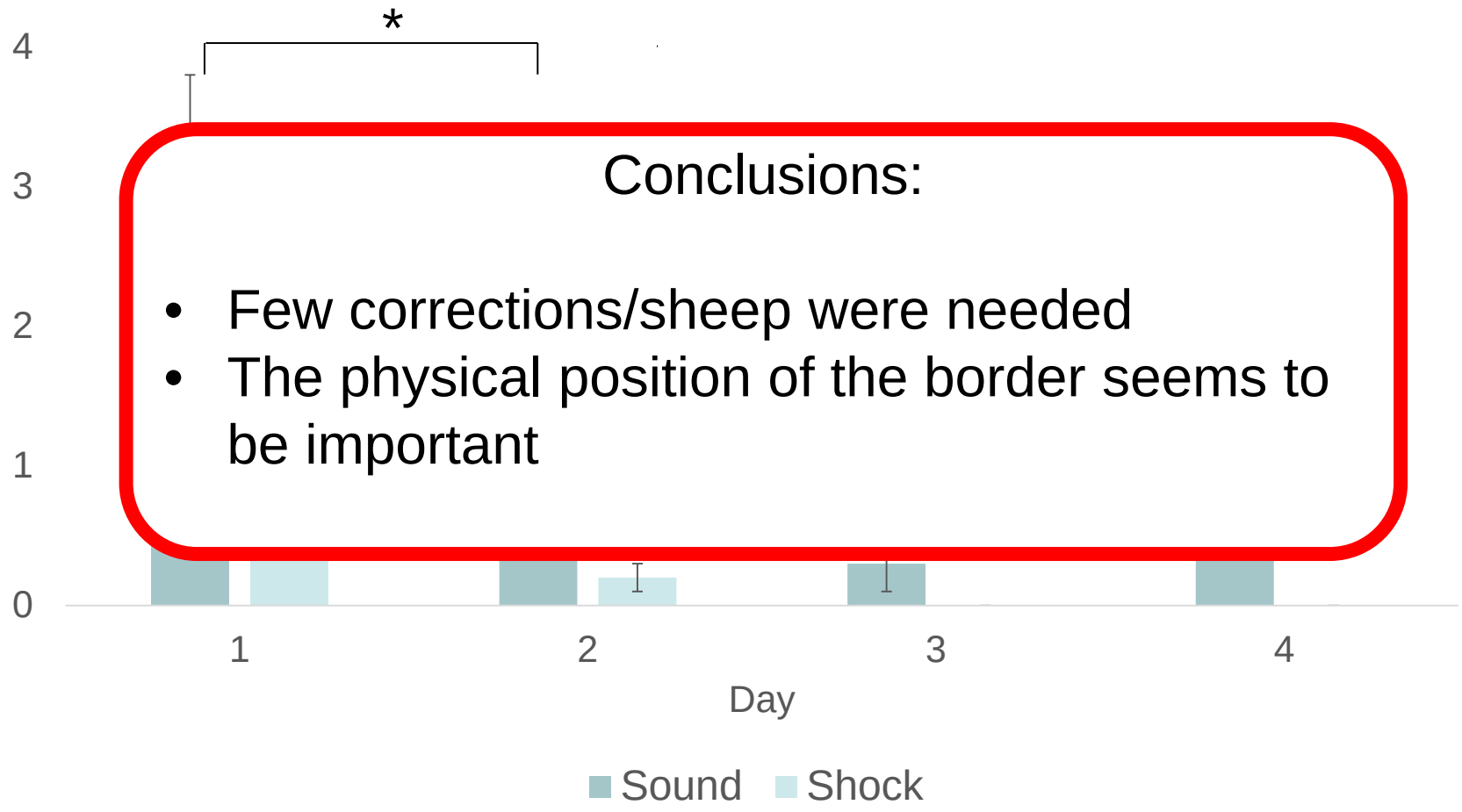
Day 4:

Change side of border

Learning criteria Day 4:

Max 1 shock

Results – Experiment 2



Conclusions:

- Few corrections/sheep were needed
- The physical position of the border seems to be important

Discussion & Conclusion

- Unstable technology
- Pre-selected animals
- Animal welfare
- Questions to be answered
  - More animals
  - Sheep with lambs
  - Longer time period
  - Attractions outside the border


Photo: Heine Schjølberg