

Virtual fences – new opportunities for conservation grazing management

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Fences and grasslands

- Fencing is indispensable in pasture management
- In the past: wood, hedges, ditches, or stone walls
- Today: Barbed and electric fences hinder wildlife movements
- Rotational grazing or exclusions for conservation measures require temporary fencing → high labour
- Innovation: virtual fencing collars

Opportunities through virtual fencing

Improved
pasture
management

Enhanced
animal
welfare

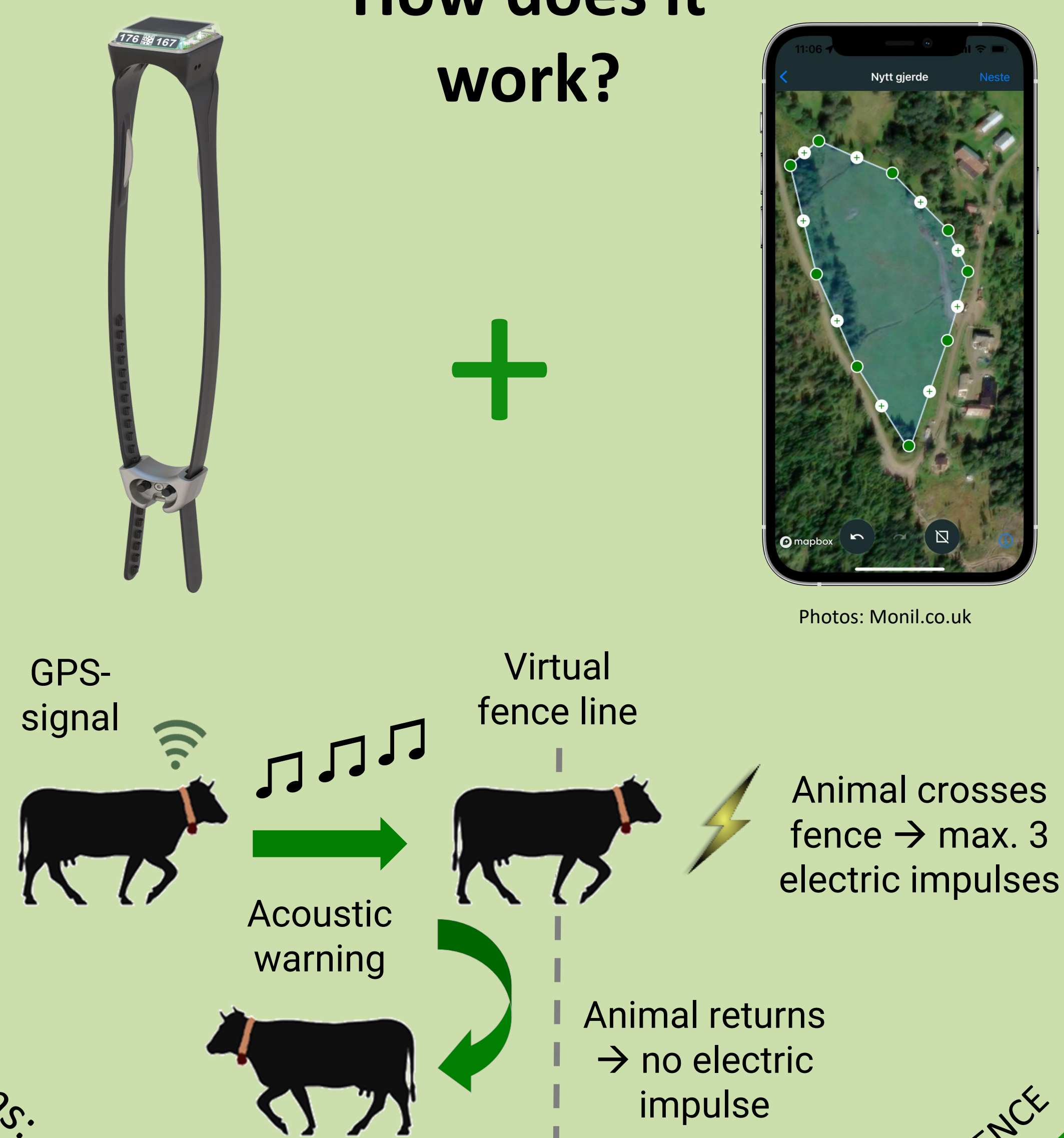
No fence
maintenance
needed

Reduced
labour
costs

Graph: Thommy Weiss

Virtual fencing – How does it work?

Current virtual fencing systems:



Where do you see opportunities, what are challenges? Take a sticky note and place it here!

Challenges

Collars
might fall
off



Conservation applications



- Bird nest protection: Riesch et al. 2026
- Mountain grazing: Fuchs et al. 2024

- Protect regrowing vegetation: Boyd et al. 2022
- Create temporal and spatial patchiness: Silber et al. 2025
- Protect riparian areas: Murray et al. 2024



Animal welfare

- No differences in stress levels between virtually or physically fenced cattle (Wilms et al. 2022, Musinska et al. 2025)

Training required!



References:



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More information about the GreenGrass project and our research:
<https://www.greengrass-project.de/>



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