

## *Gaming provides insights into farmers' land management decisions*

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Agricultural production and goose conservation are in conflict across Europe due to rising goose populations and the damage they cause to agricultural crops. In order to manage this "conservation conflict", it is important to understand how farmers view this conflict and what measures farmers want to take to manage goose numbers on their farmland.

We developed a new experiment using a game, in which farmers manage a digital farming landscape: looking at how farmers manage their land in the game enables us to understand how their land management decisions change under different scenarios. Across the farming landscape, farmers can choose to do different things including scaring or shooting geese, setting aside productive land for goose conservation habitat, or farming without any of these measures. We also introduced subsidies and financial compensation to see how these interventions affected farmers' land management decisions. We played the games with farmers in Orkney, Scotland, where greylag geese are the focus of the conservation conflict.

We found that farmers showed more pro-goose-conservation behaviour (i.e. deciding to shoot fewer geese or set aside more goose conservation habitat) when financial assistance was provided for goose scaring; when subsidies were given for goose conservation habitat; or when bonus payments were given when neighbouring farms created adjoining goose conservation habitat. The effect of these interventions was greatest when farmers had higher levels of trust in other farmers in their community. Farmers who thought financial compensation for goose damage was unequally distributed in Scotland were more likely to set aside land for goose conservation habitat when compensation payments were available. Farmers who had positive attitudes towards wildlife tourism were also more likely to provide goose conservation habitat and were less likely to shoot geese in the games.

Our study highlights the importance of understanding the social and political

context at a local scale, when trying to find beneficial outcomes for different stakeholder groups in conservation conflicts. Furthermore, it demonstrates how experimental games can be used to help address conservation conflicts in a wide range of settings.



*Greylag geese grazing on farmland, Orkney, Scotland, UK. Photographer: O. Sarobidy Rakotonarivo.*