

The Spark

SEFARI Gateway's Newsletter

April 2024



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Welcome to the April 2024 edition of The Spark, [SEFARI Gateway's](#) (Centre of Expertise for Knowledge Exchange & Innovation) newsletter, a monthly update on the latest research developments from the [Scottish Government's Environment, Natural Resources and Agriculture \(ENRA\)](#) strategic research programme. The ENRA Research Portfolio provides evidence for policy and practice across environment, climate change, biodiversity, land use, agriculture, food, and rural community agendas

Scotland is playing a central role in developing environmental solutions to the global climate and nature crises, and the Scottish Government response is based on the strongest possible scientific evidence. The Environment, Natural Resources and Agriculture research programme is key to achieving this.



We'd love to hear from you and receive your feedback on how we can improve our newsletter. Please contact us at info@sefari.scot with your suggestions.

Scientists Tackling Avian Flu in Scotland

Avian flu has caused devastating losses in Scottish wild bird populations. NatureScot's science advisory sub-group for avian flu identified a [need for increased wild bird testing](#) to better understand the situation in Scottish wild birds. For testing in Scotland to proceed, several considerations and challenges must be addressed first, mainly related to SAPO laboratory licensing for handling active virus, as well as reporting requirements (notifiable disease).

This became the focus of a SEFARI Gateway-funded specialist advisory group, which included experts from Moredun, BioSS, EPIC, the University of Edinburgh and NatureScot who specialise in virology, avian disease ecology, statistics and surveillance, including experience of running an NHS COVID testing hub.

Considerations around safety and reporting were outlined, as well as testing approaches to work collaboratively with APHA reference laboratories. Recommendations were also provided for generation of sufficient and appropriate data to support conservation decision

making. This work is currently facilitating on-going conversations to develop avian flu testing capacity within Scotland.

<https://www.nature.scot/doc/naturescot-scientific-advisory-committee-sub-group-avian-influenza-report-h5n1-outbreak-wild-birds>



SEFARI Researchers rolling out research with four commercial farms in South West Scotland

As a result of work commissioned by the Scottish Government funded Strategic Research Programme (SRP) looking at resilient food supply chains, a group of farmers teamed up with Professor Mike Coffey at Scotland's Rural College (SRUC). **The Fastbreeders project** will demonstrate the application of large-scale recording and genotyping of dairy cattle to accelerate genetic improvement for traits that lead to better resilience of their farming systems within a net zero context of the future. The research for SRP is identifying animals of optimum size that can graze grass and produce milk efficiently and at low environmental impact. Milk from these cows feeds into supply chains that become resilient and efficient as a result.

FastBreeders is a collaboration between **four progressive farmers** located in South West Scotland. With years of experience and professional development, the group share the same vision for resilient dairy systems that have minimal environmental impact. Their joint operations can exploit economies of scale, benefit from increased selection intensity in breeding animals and build resilience because genetic material can move freely across the four farms. Their joint assets include over 9000 genotyped cows and calves and access to relevant previous production and other farm records.

The group have a very audacious goal to nearly double the solids output of the cows from the same type of cow specially adapted to a grazing environment and keep the cow size appropriate. The process of coming together into a group has helped create focus on breeding, created experience and data exchange, allowed purchases to be grouped and created a research culture attractive to academics. It is truly a coming together of industry and academia to solve a problem of sustainable dairy farming from sun, soil and water.



Pictured above are farmers from the 4 commercial farms working with SEFARI researchers on the award-winning project. From left to right: Charlie Russel (Fastbreeder) of Glenapp Estates Ayrshire, Hamish Wells (SAOS), Mike Coffey (SRUC), Rory Christie (Fastbreeder) of Dourie Farm Wigtownshire, Michael Kyle (Fastbreeder) of Linns Farm Dumfries, Graham Armstrong (Fastbreeder) of Kirvennie Farm Wigtownshire and Wayne Powell (SRUC).



Mike Coffey on a rare break during research

What can young people's social connections tell us about their migration patterns in rural Scotland?

Youth out-migration in Scotland's rural communities remains a significant concern, and increasing levels of youth retention, in-migration, and return are seen as key to longer-term population sustainability. While youth out-migration in rural places is often linked to limited employment and housing opportunities and constraints of services in rural places, evidence also shows that experiences of belonging, and family connections are important in shaping young people's migration patterns.

Our new Gateway funded **project** therefore, seeks to generate novel insights into the level of social networks among young people (16 – 24) as community-based assets supporting their economic, social, and health needs and their impact on shaping migration patterns of young people in rural Scotland.

Framed within the National Islands Plan (2019), Scotland's Population Strategy (2021) along with Action to Address Depopulation (2024), this project is led by Dr Emilia Pietka-Nykaza at the University of the West of Scotland.



Gateway News

SEFARI Gateway was delighted to sponsor and host a session at the British Society of Animal Science (BSAS) [Conference](#) in Belfast, 9th-11th April. The BSAS annual conference is one of the largest animal science events in the UK, and regularly attracts several hundred delegates, drawn from across academia and the livestock sector. The theme of this year's SEFARI session was 'Controlling parasites sustainably in a changing

world'. Helminth parasites (worms & fluke) are a ubiquitous challenge to grazing livestock and a major constraint on efficient livestock production globally. They also add considerably to the carbon footprint of animal agriculture.

In this session, we discussed the impact of helminth parasites on the economics and environmental footprint of livestock farming, and explored changing patterns of helminth parasite epidemiology, against a backdrop of a changing

climate and emerging drug resistance. We also considered barriers to uptake of best practice advice around sustainable parasite control and how best to communicate sometimes complex and nuanced messages.



Gateway Case Study Highlights this month:

[Developing a novel vaccine to protect sheep from chlamydial abortion | SEFARI](#)

[Biosecurity, sustainable livestock parasite control and messaging | SEFARI](#)

Blog

[Seasonality in soft fruit supply: distributional impact on nutrient demand and purchases | SEFARI](#)