Confronting Challenges in the Shellfish Industry:

Skills for Effective Research Communication and Engagement

2025 Workshop

Organising committee from the Roslin Institute:

Tim Bean
Group Leader

Pooran Dewari
Core Scientist

Kallen Sullivan
PhD Student

Tim Regan
Group Leader

Ambre Chapuis
Core Scientist

Nicola Stock
Public Engagement with Research Manager

With special thanks to:

Nick Lake
Association for Scottish Shellfish Growers

Kelly Wright
Scottish Shellfish Ambassador

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2025 Workshop Funded by:

- "BBSRC Institute Development Grant" to promote connectivity
- The Association of Scottish Shellfish Growers

Biotechnology and Biological Sciences Research Council

- The Fishmongers' Company's Fisheries Charitable Trust

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2025 Workshop

1. Ensure the next generation of UK aquaculture researchers are acquainted and effectively communicating with each other.

2. Give ECRs an understanding of building and growing collaborations.

3. Form ideas for public engagement that align to opportunity and potentially solve real-world problems.

4. Link ECRs directly with industry.


Native Oyster Growers

Understanding the Shellfish Industry Landscape

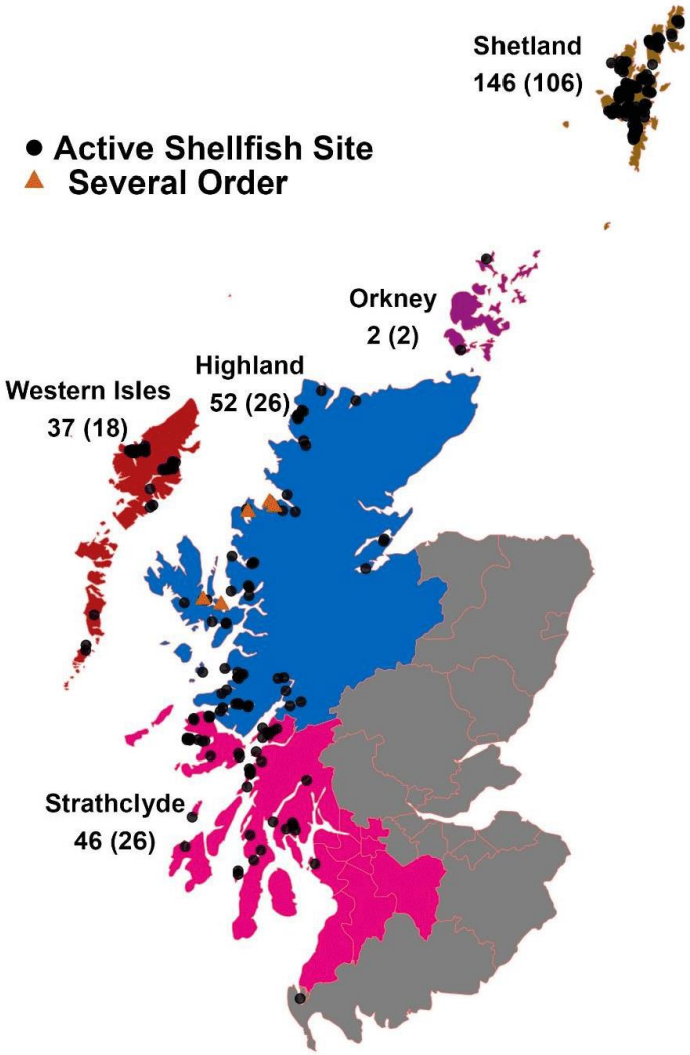
100
producers

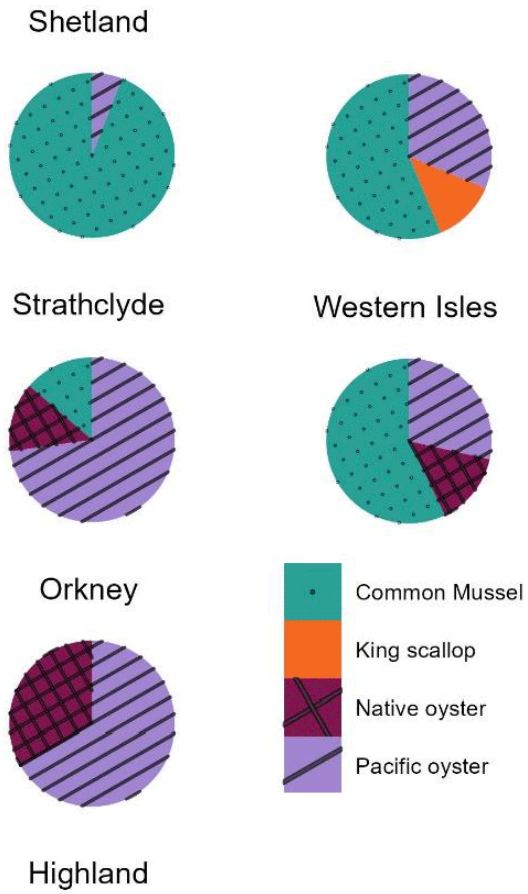
241
employees

2.4M
shells

170,000
shells

11,690
tonnes





Scottish Government, Scottish Shellfish Farm Production Survey 2024

Round Table Brainstorming Activity Topics

1. Genetics & Seed Production
2. Climate Change Impacts
3. Consumer Behaviour & Market Dynamics
4. Information Dissemination & Accessible Science
5. Engaging with Industry
6. Marketing your Science (and Socials)

Brainstorming Activity

Top Priorities

- What must be addressed first or is the most critical challenge?

Challenges & Barriers

- List key challenges or barriers that might hinder progress

Research Questions

- Important research questions or knowledge gaps that need to be explored to better address the challenges

Bold Recommendations

- Suggest a bold idea that could transform the topic area, even if it requires a radical shift in thinking or resources.

1. Genetics & Seed Production

- **Priorities:** Spat reliability; breeding purpose - restoration vs disease resistance vs commercial
- **Challenges:** No UK based hatcheries for mussels; long term investment; populations/connectivity
- **Qs:** Understand triploidy in mussels? Basic biology/physiology? Understanding barriers to production?
- **Bold Ideas:** Non-invasive methods to measure population level genetic diversity; Create more hatcheries/investment

2. Climate Change Impacts

- **Priorities:** Impacts of climate change; Disease; Temp/salinity effects
- **Challenges:** Conflicting impacts across species and sectors; influx of disease with non-native species or hybridization
- **Qs:** Timing of reproduction? Quality of gametes/offspring? Effects of moving aquaculture locations offshore?
- **Bold Ideas:** Fix climate change! Move to land based systems.

3. Consumer Behaviour & Market Dynamics

- **Priorities:** Freshness/availability; Price; Show health benefits
- **Challenges:** Online misinformation; generational loss of cooking; knowledge/exposure
- **Qs:** Surveys? Research health benefits? recycling shells?
- **Bold Ideas:** TikTok/Podcasts; smoked shellfish; Blue badge for restaurants; protein powders -> new foods/markets

4. Information Dissemination & Accessible Science

- **Priorities:** Knowledge exchange; being inclusive; engaging next generation
- **Challenges:** Time; Access; Competing Priorities
- **Qs:** What do people/public/industry actually want to know? Does storytelling or facts improve dissemination?
- **Bold Ideas:** Catchy jingles; Summarize paper in 7 seconds; cookbook; Taster stalls; TikTok

5. Engaging with Industry

- **Priorities:** Convincing industry of benefits of science; two way communication
- **Challenges:** Timing – avoid busy times of year; Being realistic in deliverables; Phone calls not email
- **Qs:** Surveys – where is research most useful to growers?
- **Bold Ideas:** Invite industry to give lectures; “Shell-batical” – embed researchers into shellfish production with funding

6. Marketing your Science (and Socials)

- **Priorities:** Promote why instead of what we do; Promote value of scientific approach; Fast-track reporting of ‘good’ science
- **Challenges:** Need collaboration outside STEM (arts/media)
- **Qs:** What are the best ways to get information out – individually or collectively? Does it depend on audience?
- **Bold Ideas:** Database for researchers (science tinder); QR codes on supermarket products linked to fisherman or scientists

Genetics & Seed Production

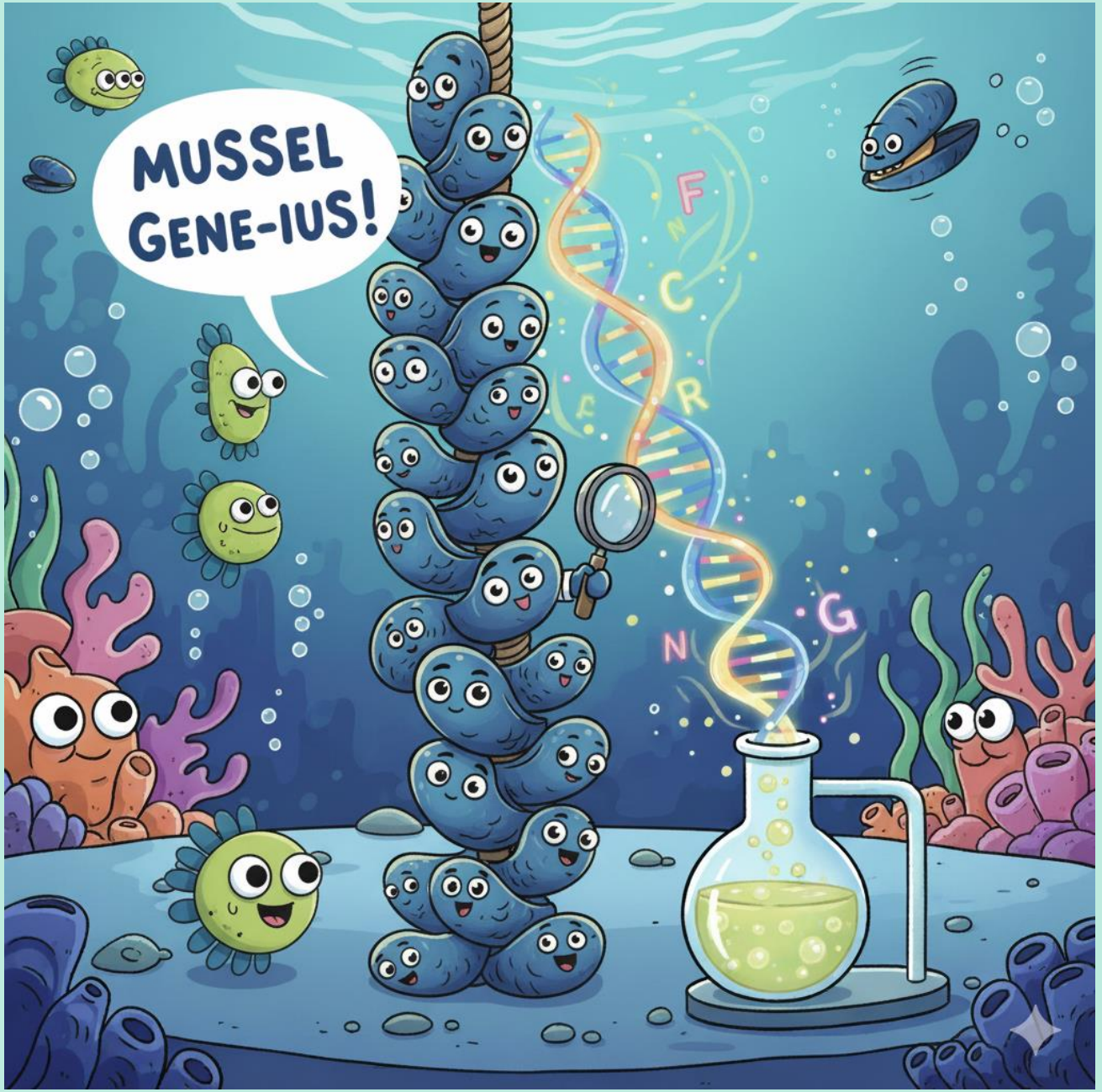
Genetics is a useful tool

Genetic analysis is expensive!! (especially relative to the value of individual animals).

Is it possible to assess *population level* genetics non-invasively?

- Providing information on species of spat / sites / rope
- Understanding genetic diversity (native oysters)
- Characterising genetics e.g. proportion of animals with resistance genes
- Understanding if we can/ should breed from populations

<u>Would this be useful?</u>



Engaging with Industry…

Most researchers don’t have experience of …

- How mussels and oysters are produced
- How farming works? What are the key challenges & priorities?
- Story of the business?

- Research is (often/always) is slow
- Aquaculture species are least understood in terms of genomics

We would love to hear your story, visit your farms, have you over to interact with researchers & see our labs!!

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A day in the life of researchers vs farmers

- Short documentary
- Visit labs, Q&A with researchers
- Showcase at festivals & public outreach programmes

Outcomes…

Dissemination of science and consumer demands

Gen Z love health supplements, convenience and sustainability (and gyms).

Can we use the science of shellfish to sell them to this generation???

Multipronged attack

– take the food truck to University freshers weeks

Tie in with a social media campaign backed by science.

- 20g Protein per 85 g mussels
- Collagen, Zinc and Magnesium
- Convenient… but not processed!
- Sustainable!

Mussels – post work out food of choice ???


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