

2024 UK DNA Working Group Conference

10th Anniversary

Inverness, 25th/26th April

UHI | INVERNESS



Outline Programme

Thursday 25 th April		Friday 26 th April	
From 8:30	Registration and coffee	From 8:30	Coffee
9:30-9:45	Introductions	9:00-10:45	Talks
9:45-11:00	Talks	10:45-11:00	Coffee break
11:00-11:30	Coffee break	11:00-12:30	Workshops
11:30-13:00	Talks	12:30-13:00	Conference wrap-up
13:00-14:00	Lunch	13:00-13:30	Lunch
14:00-15:30	Talks	13:15 – 17:00	Conference tours
15:30-16:00	Coffee break		
16:00-17:00	Talks		
17:00-18:00	Poster session		
19:30	Conference Dinner		

With funding support from:



Organising committee

Colin Bean, NatureScot, colin.bean@nature.scot

Si Creer, University of Bangor, s.creer@bangor.ac.uk

Alistair Duguid, SEPA, alistair.duguid@sepa.org.uk

Nathan Griffiths, UHI Inverness, nathan.griffiths.ic@uhi.ac.uk

Bernd Hänfling, UHI Inverness, bernd.haenfling.ic@uhi.ac.uk

Iveta Matejusova, Marine Directorate, iveta.matejusova@gov.scot

Stefano Mariani, Liverpool John Moores University, s.mariani@ljmu.ac.uk

Dan Read, CEH, daniel.read@ceh.ac.uk

Laia Rovira-Craven, SEPA, laia.roviracraven@sepa.org.uk

Naiara Sales, Salford University, n.guimaraessales@salford.ac.uk

Jennifer Shelton, CEH, jenshe@ceh.ac.uk

Paul Woodcock, JNCC, paul.woodcock@jncc.gov.uk

Monika Maleszka-Ritchie, UHI Inverness, monika.maleszka-ritchie.ic@uhi.ac.uk

Gosia Pattison, UHI Inverness, gosia.pattison.ic@uhi.ac.uk

Detailed programme

Day 1: Thursday 25th April

From 8:30	Registration with coffee
9:30-9:45	Welcome Bernd Hänfling, Andy Nisbet Chris O'Neil, Principal UHI Inverness
9:45-11:00	Session 1 (Chair: Bernd Hänfling)
9:45-10:15	<u>Keynote:</u> Rob Odgen: eCSI – The use of non-human DNA evidence in forensic science
10:05-10:30	<u>Regular talks:</u> Christopher Hirst: Linkages Between Diet, Microbes, and the Flexible Forager: Metabarcoding Insights into Roe Deer Nutritional Ecology
10:30-10:45	Clare Cowgill: Utilising environmental DNA for monitoring terrestrial rewilding: A review of current trends and recommendations.
10:45-11:00	Micaela Hellstroem: Last meal, identity and sex revealed from footsteps in the snow, case study on polar bears, lynx, snow leopards and otter.
11:00-11:30	Coffee break
11:30-13:00	Session 2 (Chair: Colin Bean)
11:30-11:45	<u>Regular talks:</u> Nathan Griffiths: Environmental DNA based approaches to Site Condition Monitoring of Fish in Standing Waters (eDNA-SCM).
11:45-12:00	Debbie Leatherland: Confidence in results of DNA work.
12:00-12:15	Iveta Matejusova: Marine Directorate - Single species eDNA-based monitoring for invasive species in aquatic environment
12:15-12:30	Rein Brys: Implementation of multi-marker approaches in eDNA research significantly increase reliability and precision of species detections and accurate quantification of population sizes in aquatic environments.
12:30-12:45	Sara Peixoto: Monitoring invasive non-native species with environmental DNA: from research to roll out.
12:45-13:00 (3 minutes each)	<u>Speed talks:</u> Jennifer Dodd: Minding the Gap for Biodiversity Lauren Cook: Stakeholder perceptions in translating eDNA into biodiversity monitoring: research, policy and practice. Thomas Gibson: eDNA metabarcoding for estuarine fish monitoring Nick Dunn: Testing use of passive filtration by citizen scientists for marine eDNA collection Alexandra Zieritz: Are commercial eDNA kits fit for Biodiversity Credits?
13:00-14:00	Lunch

14:00-15:30	Session 3 (Chair: Naiara Guimaraes Sales)
14:00-14:30	<u>Keynote:</u> Rosemary Gillespie: Biodiversity Dynamics Inferred from eDNA and Metabarcoding along Island Gradients
14:30-14:45	<u>Regular talks:</u> Sebastian Mynott: Marine Biodiversity Monitoring: Insights from a 12-Year eDNA Time-Series of a Coastal Fish Community
14:45-15:00	Phil Davison: The elephant in the sample: detecting marine non-native species using eDNA – but how do we know they're really there?
15:00-15:15	Giulia Maiello: Environmental DNA as a biomonitoring tool in the kelp forest ecosystems of the proposed Chumash Heritage National Marine Sanctuary
15:15-15:30 (3 minutes each)	<u>Speed talks:</u> Kirsten J Harper: An eDNA Bounty: Characterising the Biodiversity of a Marine Protected Area Chloé Fernandez: Monitoring marine biodiversity using environmental DNA in a Marine Protected Area Sam Jones: eDNA to address issues in conservation monitoring of the Freshwater Pearl Mussel Rosalie Dowell: Marine sponges as natural samplers of eDNA; does DNA state effect detection and persistence? George Roderick: Invasive terrestrial arthropods on Pacific Islands: DNA observatories and AI classification tools
15:30-16:00	Coffee break
16:00-17:00	Session 4 (Chair: Giulia Maiello)
16:00-16:15	<u>Regular talks:</u> Amy Thorpe: Using lake sedimentary DNA to reconstruct past microbial community dynamics.
16:15-16:30	Andrew Tighe: Ancient sediment DNA reveals landscape of western Ireland 10,000 years ago.
16:30-16:45	Susheel Bhanu Busi: Land use and agricultural intensification structure AMR ecology in soils
16:45-17:00	<u>Speed talks</u> Sophie de Becquevort: Exploring the potential of air eDNA metabarcoding as a fungal and mammalian forest biodiversity monitoring tool. Katherine Lester: Improving barcode reference libraries for soil fauna. Marco Benucci: Genomics for Animal and Plant Disease Consortium (GAP-DC): Using genomic surveillance to monitor the health of animals, plants and their environments. Katie Clark: Creation and optimisation of airborne eDNA samplers
17:00-18:00	Poster session
19:30	Conference Dinner, Kingsmill Hotel Inverness

Day 2: Friday 26th April

From 8:30	Coffee
9:00-10:45	Session 5 (Chair: Jennifer Shelton)
9:00-9:30	<p><u>Keynote:</u> Pete Hollingsworth: Developing a Scottish DNA Hub</p>
9:30-9:45	<p><u>Regular talks:</u> Jake Jackman: Understanding fish eDNA distribution patterns through hydrodynamic and particle tracking modelling in a dynamic estuary.</p>
9:45-10:00	<p>Naiara Guimaraes Sales: Application of eDNA and eRNA surveys to assess the distribution of aquatic arthropods and wetland restoration</p>
10:00-10:15	<p>Ethan Ross: Applications of Oxford Nanopore Flongles to aid eDNA metabarcoding studies for biodiversity assessments</p>
10:15-10:30	<p>Iain MacLaren-Lee: Nanopore sequencing for environmental monitoring, conservation, and deeper biological insights</p>
10:30-10:45	<p><u>Speed talks:</u> Gert-Jan Jeunen: tombRaider - improved species and haplotype recovery from metabarcoding data through artefact exclusion. Carla Perez Mon: Metabarcoding and isotopic ratio analyses as combined forensic tools to trace the geographic origin of falsified antimicrobials. Peter Cock: Metabarcoding primer biases for terrestrial invertebrates revealed through <i>in silico</i> PCR</p>
10:45-11:00	Coffee break
11:00-12:30	Workshops in breakout groups (parallel)
	<p>Workshop 1 (Chair: Bernd Hänfling): eDNA Tools and Metrics for Management and Conservation</p> <p>Workshop 2 (Chair: Stefano Mariani): Exploring and Forecasting DNA Futures for monitoring (including population genetics and the use of genomic data)</p> <p>Workshop 3 (Chair Jennifer Sheldon): Why aren't we using DNA more yet, and what can we do about it?</p>
12:30-13:00	Workshop and conference wrap-up
13:00-14:00	Lunch and departure
13:15-17:00	Conference tours
13:15	Departure to conference tours
17:00	Return to campus from conference tours

Poster presentations:

Poster id. 2 - Sebastian Mynott, Applied Genomics:

Advancing Biodiversity Monitoring in Marine Eco-Engineering with eDNA

Poster id. 3 - Hannah Vallin, Aberystwyth University:

Decoding Biodiversity: Unravelling grassland systems with DNA metabarcoding

Poster id. 6 - Jan Maclellan, Natural England:

eDNA monitoring trial for marine Invasive Non Native Species – collecting samples from ports

Poster id. 11 - Lynsey Harper, NatureMetrics:

Environmental DNA surveys for great crested newts - time for regulatory changes?

Poster id. 12 - Oliver Williams, Centre for Environment, Fisheries and Aquaculture Science (Cefas):

Biodiversity data derived from DNA - How do we make it F.A.I.R?

Poster id. 13 - Azamuddeen Nasir, Monash University Malaysia:

Assessment and monitoring of Malaysian freshwater biodiversity using traditional surveys and environmental DNA

Poster id. 16 - Michael Connell, University College Dublin:

HydroGen: Integration of DNA-based assessment tools into traditional fish monitoring for the Water Framework Directive

Poster id. 17 - Josh Parker, Natural England:

Testing the validity of using eDNA for carbon origin analysis from sediment cores

Poster id. 19 - Allan McDevitt, Atlantic Technological University:

Using eDNA to monitor elasmobranch communities and bycatch in Irish Atlantic waters

Poster id. 21 - Alanna-Jo McCallum, Institute of Biodiversity and Freshwater Conservation (IBFC), UHI Inverness:

Exploring the Microbiome of Scottish Freshwater Pearl Mussels (*Margaritifera margaritifera*) with Nanopore Sequencing

Poster id. 23 - Anna Wood, Bangor University:

Metabarcoding to monitor biodiversity in European forest restoration projects

Poster id. 27 - James Macarthur, Institute for Biodiversity and Freshwater conservation (IBFC), UHI Inverness:

Investigating the impacts of Eurasian beavers (*Castor fiber*) on migratory fish species and conservation priority mammals

Poster id. 28 - Robert Moise, University College Dublin:

HydroGen: Integration of DNA-based assessment tools into water quality and biodiversity monitoring with a focus on invertebrates.

Poster id. 30 - Petra Guy, Forest Research:

Fungi for Forest Restoration (Fungi4Restor)

Poster id. 37 - Deborah Dawson, NERC Environmental Omics Facility (NEOF):

Are you an environmental researcher needing help and training in genetic techniques?

Poster id. 43 - Samantha Parker, Natural England:

Evaluation of eDNA primers for coastal UK marine mammal species

Poster id. 45 - Alexandra Zieritz, University of Nottingham:

A time- and cost-effective eDNA protocol to survey rare freshwater mussels (*Bivalvia*: *Unionida*) in tropical rivers

Poster id. 49 - Sebastian van Hellemond, University of Aberdeen:

Next-generation diagnostic technologies for DNA-based biosurveillance of non-native mussels in the South Atlantic

Poster id. 51 - Eve Gwynedd, Bangor University:

Microbiome differences between healthy and necrotic tissue from Menai Strait sponge *Haliclona oculata*

Poster id. 53 - Sara Maggini, Bangor University:

Can Nanopore eDNA sequencing of catch water estimate species composition in commercial bottom trawling fisheries?

Poster id. 54 - Nicole Grimason, University of Wolverhampton:

Genetic diversity of the common frog (*Rana temporaria*) in the UK

Poster id. 55 - Clare Collins, University of Hull:

Improving biodiversity monitoring of river rewilding projects using eDNA metabarcoding models

Poster id. 56 - Tom Spencer, University of Hull:

Evaluating Biodiversity Impacts of Beavers on Invertebrate and Vertebrate communities using environmental DNA

Poster id. 58 - Angus Monaghan, University of Hull:

Using eDNA to assess the regional distribution of the critically endangered European eel in pumped catchments to inform management

Poster id. 59 - Thomas Gibson, Centre for Environment, Fisheries and Aquaculture Science (Cefas):

Developments in eDNA Metabarcoding for Monitoring Fishes in Estuaries

Attendance Details

Conference venue:

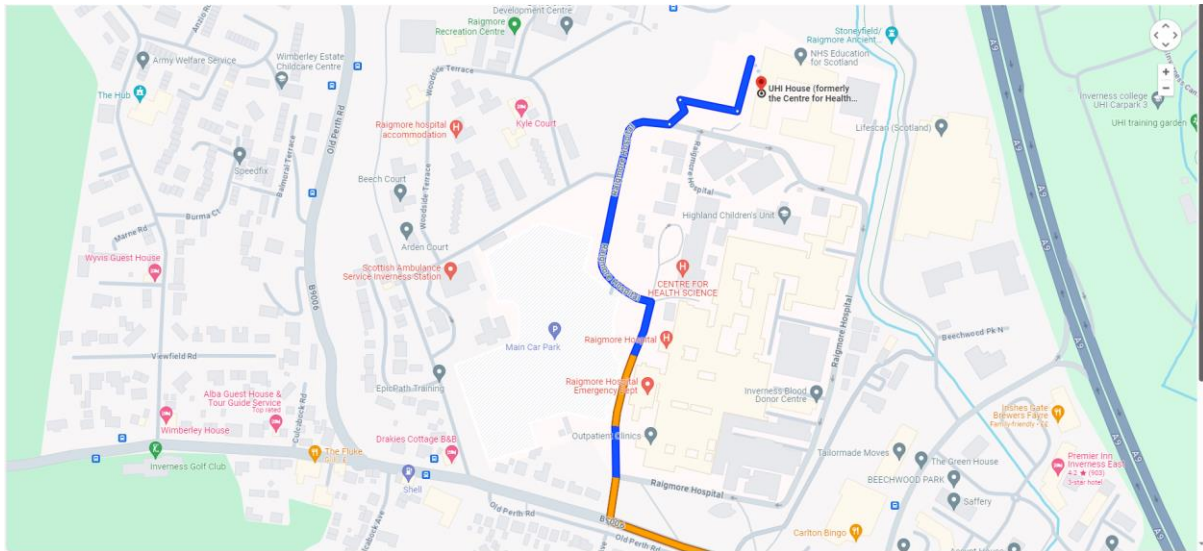
UHI House (formerly the Centre for Health Science)

Old Perth Road

Inverness

IV2 3JH

UHI House is located next to Raigmore Hospital.



Travel information:

Arriving by car

Google maps should bring you directly to the car park in front of UHI House. When you turn into the hospital grounds make sure that you drive past the main hospital car park towards UHI House.

The **car park** operates number plate recognition at the barrier and parking will be charged at an hourly rate or £6 for the full day. Free parking is available at the main hospital car park about 5 minutes walk away, but there is limited space available.

Arriving by train:

Buses from the City Centre leave from Falcon Square, between Marks and Spencer and the Eastgate shopping centre. This is a few minutes' walk from the railway station and bus station. There is also a bus stop at Queensgate, next to the main Post Office in the City Centre.

There is a taxi rank in Inverness city centre on Academy Street by the rail station. UHI House is approximately a 10-minute journey from the city centre.

Arriving at Inverness Airport:

Bus service 11 is your direct connection between Inverness Airport to Inverness City Centre and Inverness Railway station (see travel options arriving by train)

Conference dinner venue

The conference dinner will be held at the [Kingsmills Hotel](#) which is about 20 minutes walking distance from the the conference venue and on the bus route from Raigmore Hospital into City Centre.

Kingsmills Hotel

Culcabock Rd,

Inverness

IV2 3LP

Please arrive at 19:00 for a 19:30 start

