



THE
ROYAL
SOCIETY

Agenda: Tuesday 13 May

09:30	Arrival, registration, refreshments	
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10:00	Welcome and background	
	Professor Sheila Rowan CBE FRS	Welcome to the Royal Society
10:05	Dr Sarah Giles	Key findings from the Royal Society's eDNA report
10:15	Andy Nisbet	Welcome from the UK DNA Working Group
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10:30	How can eDNA contribute to policy-related biodiversity monitoring needs? Chair: Dr Dan Read	
	Professor Gideon Henderson FRS	Title TBC
10:50	Professor David Bass	A New Strategy for the Defra DNA Centre of Excellence
11:05	Lesley Rippon & Dr Katherine Burgess	How the Natural Capital & Ecosystem Assessment Programme uses DNA for environmental monitoring.
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11:20	Break	
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11:45	Novel and emerging methods for terrestrial DNA-based monitoring Chair: Dr Andrew Briscoe	
	Dr Joanne Littlefair	Promises and challenges of airborne eDNA for terrestrial biodiversity monitoring
12:05	Professor Matthew Clark	AirSeq: Measuring air metagenomic diversity in agriculture
12:20	Jamie Marsay	Title TBC
12:35	Dr Conor Scott	Sampling airborne fungal DNA to investigate ectomycorrhizal colonisation of former agricultural land
	Speed talks:	
12:50	Dr Kate Denton	Beyond Detection: Deriving Ecological Insights from Terrestrial airDNA
12:55	Dr Lindsay Newbold	Using environmental DNA (eDNA) from leaf washes, to measure changes in arboreal microbial populations linked to host species.

13:00	Lunch	
14:00	eDNA-based monitoring in aquatic ecosystems Chair: Dr Kerry Walsh	
	Professor Simon Creer	Investigating the ecological relevance of freshwater lotic eDNA: from mesocosm to ecosystem scale.
14:20	Dr Amy Thorpe	National-scale biogeography and function of river and stream bacterial biofilm communities
14:35	Jono Warren	Microbial biofilms as indicators of environmental change in English rivers.
14:50	Dr Joe Taylor	Past, present and future perspectives on integrating DNA monitoring into one of the longest-running freshwater lake time-series
15:05	Dr Tom Wilding	eDNA2IQI – the first regulatory approved eDNA-based monitoring tool in the UK
15:20	Break	
15:50	eDNA-based monitoring in aquatic ecosystems (cont.) Chair: Dr Kerry Walsh	
	Speed talks: Dr Salla Vartia	PINKTrack - an EU-wide eDNA surveillance programme for pink salmon
15:55	Dr Laura Weldon	The value of eDNA monitoring data in context: the impact of elevated water chemistry on an inland freshwater European eel eDNA survey.
16:00	Sotiris Meletiou	Using eDNA to Detect the Presence of Critically Endangered European Eel in Highly Impacted Freshwater Systems of the Eastern Mediterranean Island of Cyprus
16:05	Milly Jones	More than presence-absence; modelling (e)DNA concentration across time and space from qPCR survey data
16:10	Panel Discussion – opportunities for cross discipline and cross sector collaboration Chair: Professor David Bass	
	Dr Joanne Littlefair Professor Davey Jones Jamie Marsay Dr Kerry Walsh Professor Simon Creer Dr Susheel Bhanu Busi	

17:00 **Day 1 Reflections**

Andy Nisbet

17:10 **Drinks Reception**

(+ optional private view of the Royal Society's historic archives, via sign-up)

19:30 **Close**

Agenda: Wednesday 14 May

08:45 **Arrival, registration, refreshments**

09:15 **eDNA for marine monitoring**

Chair: Dr Katie Clark

Dr Kate Wade

UK Marine Monitoring: Working together to enable uptake of biomolecular techniques

09:35 Dr Karen Tait

Comparison of matching morphological and molecular zooplankton time-series data

09:50 Dina-Leigh Simons

Characterising rocky reef biodiversity using environmental DNA from local to national scales

Speed talks:

10:05 Dr Kirsten Harper

In Search of the eDNA Bounty: Uncovering Marine Biodiversity in the Mutineers' Seas

10:10 Dr Vera Fonseca

Leveraging eDNA tools for assessing marine diversity: from microfauna to fish

10:15 Dr Margaux Steyaert

Linking ARMS: comparing Autonomous Reef Monitoring Structures (ARMS) and eDNA methods for cryptobenthic reef studies

10:20 Dr Tom Gibson

Environmental DNA Metabarcoding for Biodiversity Monitoring of Ascension Island MPA

10:25 **Break**

10:55 **Health and forensic applications of eDNA**

Chair: Professor David Bass

Professor Niamh Nic Daeid FRSE

Title TBC

11:15 Professor Davey Jones

Novel Approaches to Tracking Antimicrobial Resistance and Influenza Viruses in Zoonotic Reservoirs

11:30 Dr Susheel Bhanu Busi National-scale assessment of antimicrobial resistance in a river surveillance network

Speed talks:

11:45 Dr Manisha Gupta On-site diagnostics for food borne pathogens

11:50 Professor Lorna Dawson SCAnDi - Single-cell analysis in forensic science: a collaborative approach to addressing DNA identification

11:55 **Lunch**

12:45 **eDNA for terrestrial ecosystem monitoring, restoration and management**

Chair: Dr Holly Broadhurst

Professor Bridget Emmett

An overview of ecosystem monitoring by UKCEH and partners and the role of soil eDNA assessment

13:05 Professor Douglas Yu

High quality, granular, timely, trustworthy, and efficient vertebrate species distribution data across a 30,000 km² protected area complex

13:20 Professor Julie Lockwood

Use of eDNA in early detection of invasive forest insects

13:35 Buffy Smith

Comparing the iDNA and airDNA sampling methodology for biodiversity monitoring in fragmented forest landscapes.

13:50 Clare Cowgill

Multi-tool monitoring: Comparing and combining non-invasive methods to monitor terrestrial rewilding

Speed talks:

14:05 Dr Nadia Barsoum

Comparing different sources of eDNA (water, soil, air, woodland surfaces) for forest mammal detection

14:10 Anna Wood

Metabarcoding to monitor biodiversity in forest restoration projects

14:15 Dr Tamara Schenekar

Monitoring terrestrial vertebrates in savanna ecosystems using environmental DNA of waterholes

14:20 Dr Briony Jones

Leveraging public genomic data repositories for microbial modelling and Soil Health Bioindication

14:25 Dr Penelope Watt

Impact of land management on earthworm diversity

14:30 Dr Claire Carvell

DNA barcoding of a national citizen-led time series from the UK Pollinator Monitoring Scheme reveals potential for large-scale insect community biomonitoring

14:35 **Break**

14:55 **Standards, best practice, current knowledge gaps and future opportunities**

Chair: Dr Lori Lawson Handley

14:55 Professor Florian Leese

From the Wild West to Standards: Unlocking the Power of eDNA for Global Biodiversity Monitoring

15:20 Dr Lyndall Pereira da Conceicao

BIOSCAN: Insights and Challenges from the First 100K Barcodes in UK Insect Monitoring

- 15:35 Dr Lynsey Harper A framework for assessing confidence in metabarcoding assays and results
- 15:45 Dr Nicholas Dunn Metadata requirements for the publishing and mobilisation of DNA data
- Speed talks:**
- 15:55 Dr Caroline Howard Tree of Life Update: after 2000 genomes the Genome Engine matures
- 16:00 Dr Dimitrious Kaloudis The use of eDNA metabarcoding for monitoring of UK inshore fish: Current challenges and future recommendations.
- 16:05 Dr Ben Price UKBOL: an update on the state of UK DNA reference libraries
- 16:10 Dr Henrik Cornelisson van de Ven Establishing a National eDNA Framework in the Netherlands – Insights from the First Dutch National eDNA Workshop

16:15 **Next steps for the UK DNA Working Group**
Dr Lori Lawson Handley and Dr Dan Read

16:25 **Panel discussion: Opportunities and challenges for eDNA research and operationalisation**
Chair: Dr Lori Lawson Handley
Dr Dan Read
Professor Florian Leese
Dr Lynsey Harper
Dr Kate Wade
Dr Joanne Littlefair

16:55 **Day 2 Reflections and Close**
Andy Nisbet