

DNA Working Group Meeting

16 & 17 November 2016

South Hall Complex, Pollock Halls
University of Edinburgh, Holyrood Park Road, Edinburgh [EH16 5AY](#)

Hosted by the Scottish Environment Protection Agency

Agenda – day 1		
11:00	Registration opens	
12:00-12:45	Lunch	
12:45-12:55	Welcome & introduction	Willie Duncan
Session Chair: Bernd Hänfling, University of Hull		
12:55-13:40	International cooperation & collaboration	
12:55-13:20	<ul style="list-style-type: none"> ● Biomonitoring 2.0: implementing DNA meta-barcoding as a tool for research and monitoring in river ecosystems in Canada 	Donald Baird
13:20-13:40	<ul style="list-style-type: none"> ● The EU COST Action DNAqua-Net: aims, scope, participation 	Florian Leese
13:40-14:40	Operational role out	
13:40-13:55	<ul style="list-style-type: none"> ● Developing protocols and standards - what are our options? 	Willie Duncan
13:55-14:10	<ul style="list-style-type: none"> ● Towards a global biodiversity monitoring using eDNA in aquatic ecosystems 	Alice Valentini
14:10-14:25	<ul style="list-style-type: none"> ● Comparison of capture and storage methods for aqueous microbial eDNA - advantage of enclosed filters 	Micaela Hellström
14:25-14:40	Discussion - operational deployment challenges and priorities	
14:40-15:05	Coffee	

Session Chair tbc

15:05-15:35	NERC highlight projects - an overview and early findings	
15:05-15:20	LOFRESH- Understanding the ecological relevance of eDNA in freshwater lotic ecosystems	Si Creer
15:20-15:35	SeaDNA - Assessing marine biodiversity and structure using environmental DNA: from ground truthing to food web structure and stability	Stefano Mariani
15:35-17:20	Method development - aquatic. <i>Speed talks (10 minute presentations, 2 minutes of questions)</i>	
	● Fate, transportation and application of eDNA in aquatic ecosystems	Elvira Mächler
	● Development of DNA-based metagenomic methodologies for seabed monitoring and aquaculture management	Tom Wilding
	● Primers for detecting marine fish using eDNA metabarcoding	Owen Wangensteen
	● eDNA - detection of non-native and invasive alien species	Rosetta Blackman
	● An environmental DNA approach for elasmobranch assessment and monitoring	Judith Bakker
	● Using DNA metabarcoding to model trophic interactions of the <i>Dikerogammarus villosus</i> and <i>Harmonia axyridis</i> in the UK	Marco Benucci
	● Development of eDNA techniques for management and conservation of Irish freshwater animal species	Luca Mirimin
	● Great Crested Newt Detectives project; Detection of Great Crested Newts in Scotland by eDNA sampling	Peter Minting
17:20 - 17:30	Discussion	
17:30	Close - day 1	
19:30 for 20:00	Dinner - Mercure Hotel Princes Street, Edinburgh	

Agenda – day 2

Session Chair: Si Creer University of Bangor Method Developments - Non-Aquatic

09:00–10:00	<i>Speed talks (10 minute presentations, 2 minutes of questions)</i>	
	● A toe in the water- conservation agency applications	Keith Porter
	● Pollinator research in Wales	Andrew Lucas
	● Metabarcoding of soil mesofauna across a soil chronosequence	Daniel Read
	● Using molecular genetics to understand grass species pollen deposition	Georgina Brennan
	● Next Generation Pollinator Monitoring	Cuong Tang

Session Chair: Donald Baird, Canadian Rivers Institute Quantification and Understanding Error and Sampling Bias

10:00–10:50	<i>Speed talks (10 minute presentations, 2 minutes of questions)</i>	
	● A comparison of uncertainty in light microscope and NGS analyses of benthic diatoms	Martyn Kelly
	● Fishing for traces: the efficiency of metabarcoding in detecting and quantifying freshwater fish species in still and running waters	Rein Brys
	● Influences on seasonal changes in eDNA concentration	Andrew Buxton
	● The effect of environment DNA capture method on aquaculture fish ponds quantification via meta-barcoding analysis	Joe, Jianlong Li

10:50-11:15	Coffee
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Quantification and Understanding Error and Sampling Bias (continued)

11:15-12:15	<i>Speed talks (10 minute presentations, 2 minutes of questions)</i>	
	● Temporal eDNA analyses of fish community composition in Lake Windermere	Lori Lawson- Handley
	● Evaluating metagenomics vs. metabarcoding for diversity and biomass estimations in environmental samples of macroinvertebrates	Iliana Bista
	● Fish metabarcoding from eDNA of lake water samples: developments in laboratory methods and data analysis	Harriet Johnson

	<ul style="list-style-type: none"> ● Persistence of environmental DNA in experimental river systems: implications for molecular biodiversity assessment 	Mat Seymour
	<ul style="list-style-type: none"> ● UK freshwater pond monitoring: an evaluation of eDNA metabarcoding for detection of vertebrate communities using great crested newt (<i>Triturus cristatus</i>) eDNA 	Lynsey Harper
Session Chair: Willie Duncan, SEPA Technological Advances		
12:15-12:45 12:15-12:30	Onsite DNA sequencing and automated species classification for environmental studies	Tomas Fitzgerald
12:30-12:45	Defining "rare" in Environmental DNA: an approach to evaluate mock community sensitivity using Oxford Nanopore and Illumina technology	Peter Schum
12:45-13:30	Lunch	
Session Chair: Doug Wilson, Environment Agency Open Discussion		
13:30-14:30	<p>Questions and issues from the morning sessions</p> <p>Priorities for action</p> <p>Moving towards operational delivery and development challenges</p> <ul style="list-style-type: none"> ● Introducing Standards- Good Idea/Bad Idea ● Improving current applications ● Identifying new applications ● Quantification/understanding error ● Technological advances 	
14:30	Closing remarks	