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Workshop invitation

eDNA for environmental monitoring:
contributor or substitute of traditional methods?

Background

Environmental DNA (eDNA) is based on DNA collected directly from the environment to identify the presence of organisms either by Q-PCR, metabarcoding or metagenomics at the individual, population, species, genus or family level or for the determination of biodiversity and ecosystem characterization. Both within the terrestrial and aquatic environment, it is expected that eDNA will play a significant role in future environmental monitoring. eDNA builds on skills in molecular biology, population genetics and bioinformatics coupled with ecology, biology and/or agronomy. eDNA encompass very promising techniques for environmental monitoring. However, several issues do exist.

Objective

The objective of this workshop is to discuss and disseminate knowledge among scientists on, and pros and cons of eDNA for environmental monitoring in different ecosystems and with different eDNA techniques. These discussions will contribute to an opinion paper on eDNA in environmental monitoring.

Themes

The workshop will be organized in three different themes:

1. eDNA in terrestrial environments
2. eDNA techniques
3. eDNA in aquatic environments

Organizers

Anne Winding, Environmental Science, AU
Paul Henning Krogh, Bioscience, AU
Dorte Krause-Jensen, Bioscience, AU
Peter A Stæhr, Bioscience, AU
Lars H Hansen, Environmental Science, AU
Niels Bohse Hendriksen, Environmental Science, AU
Mogens Nicolaisen, Agroecology, AU
Liselotte W Andersen, Bioscience, AU
Frank Panitz, Molecular biology and genetics, AU
Michael M Hansen, Bioscience, AU

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Programme

Thursday 14th December 2017

12:00	Arrival and sandwich
12:30	Welcome / Anne Winding
12:40 – 15:25:	**Theme 1: eDNA in terrestrial environments**
12:40 - 13:10:	Presentation by Pierre Taberlet, Grenoble, F: eDNA in terrestrial environments (accepted)
13:10 - 13:30:	Flash (2 min) presentations of posters
13:30 - 14:30:	Discussion in 3 groups

a. Endangered species and rewilding. Facilitator: Liselotte W Andersen
b. Soil invertebrates. Facilitator Paul Henning Krogh
c. Plant pathogens and pests. Facilitator Mogens Nicolaisen

14:30 – 15:00	Coffee brake
15:00 – 15:30:	Presentations of outcome of group work in theme 3 by facilitator (10 min each group)
15:30 – 17:50:	**Theme 2: eDNA techniques**
15:30 – 16:00:	Presentation by Tom Gilbert, KU: eDNA techniques
16:00 – 16:20:	Flash (2 min) presentations of posters
16:20 – 17:20:	Discussion in 3 groups

a. Future and upcoming techniques of eDNA. Facilitator Lars H Hansen
b. eDNA for population genetical studies. Facilitator Michael M Hansen
c. Data handling and bioinformatic analysis. Facilitator Frank Panitz

17:20 – 17:50:	Presentations of outcome of group work in theme 1 by facilitator (10 min each group)
18:00 – 19:30	**Poster session with snacks and beverages**
19:30	**Dinner**

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Friday 15th December 2017

08:30 – 08:40	Welcome
08:40 – 12:10	**Theme 3: eDNA in aquatic environments**
08:40 – 09:10:	Presentation by Philip Francis Thomsen, KU: eDNA in aquatic environments
09:10 – 09:30:	Flash (2 min) presentations of posters
09:30 – 10:30:	Discussion in 5 groups

a. Larger animals (fish, otter, pearl mussel etc.). Facilitator Liselotte W Andersen
b. Benthic invertebrates. Facilitator Peter Stæhr
c. Macroalgae and plants. Facilitator Dorte Krause-Jensen
d. Bathing water quality. Facilitator Niels Bohse Hendriksen
e. Non indigenous species. Facilitator Anne Winding

10:30 – 11:00:	coffee
11:00 – 12:10:	Presentations of outcome of group work in theme 2 by facilitator (10 min each group)
12:10 – 12:40	**Summing up** of workshop and conclusions so far Panel of keynote speakers
12:40 – 13:40:	Sandwich and **goodbye**

The workshop is part of the project eDNA for environmental monitoring (http://projects.au.dk/edna/) and is sponsored by Aarhus University, Faculty of Science and Technology.