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Swedish University of Agricultural Sciences

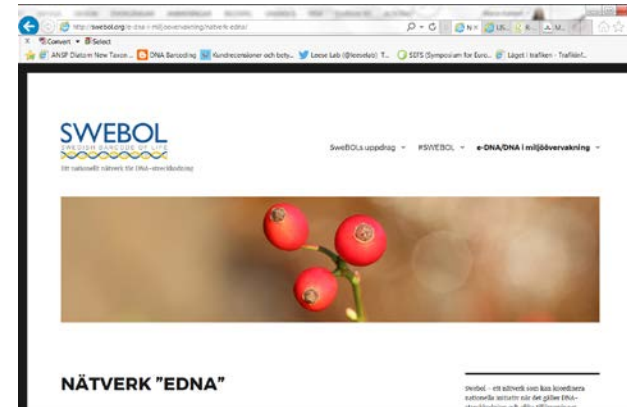
More about the real world - The EDNA network, an open forum to connect researchers and end users in Sweden, with focus on environmental assessment and biodiversity monitoring

Maria Kahlert¹ & Malin Strand²:

¹Department of Aquatic Sciences and Assessment, Swedish University of Agricultural Sciences, Uppsala, Sweden

²Swedish Species Information Centre, Swedish University of Agricultural Sciences, Uppsala, Sweden
(*President SweBOL 2016-2017*)

EDNA objectives & aim



Network and open forum for meetings of researchers and stakeholders within environmental monitoring.
Started October 2016.

- **Objectives:**
 - Linking ongoing research to environmental monitoring
 - Helping interested stakeholders through the jungle of possibilities and concepts
- **Aim:**

Promoting development and use of quality assured DNA methods* for environmental monitoring and analysis

* *and other molecular methods*

EDNA's vision:

Collaboration between scientists and stakeholders will ensure the development of relevant and high quality DNA/molecular methods for environmental research and monitoring.

Participants today

The network now connects participants from

- **Universities in Sweden** (GU, KTH, SLU, SU, UmU, UU)
- **State agencies, institutions and private companies**

(SciLifeLab,

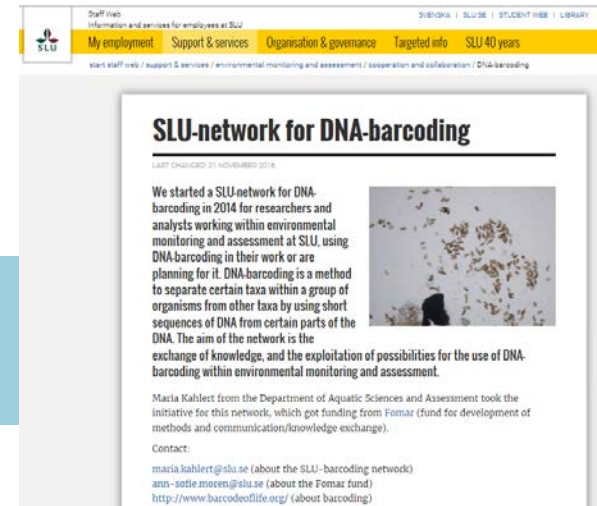
The Swedish Agency for Marine and Water Management (HaV/SwAM),

The Swedish Environmental Protection Agency (NV),

Swedish Museum of Natural History (NRM),

National Veterinary Institute (SVA),

Coalition Clean Baltic, several private companies, etc.



Start of EDNA network

- Start out of SLU barcoding network (started 2014)
- October 2016: Working group meeting organized by SLU in collaboration with Swedish Marine and Water Management Agency ([HaV](#)) and Swedish Environmental Protection Agency ([NV](#)).

Why needed?

- Fast development in research of molecular methods
- Pilot studies with an applied focus for use in **monitoring**
- Start of several national and international networking initiatives
- But most of these projects rather separated from each other, no forum for a knowledge exchange between them



EDNA structure & plans

- Open forum for researchers and end users
- Coordinator and **working groups**
- 2 (coupled) meetings per year:
 - **2017: 27-28 November in Uppsala (at SLU)**
 - **EDNA discussion forum** to promote development and use of quality assured molecular methods for environmental monitoring and analysis
 - Current focus on
 - metabarcoding use to analyse biodiversity of especially microorganisms
 - eDNA for detection of singles taxa such as alien or red listed species
 - **EDNA mini-congress** to promote knowledge exchange on ongoing research projects regarding molecular methods
- **Homepage** (<http://swebol.org/e-dna-i-miljoovervakning/natverk-edna/>)



EDNA structure & plans

Working groups 2017*

- Detection of red listed & alien species
Coordinator: Per Sundberg, GU
- Reference libraries (development & communication)
Coordinator: Per Ericson (NRM)
- Plankton & benthic communities - identifying all algae
Coordinator: Stina Drakare (SLU)
- Infrastructure
Coordinator: Alexandre Antonelli (GU)

** contact coordinator if you are interested to participate!*



Connection to other initiatives

- **COST Action CA15219 (DNAqua-Net)**

Goal: Advance the application of DNA-based tools for biodiversity assessments and environmental assessment & develop a roadmap to include these in standardized ecological assessments of aquatic ecosystems in Europe and beyond.

(<http://dnaqua.net>)



- **Swebol** - a network that can coordinate national initiatives with regard to DNA barcoding and various applications (<http://swebol.org/>)

- **Swedish Museum of Natural History (NRM)**

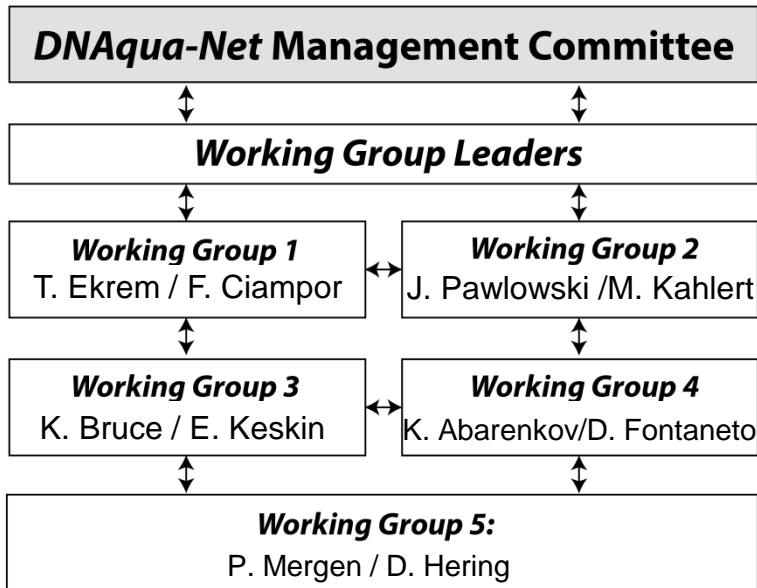
- Centrum för genetisk identifiering (CGI), offers government agencies and organizations help with analyzing DNA of biological material
- Miljöövervakarens DNA-skola, a forum for water managers with the opportunity to ask questions directly to researchers (<http://www.nrm.se/>)



Structure & working groups

Action Chair (Florian Leese)

Vice-Chair (Agnès Bouchez)

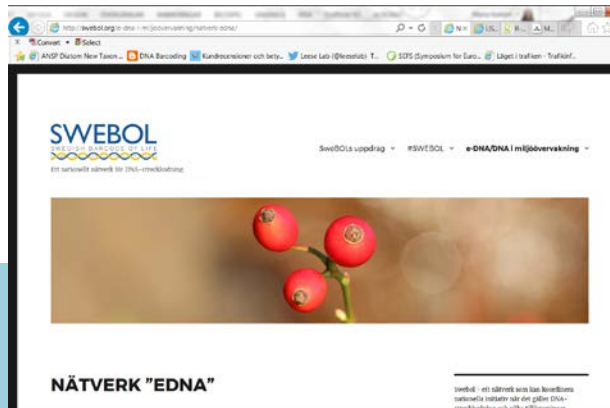


Grant Manager (Alexander Weigand)

Workplan 2017:

- **WG1 – DNA Barcode References**
 - Review of reference databases in Europe, filling gaps
- **WG2 – Biotic Indices & Metrics**
 - Development of indices based on molecular data
 - Comparison of ecological status classification between traditional and molecular methods
- **WG3 – Field & Lab Protocols**
 - Review of pre-sequencing protocols
 - Development of a strategy to test and compare protocols
- **WG4 – Data Analysis & Storage**
 - Review of bioinformatics in Europe
 - Development of a strategy to test and compare pipelines
- **WG5 – Implementation Strategy & Legal Issues**
 - ECOSTAT workshop
 - Other dissemination of DNAqua-net

Outlook



We aim to live up to our namesakes, and

- gather the talented people,
- being multifaceted and, of course,
- immensely popular,
- hopefully leading to getting immensely rich in knowledge.



Dame Edna: "supertalented, multifaceted, immensely popular and immensely rich"

Av Eva Rinaldi - Dame Edna,
 CC BY-SA 2.0,
<https://commons.wikimedia.org/w/index.php?curid=2479294>
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Performer: Brad Bird
 Appeared in: The Incredibles

“very talented and as demanding of others as she is of herself”

Thanks to the EDNA participants, and HaV & SLU for start funding