

6th Nordic-Baltic diatom intercalibration/harmonization exercise 2020

Dear Nordic-Baltic diatom colleagues!

(please spread the letter to anybody in our region who might be interested)

Please feel invited to the sixth Nordic-Baltic diatom intercalibration/harmonization exercise. For those unfamiliar with the previous exercises in 2007, 2009, 2011, 2013 and 2016, please check the webpage <http://www.norbaf.net> for information on the results.

The intercalibration is organized by NorBAF (Nordic Network - Benthic Algae in Freshwater, www.norbaf.net) and the Department of Aquatic Sciences and Assessment, SLU (Swedish University of Agricultural Sciences, <http://www.slu.se/vatten-miljo>).

It is important to harmonize the diatom identification among the Nordic-Baltic diatomists in order to improve comparisons between different diatom studies, especially as diatom monitoring has increased because of the Water Framework Directive. Based on the experience from the activities in former years, the NorBAF participants agreed to continue with diatom intercalibrations every ~ 3rd to 4th year. SWEDAC (Swedish Board for Accreditation and Conformity Assessment) and SYKE (Finnish Environment Institute) are informed about our activities and the participation of Swedish and Finnish laboratories and consultants.

The diatom intercalibration 2020 will be performed as follows:

1. All participants will receive three diatom samples, all are untreated. The participants will therefore have to prepare their own slides.
2. Preparation, identification and enumeration of the diatoms will follow the Swedish Standard method using diatoms for environmental monitoring ('Påväxt i sjöar och vattendrag – kiselalgsanalys'. In: Handledning för miljöövervakning: Sötvatten, Version 3:2: 2016). Download method at https://pub.epsilon.slu.se/15190/1/P%C3%A5v%C3%A4xt%20i%20sj%C3%B6ar%20och%20vattendrag_Kiselalgsanalys.pdf.
3. Short English description in Status, potential and quality requirements for lakes, watercourses, coastal and transitional waters. Handbook 2007:4, 2010, Swedish EPA: <https://www.havochvatten.se/download/18.2a9b232013c3e8ee03e2aea/1361435208273/handbook-2007-4-status-potential-quality-requirements-for-lakes-watercourses-coastal-and-transitional-waters-english.pdf>.
See also 'Diatom preparation according to Amelie Jarlman, January 2007' at <https://www.slu.se/en/departments/aquatic-sciences-assessment/laboratories/biodiversity-laboratory/Diatoms/diatom-preparation/>
And NORBAF homepage www.norbaf.net
4. The Swedish Standard taxa list and the standard format **must** be used when reporting results.
 1. The taxa list is found here (please only use the "accepted" taxa when reporting results): <http://miljodata.slu.se/mvm/DataContents/Omnidia>
 2. The standard format to add the found taxa is found at https://www.slu.se/globalassets/ew/org/inst/vom/datavardskap/dataleveranser/kiselalger_mall_20180405.xlsx

Use sheet "Dataleverans", and there the columns AH (year of analysis), AL (your Norbaf-intercalibration ID number), AM (the ID of the sample), then copy from taxa-file (see above) the following for each counted taxon in the following columns: AN (Omnidia-code), AO (Dyntaxa-code), AP (name), AQ (author of name). Then use column AU to give the total count of valves of this taxon, AV to give the number of counts you are not sure about of this taxon (cf.), AW-BA to give the number of deformed valves of this taxon (see more under point 7), BB for the mean width of 10-20 ADMI (see below), BC if the taxon just was seen in an overview, but not counted within the 400 valves, and BG if you have a comment.

Please use ONLY taxa which are noted as "accepted" in column B. If you find a taxon not included in the list, please check FIRST in the list of synonyms. If you do not find it there, add it at the end of your taxalist with name and author, note the sizes and make a good picture and send this together with your results to Maria Kahlert.

Note that the taxa list also includes rare taxa. Please make sure that you check all your identified taxa carefully, especially when you find it noted as rare in the literature. In case of doubt, please use the column (AV) in the sheet "Dataleverans" of the standard format to note the number of valves that you decide to add as "cf."

Please also note that it is not required to identify all varieties/species of the *Achnantheidium minutissimum* group with the exception of *Achnantheidium gracillimum* Lange-Bertalot and *Achnantheidium caledonicum* Lange-Bertalot. However, it is necessary to measure the width of 10-20 valves, calculate the mean width and define by this the size group of *Achnantheidium minutissimum*. Note the average width in column BB. Use column BC to note a taxon seen after completed counting.

5. The counts will be evaluated according to Kelly (2001). The results of each participant will be compared with the results of two auditors, familiar with the Swedish Standard method and the Nordic flora (Amelie Jarlman, Jarlman Konsult AB, and Bart Van de Vijver, National Botanic Garden of Belgium).
6. Please note also in the column AW how many valves are deformed. This exercise will be used to evaluate the uncertainty of the Swedish method to count deformed valves. Please separate deformations into the categories 'slightly deformed outline' (column AX), 'strongly deformed outline' (column AY), 'slightly deformed structure' (column AZ) and 'strongly deformed structure' (column BA) for each taxon you find. For examples and pictures of deformed valves, see report: <https://www.lansstyrelsen.se/download/18.26f506e0167c605d56937ded/1550758023858/Rapport-2012-12.pdf>
7. All results will be published on NorBAFs homepage. The participants can choose if they wish to be published with name or anonymously. General information on the dominant taxa and most common errors will be published, with photos, on the NorBAF homepage.
8. The results will be discussed during a workshop held at Norr Malma field station, Lake Erken, 2-5 November 2020. All participants are invited to participate and discuss the results, and also discuss solutions to problematic taxa groups. We will also discuss new literature and new insights gained by the ongoing taxonomical collection done by Amelie Jarlman and Bart van de Vijver. You are welcome to bring own samples if you wish.
New for 2020: 2/11 will be devoted to more basic questions of diatom counting & identification only, whereas 3-5/11 will focus on advanced identification challenges. Thus, experienced analysts can choose to not participate the first day, and all of us can focus on the advanced challenges later on.
9. The price for the intercalibration exercise **including** the workshop will be approximately 5000 SEK including VAT (300 SEK extra for single room, if available). However, depending on a pending application for funding, the price will hopefully be reduced.

Deadlines:

- Before 31st of March 2020 – Announcement of participation and address (to which the samples will be sent) to Maria Kahlert (maria.kahlert@slu.se). Please send as well your invoice address and invoice reference number, if applicable. Please also indicate clearly if you have special requests regarding the specification of the costs, to avoid unnecessary complications later on.
- April-May 2020 – Samples will be sent to the participants
- 17th of July 2020 - Results must be sent to: Anders Stehn (anders.stehn@slu.se). Do not forget to add your Norbaf-intercalibration ID number in column AL.

Kind regards,

Maria Kahlert, NORBAF network coordinator

Reference:

Kelly, M. (2001): Use of similarity measures for quality control of benthic diatom samples. *Wat. Res.* Vol. 35 (11), 2784-2788