## 3rd EcoAlpsWater Project minutes

By Rainer Kurmayer

**Third project meeting in Mondsee, 4.-5. December 2018**

**Meeting venue:**
Universität Innsbruck  
Forschungsinstitut für Limnologie, Mondsee  
Mondseestraße 9  
5310 Mondsee  
Austria

### Schedule

<table>
<thead>
<tr>
<th>Time</th>
<th>From to</th>
<th>Topic</th>
<th>Presenters + Title</th>
<th>Activity/Deliverable (due by Dec 2018)</th>
</tr>
</thead>
</table>
| 13:00 | 16:00  | Validation of WP1 sampling protocols incl. Report on pilot data gathered in WP1+WP3 | 13:00-13:30, Isabelle Domaizon (INRA)  
Validation of EcoALpsWater sampling protocols for eDNA (WP1)  
13:30 – 13:55, Tina Elersek (NIB)  
Slovenia – first freshwater eDNA experience.  
13:55 – 14.20, Rainer Kurmayer (LFUI)  
Comparison of various filtration sampling protocols regarding DNA yield and DNA quality  
14.20 – 14.45, Maxime Logez (AFB)  
Integrative sampling to monitor fish in French rivers and lakes  
14.45 – 15.10, Peter Hufnagl (AGES)  
Analysis of pathogenic organisms at AGES and first tests with the Sterivex filters  
15.10-15.35, Nico Salmaso (FEM)  
Comparison of Vertical filtration and Sterivex for assessing microbiological and microeukaryotic communities: a High Throughput Sequencing approach.  
15.35 – 16.00, Josef Wanzenböck (LFU)  
Sampling and filtrating water for fish e-DNA – recent developments. | Activity A.T1.1: Formalization of protocols to analyze environmental DNA in lakes and rivers.  
and Activity A.T3.1: Set up of pilot actions plans implementing innovative monitoring approaches. Deliverable D.T1.1.1 |
| 16:00 | 16:30  | Coffee break | |
|      |        |        | |


# 3rd EcoAlpsWater Project minutes

## 16:30 - 18:30
### Demonstration/Hands on filtration equipment + sample processing
4 stations in parallel for laboratory/field demonstration of sampling and sample processing:

- Isabelle Domaizon, (INRA)
  Plankton sample processing

- Peter Hufnagl (AGES)
  Pathogenic bacteria sampling + processing

- Marine Vautier (INRA)
  Biofilm sample processing from Lakes+Rivers

- Josef Wanzenböck (LFUI)
  Fish DNA sample processing

## 19:00 - 21:00
### Dinner at Restaurant Krone

## Wednesday 5 December

### 08:00 - 09:00
**Finalization of WP1 sampling protocols (plankton, biofilms, fish) = reading through the document and last text changes, discussion and formal acceptance**

- 8:00-8:15, Isabelle Domaizon (INRA), Plankton sampling protocol
- 8:15 – 8:45, Marine Vautier (INRA), Lake and River biofilm sampling
- 8:45-9:00, Josef Wanzenböck (LFUI), Fish DNA sampling protocol

### 09:00 - 10:00
**WP2, pilot site sampling description**

- 10 min presentations for each country
  - 9:00 – 9:10, Jochen Schaumburg (LfU), Lake Starnberg + River Wertach (Germany)
  - 9:10 - 9:20, Hans Rund (LfU), Lake Mondsee + River Steyr (Austria)
  - 9:20-9:30, Špela Remec Rekar + Tadeja Balanč, (ARSO), Lake Bled and River Soca (Slovenia)
  - 9:30-9:40, Giorgio Franzini, (ARPADV), Lake Garda + River D’Adige (Italy)
  - 9:40-9:50, Marine Vautier, (INRA), Lake Bourget + River Drome
  - 9:50-10:00, Camilla Capelli, (SUPSI), Lake Lugano

### 10:00 - 10:30
**Coffee break**

### 10:30 - 11:30
**WP3, pilots site sampling fine tuning and**

- 10 min presentations for each country
  - 10:30-10:40, Ute Mischke (LfU), Lake Starnberg + River Wertach + extension (Germany)

### Activity A.T1.1 + A.T3.1:
- Deliverable D.T1.2 + D.T1.3

### Activity A.T2.2:
- Pilot activities – Implementing and sharing the protocols, D.T2.2.1, D.T2.2.2

### Activity A.T3.1:
- Set up of pilot actions plans implementing

---

1 Potential lead authors for WP1 sampling protocols
### 3rd Ecoalpswater Project minutes

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>10:40</td>
<td>10:50-10:50, Rainer Kurmayer, (LFUI), Lake Mondsee + River Steyr + extension (Austria)</td>
</tr>
<tr>
<td>10:50</td>
<td>10:50-11:00, Špela Remec Rekar + Tadeja Balanč, (ARSO), Lake Bled + River Soča + extension (Slovenia)</td>
</tr>
<tr>
<td>11:00</td>
<td>11:00-11:10, Federica Giacomazzi, (ARPAV), Lake Garda + River D’Adige + Extension (Italy)</td>
</tr>
<tr>
<td>11:10</td>
<td>11:10-11:20, Isabelle Domaizon (INRA), Lake Bourget + River Dome + extension (France)</td>
</tr>
<tr>
<td>11:20</td>
<td>11:20-11:30, Camilla Capelli (SUPSI), Lake Lugano + extension (Switzerland)</td>
</tr>
<tr>
<td></td>
<td>innovative monitoring approaches. Deliverable D.T3.1.1/ Deliverable D.T3.1.2 and A.T3.2.: Local pilot activities – Key lakes and rivers.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>11:30</td>
<td>Lunch break at Restaurant Krone</td>
</tr>
<tr>
<td>13:00</td>
<td>WORKFLOW from field to labs Incl. proposal data management and templates for metadata storage, Plan on how to arrange NGS data management</td>
</tr>
<tr>
<td></td>
<td>Nico Salmaso, Claudio Donati, Alessandro Cestaro (FEM)</td>
</tr>
<tr>
<td></td>
<td>Activity A.T3.2: Local pilot activities – Key lakes and rivers.</td>
</tr>
<tr>
<td></td>
<td>Deliverables D.T3.1.1, D.T3.1.2 and A.T3.2.: Local pilot activities – Key lakes and rivers.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>14:00</td>
<td>Methods to be used in the field to collect samples for the analysis of cyanotoxins</td>
</tr>
<tr>
<td></td>
<td>Leonardo Cerasino, Adriano Boscai, Nico Salmaso (FEM)</td>
</tr>
<tr>
<td></td>
<td>Deliverables D.T3.2.1, D.T3.3.1, Activity A.T3.4</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>14:30</td>
<td>WPC communication and potential meetings, conferences, presentations ahead (including discussion)</td>
</tr>
<tr>
<td></td>
<td>Tina Elersek (NIB),</td>
</tr>
<tr>
<td></td>
<td>Activity A.C.1: Start-up activities including communication s</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>15:30</td>
<td>Coffee break</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>16:00</td>
<td>Project management, report clarification and other administrative matters (including examples from eMS reporting tool)</td>
</tr>
<tr>
<td></td>
<td>Riccarda Moser (FEM), Nico Salmaso (FEM)</td>
</tr>
</tbody>
</table>

---

2 questions for project reporting; Riccarda Moser agreed to receive in advance the questions; if necessary, the questions will be answered with the help of JS (Primoz). Questions will have a reply and will be discussed at the meeting at Mondsee.
Legend, relevant deliverables (WP1, 2, 3, M):

+) D.T1.1.1: State of the art of methods for the analysis of environmental DNA in lakes and rivers.
+) D.T1.1.2: Identification and formalization of protocols for eDNA analysis (bacteria, algae and fish).
+) D.T1.1.3: Formalization of protocols for smart bioinformatic tools in metabarcoding.
+) D.T1.1.4: Identification and formalization of protocols for the use of HTS data in the next generation monitoring approaches.
+) D.T2.2.1: Identification of key lakes and rivers, and collection of previous knowledge.
+) D.T2.2.2: Documentation of local meetings and recommendations for the tuning of approaches (interaction with WPT1).
+) D.T3.1.1: Pilot actions plans: finetuning of approach to the 6 Alpine Space countries (6 key lakes and 5 rivers). Interm. Reports.
+) D.T3.1.2: Local stakeh. involvement and feedback: final revision and tuning of approaches in single waterbodies. Final reports.
+) D.M.1.1: Drafting agreements in the first Project Steering Group/kick-off meeting
+) D.M.1.2: Project Statute: structure and detailed set of responsibilities and procedures based on partn. agreement and PSG meeting
+}
3rd Ecoalpswater Project minutes
3rd Ecoalpswater Project minutes

Tuesday, 4 Dez, 10-12h, PP2 and PP8, National meeting with observers

Participating: R. Kurmayer, J. Wanzenböck, H. Rund (LFUI), P. Hufnagl, S. Dobrovolny (AGES), D. Pont (Boku), M. Friedl (KIS), E. Sötz (WWF)

Rainer Kurmayer: Presentation of the project itself, its success so far, and what our observers might expect from us PP in the future and vice versa

Discussion:

Elisabeth Sötz:
Consider alpine convention vs. EUSALP, AG 6 (subgroup working with water)
The water platform in the Alpineconvention is currently restructured (so the EUSALP might be the better address)
1st week of March, EUSALP meeting in Carinthia, we can be invited either by Provinz of Carinthia, Nico or Elisabeth, if Presidentship is changing, usually there is a dissemination event to the public, the next official EUSALP meeting will be in Nov. in Milano
At the end of 2020/early 2021 there will be a big event in France, organized as a so-called “Alpweek” which might well be suitable to present first project results
EUSALP, AG6, subgroup water, has a focus on flood protection or drought management, we can apply to present our project, we also could apply to be a member of this group

Maria Friedl:
How do we imagine to integrate the project results, how much work is it?
According to GZÜV for lakes Chl. a, biovolume and species list will be recorded, and out of this water quality will be estimated (Brettum Index), regarding the project a Metabarcoding species list is obtained
This new Metabarcoding species list should be compared to traditional species lists and benefits and disadvantages evaluated, in a first step, the species list has to be prepared from PP2 and made readable, for example with regard to species names, (i.e. many species names which are used in traditional algae counting do not exist in the taxonomic databases anymore, e.g. Anabaena flos-aquae), the preparation by PP2 however hopefully helps to keep the time effort by KIS reasonable

The wish is that experts dealing with application of WFD parameters regularly like Maria Friedl from KIS then evaluate potential useful information which can improve or complement the standard WFD evaluation (eg with regard to species occurrence confirmation, or information on invasive species).
Another question of Maria Friedl is regarding the quantitative information, currently Metabarcoding can give semi-quantitative information which can be used also, e.g. species (OTUs) occurring with 1000nds of reads probably occur in higher numbers than species (OTUs) occurring with 10 reads only, currently absolute quantitative information is possible with independent PCR-based tools such as qPCR or ddPCR.

We are discussing additional optional information, such as fish species occurrence, for example several oligotrophic-mesotrophic lakes in Carinthia are currently evaluated good, because certain original fish species are missing as recording by electrofishing through the WFD (E.g. minnow). Thus the recording of Fish DNA of minnows would be a potentially useful information with regard to fish BQE based evaluation.

Stefanie Dobrovolny:

First tests with Tillmar et al (2013) primers from lake water samples (500 ml) were negative.

Maria Friedl:

We also talk about the possibility to perform plankton, biofilm and fish eDNA sampling in the oligotrophic Faakersee (in Carinthia) during summer 2019.

End of the observers meeting
Start 13:45 - 18:00, Tuesday, 4. Dec, total of 37 registered participants

First Topic: Validation of WP1 sampling protocols incl. Report on pilot data gathered in WP1+WP3

+) Introduction by Isabelle Domaizon

Isabelle gives an Introduction to eDNA + Metabarcoding as well as the respective taxonomic gene loci that will be used, further the various question on sampling that were proposed (eg how, where and how much to sample), transport of samples, way of filtration, etc. as well as an introduction to the proposed workflow

Summary on advancements regarding 1) biofilm sampling (both river and lake biofilm sampling protocols are nearly finished, a draft in Word and a video on the method are available), 2), Plankton sampling including a protocol using the so called Sterivex Filter option developed by Mobio (Qiagen), both Word file and Video are available, 3) fish sampling, for which a draft protocol has been prepared

The protocols are then presented in more detail

Biofilm sampling: incl. a brief history on CEN reporting, publishing of technical reports (aiming on intercalibration excercises), tests included 12 stations in L. Bourget, 21 stations in L. Aiguebelette

Lake Plankton sampling: questions from the beginning included type of filtration, type of preservation, the DNA yield from Sterivex and classical filter harvest was compared, indeed the DNA yield obtained from Sterivex stored in lysis buffer was higher than stored at -20°C, nevertheless the qPCR determined 16S rDNA cyanobacteria quantity was comparable

Fish sampling: was performed already in L. Bourget at 44 sites (2.5 days of sampling) in the littoral, benthic and pelagic, water samples were filtered in parallel by Sterivex filtration, using this (self-made) filtration device ten station were filtrated in duplicate in ca 1h

+) Slovenian Experience by Tina Elersek

Comparison of DNA yield through filter harvest and Sterivex option using classical Phenol-Chloroform extraction

+) Comparison of various filtration, preservation and extraction methods (Rainer Kurmayer)

Using a factorial design approach technical questions emerged during writing the WP1 sampling protocol were tested, the most important result is that the use of Sterivex option for filtration and subsequent DNA extraction provided results which did not differ from classical filters in combination with standard phenol-chloroform extraction, However the use of standard Tris/EDTA/Sucrose lysis buffer as preservation agent cannot be recommended over classical -20°C as potential growth of bacteria on the filter might be difficult to control

+) Fish monitoring of surface waters (Maxime Logez)

AFP is in charge with monitoring tasks, the goal of AFB is to develop innovative methods for monitoring, and AFB has a partnership with the Spygen company,

For both lakes + river the so-called integrative sampling is used (by filtering large amounts of water onto cartridges, i.e. 45 L) and 12S rDNA amplification and sequencing

The integrative sampling is performed with swimming automated sampling devices
3rd Ecoalps Water Project minutes

General Result: Comparing traditional fishing data with eDNA methods can reveal a higher number of fish species, considering spatial distribution (vertical profile) also can play a role

+) pathogen in water monitoring (Peter Hufnagl)

A list with pathogenic organisms that are currently monitored at AGES is presented, in general positive samples need to be confirmed independently once, AGES is applying eDNA methods for screening, while the differentiation between eDNA and living cells is still important

For pathogenic microorganism sampling a short introduction is given (material requirements): in general material are either sterile and one-way use only or from metal, which can be heat-sterilized, pathogenic bacteria samples must be taken with a long handle and filled in sterile 250 ml Bottles which are touched only outside with gloves, the 250 ml Bottles shall not be completely full and transported at ca5°C with a cooling box to the laboratory (< 24 h between sampling + processing in the lab),

NGS output analysis is by “Kraken” which uses Kmers algorithm instead of OTU definition,

For obtained cultures stripes with antibiotics are used to identify respective efficiency, AGES holds a MALDI-TOF MS library for mass spectra to identify microorganisms

An example is given from Vibrio cholera which does not produce the classical Choleratoxin but destroys human tissues after infection (examples from summer 2015),

The modern genotyping of this cultivars is performed using Seqsphere, were more 3000 gene loci are analysed from obtained genome sequences, in this example the two pathogenic cultivars were not closely related implying the occurrence of huge populations in the environment

+) comparison of Sterivex filters and classical filtration (Nico Salmaso)

For both types the Power Water Kit protocol or the Sterivex Power Water kit Protocol were used, according to the NGS experience at FEM a DNA yield of 3 ng/µl in total of 50 µl volume will be sufficient to provide reliable results using 16SD and 18S rDNA sequencing

At FEM Bacteria taxonomy is based on Amplicon sequence variants (ASV) which in contrast to OTUs can better resolve population structure at the strain (genotype) level (E.g. Legionella),

The reference database used is the Silva database 1.3.2, however in this database and subsequent versions for unknown reasons the Oscillatoriales are included under Nostocales at the order level, if such mistakes are not discovered during NGS data processing, potentially errors in taxonomic assignment would be introduced into community analysis on respective taxonomic levels

Notably Tychonema was only detected in DNA extracts obtained from Sterivex filters, however in general the difference visible in community composition from the different filters was found small

Both 16S and 18S rDNA communities differ between open water and shore samples irrespective of the type of filtration used

+) sampling + filtration of water for fish (Josef Wanzenböck)

In general for WFD not only the taxonomic inventory is compared but age distribution is required as, currently there is no possibility for eDNA based methods to obtain results on age distribution

Presentation of student results from earlier project, during a time series for eDNA in Zeller Ache (tributary to L. Mondsee) eDNA of spawning fish species correlated with visual observation of adult...
3rd Ecoalpswater Project minutes

fish in the river, however at a later stage when larvae were hatching from eggs and adult fish migrated back to the lake, the eDNA signal got decoupled from fish countings.

For this project’s fish DNA sampling a 2 strategy protocol is proposed:

1) A low effort sampling strategy which is based on sampling sites used for electrofishing as proposed by the CEN in combination with a few pelagic samples, 2 L of water will be filtered onto Sterivex filters, most importantly this low effort No. of Samples is also related to the size of the various pilot key lakes.

2) A high effort sampling strategy that follows exactly the gill net and electrofishing positions as proposed by the CEN (for Mondsee this will be 84 sites), for PP2 the key pilot site has been changed from Hallstätter see to Mondsee because Mondsee will be evaluated by fish sampling in the year 2020, consequently spatial eDNA samples can be performed in parallel.

3) For rivers again a low effort sampling strategy is proposed which consists of collecting point samples through a 100 m river stretch (9 samples), the 100 m river stretch is proposed by CEN for low order streams.

A discussion is started on the possibility of integrative sampling vs. point sampling, J. Wanzenböck is proposing to organize a 1-day workshop on this issue in January 2019.

18:00 – 19:00, Demonstration/Hands on filtration equipment + sample processing

The following sampling protocols were demonstrated:

+) Plankton sampling using the Sterivex filter option and syringe (I. Domaizon)

+) Biofilm sampling by brushing 100 cm2 of the surface of 5 stones sampled from the field (M. Vautier)

+) Fish DNA sampling by classical vertical filtration (H. Rund)

+) pathogenic microorganism sampling (P. Hufnagl)
Wednesday, 5 Dec, 8h – 10h, Reading through the WP1 sampling protocols

1.) WP1 plankton lake sampling protocol, Isabelle Domaizon

Status: approved with minor changes

Discussion in the plenum on how to clean sample devices (integrated automated sampler, Schindler/Ruttner sampler, Van Dorn sampler, tube sampler), it is generally agreed that cleaning of sampling devices will also destroy the instruments in the long term (eg during 2 years), instead it is recommended that sampling devices are stored dry and clean (eg washing after sampling with tap water) and stored dry, The first sample should be used to rinse (= flush) the sampling device each time

2.) WP1 lake biofilm sampling protocol, Isabelle Domaizon

Status: approved with minor changes (incl. of restructuring the sampling information sheet, in coop. with Jochen Schaumburg, eg definition and consistent use of samples, sites, and stations)

3.) WP1, fish sampling protocol, Josef Wanzenböck

+) Discussion of the minimum effort lake sampling protocol in the plenum, basically the No of minimum samples are scaled to the lake surface area and according to electrofishing sites as foreseen by the CEN Standard (eg Mondsee has 14 stations for electrofishing at the lake shore), Sterivex filtration (0.45 µm) is recommended

+) Discussion of the minimum effort river sampling protocol, proposed are ten (10) individul Point samples along the river stretch (100m) defined by the CEN, Sterivex filtration (0.45 µm) is recommended

+) Discussion on a high sampling effort, which would include several (100 m) stretches along the river, larger rivers also require longer stretches (up to 1 km) as defined by the WFD, however the basic idea of the project that WFD standardized methods are compared with eDNA methods should be used to define manageable sampling areas

The high effort lake sampling protocol will consist of point sampling along with gill net sites and electrofishing sites, i.e. for Mondsee this will make 14 (littoral) + 64 (benthic) + 6 (pelagic) = 84 point samples (taken with an automated integrated water sampler), The sampler will be rinsed with water between the sampling stations

Within the project 3 key lakes will be sampled using the high effort lake sampling protocol, Bled (Slovenia), Mondsee (Austria), Starnberg (Germany), since the lakes differ in size quite substantially, this approach could give a useful information on spatial distribution patterns

Discussion about the use of so-called integrated sampling using larger filter capsules (as proposed by AFB), currently no protocols are available and time is running out with testing, since the capsules are expensive (ca 100 € minimum) trials are also costly, thus the pragmatic solution for now might be the Sterivex filters using the existing and tested DNA extraction protocols.

Elisabeth Sötz: on a political level WFD might not persist behind 2021 or 2027 cycle of WFD implementation, one important aim of WFD is also to evaluate the restoration effort, and for this aim the traditional methods are not so sensitive to rare species detection, thus WFD type of evaluation itself might be challenged in the future
3rd Ecoalpswater Project minutes

**Wednesday, 5 Dec, 10h-13h, WP2 key sampling site description + WP3 sampling plan fine tuning**

The key pilot sites are introduced by the relevant partners (WP2)

+) Camilla Capelli: L. Lugano

+) Giorgio Franzini: L. Garda, R. Adige

+) Špela Remec Rekar: L. Bled

+) Tadeja Balanč: R. Soca

+) Hans Rund: L. Mondsee + R. Steyr

+) Ute Mischke: Starnberger See, R. Wertach

+) Christian Vogelmann: R. Wertach

+) Marine Vautier: L. Bourget, R. Drome

For each of the key pilot sites the general WP1 sampling plans are adapted to the local site conditions

+ Camilla Capelli: L. Lugano

Incl. lake plankton sampling, lake biofilm sampling, For fish biomonitoring the minimum sampling effort will be performed

+ Isabelle Domaizon: L. Bourget + R. Drome

Incl lake plankton sampling, Lake biofilm sampling in L. Bourget will include a pollution gradient induced by the Leyse River (and sampling stations will be arranged accordingly)

Fish sampling has been performed already using 50 stations distributed over littoral, benthic and pelagic areas and filtered using the Sterivex filter option,

R. Drome will be sampled with 4 stations (1 sample/y), restoration site of the Hymocares project

Addit biofilm samples in 3 lakes (3 stations/y)

+ Frederica Giacomazzi: L. Garda + R. Adige

Incl. lake plankton sampling (an automated integr. Water sampler is ordered), DNA samples will be filtered on boat

Incl biofilm sampling (diatoms only) and brushing the stones in the field, storing samples at -20°C

+ Špela Remec Rekar, L. Bled

Incl. plankton sampling, and lake biofilm sampling (three regular stations are in use already, and 7 stations will be defined new already),

L. Bohinj, which belongs to the WFD reference lakes will be included in extension

+ Tadeja Balanč, Soca river

Incl River biofilm sampling and Drava River, representing also a project site of the Hymocares project,

Brushing of stones will be performed in the field

+ Rainer Kurmayer, L. Mondsee + River Steyr (Spare project key site), in general sample will be transported and filtered in the laboratory
3rd EcoAlpswater Project minutes

Extension to oligotrophic reference lakes (Hallstädtersee, Faakersee) and restoration site (R. Salzach), key site of the Hymocares project

Wednesday, 5 Dec, 14h-17h, Project management

+) Nico Salmaso, Workflow from field to the lab and proposed data management

Focus is on the near future, and it is important to know the data structure + archives at an early stage,

A unique mandatory sample code is proposed to label every sample (metadata) and corresponding sequencing results (FASTQ files + sequence quality files)

Field measurements + lab data: PPs may measure as many environmental variables as possible, an preformatted excel spreadsheet is proposed with variables which are either mandatory or recommended, this spreadsheet will then be used on an accessible IT-platform

Discussion on how detailed the chemical analysis should be? For example since the entire Alpine Arc is sampled the information on ionic balance might be valuable

+) Alessandro Cestaro, bioinformatics database

An introduction to data stewardship is given: the FAIR guiding principles for scientific data management and stewardship

FAIR = Findable, Accessible, Interoperable, Re-usable (see Article in Scientific Data)

Introduction to ELIXIR: private consortium for the continuity of data in biology (example: Microb3-Ocean sampling day handbook = definition of minimum information content)

A simple website will be used to store data + metadata, and data will be available under controlled access, e.g. Open Science data cloud

Alternatively the data could be submitted to public database (BioSamples, BioStudies, NCBI/EBI)

+) Nico Salmaso, Cyanotoxin sampling

Although the cyanotoxins are not in the direct focus of this project, the sampling program across the Alpine Arc would provide a unique possibility also for cyanotoxin sampling.

Nico would like to focus on benthic cyanotoxins = cyanotoxins from biofilms (for example anatoxin-a producing Phormidium mats in a river in New Zealand, Quiblier et al. 2013), useful reference: Report No2752 (Advice to inform the development of a benthic cyanobacterium attribute)

Other examples include Gugger et al. (2005), 6-60 g of anatoxin a contained in Phormidium are sufficient to kill 2 dogs (2.5 – 25 kg), or Tychonema from Littoral (Fastner et al. 2018 in Toxins)

The patchiness of anatoxin-a distribution has been studied in Spain by Aboal et al. 2017 (in Toxins) Are we understanding benthic cyanotoxins in Spain?

Nico will be prepare two additional sampling protocols (lake plankton and from stones) that will describe how to sample cyanotoxins, for Lake plankton the samples should be aliquots of eDNA sampling, using two extra GF/C filters (47mm in diameter) for biomass collection (one filter is used for cyanotoxin extraction, and one filter is used for dry weight determination)

Analogously for stones, biomass should be scratched off using a scalpel, and then distributed in aliquots for cyanotoxin extraction and dry weight determination
3rd Ecoalpswater Project minutes

+) Tina Elerse and Nico, WP C + WP M

Introduction to the recently launched project website

Tasks for every PP include translate presentation + Poster to native language and prepare the flyer in native language as well

The first project reporting period closes at 31 December 2018, the project deadline for reporting is 31 March 2019!

News from the JS: None of the deliverables are uploaded to the eMS anymore, instead a link will be provided to Dropbox/Folder deliverables for download (eg delivered reports), Nico has already uploaded the deliverables of the WP M

Task: Nico will establish a working group to make rules on how to use the data in the future

Next project meeting will be held in Thonon (incl Steering committee meeting)

New member in project management: Elisa Caturan from STArTER (Padua), welcome!

+) Riccarda Moser (Financial manager)

The eMS tool has a default max of 2 users

Important note: certification of eMS input by respective FLC can take 60 days!, contact your FLC to start procedure, the internal project deadline is 11 March 2019, which implies that all PP have to finish their eMS input at 11 January!?

PP report site in the eMS tool:

1) Summary of PP work (output and target group)
2) Expenditures, do not upload, just store (payment = cashflow)
3) Contribution forecast
4) Project assignment (defines the eligible share of staff costs)
5) Task report template (time record can exceed the staff costs given in the project assignment, it just should not be less), not reporting = underspending

Concerning eligibility: receipts must have project acronym “Eco-Alps Water”

Documentation of personnel selection + contracting procedure

Travel costs (shall not exceed national daily subsistence allowance + accommodation)

External expertise + service costs (usually 3 offers are required, announcement should not be too direct and direct calls should be avoided)

End of meetings