ECOBIAS

Annex1. Attendance List
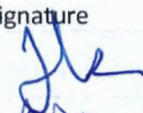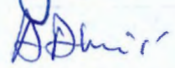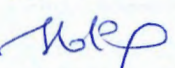
Event	Retraining in the course eDNA monitoring
Venue	P4 UNIVERSITY OF DUISBURG-ESSEN, Universitaetsstr. 5, Faculty of Biology, Room S05 V05 F02 + S05 V05 F13, Aquatic Ecosystem Research, 45141 Essen, Germany
Date	17th May 2022
Organiser(s)	P4 UNIVERSITY OF DUISBURG-ESSEN

No	Name and Surname	Institution	Signature
1.	Yasmina Kambeović	University of TUZLA P8	
2.	Adisa Ahmić	University of Tuzla P8	
3.	Edina Hajdarević	University of Tuzla P8	
4.	Martina Weiss	University of Duisburg Essen P4	
5.	FLORIAN LEESE	" " "	
6.	Robin Schütz	"	
7.	Cristina Hartmann-Fatu	Univ. Duisburg-Essen	

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ECOBIAS
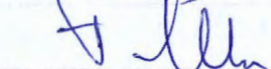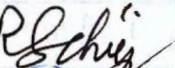
Annex1. Attendance List

Event	Retraining in the course eDNA monitoring
Venue	P4 UNIVERSITY OF DUISBURG-ESSEN, Universitaetsstr. 5, Faculty of Biology, Room S05 V05 F02 + S05 V05 F13, Aquatic Ecosystem Research, 45141 Essen, Germany
Date	18th May 2022
Organiser(s)	P4 UNIVERSITY OF DUISBURG-ESSEN

No	Name and Surname	Institution	Signature
1.	Yasmin Kanbeow	University of Tuzla P8	
2.	Adisa Ahmić	University of Tuzla P8	
3.	Edina Hajdarević	University of Tuzla P8	
4.	Martina Weiss	University of Duisburg-Essen P4	
5.	FLORIAN LEESE	" "	
6.	Robin Schütz	"	
7.	Cristina Hartmann-Fatu	Univ. Duisburg-Essen	

Annex1. Attendance List
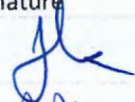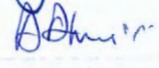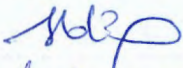
Event	Retraining in the course eDNA monitoring
Venue	P4 UNIVERSITY OF DUISBURG-ESSEN, Universitaetsstr. 5, Faculty of Biology, Room S05 V05 F02 + S05 V05 F13, Aquatic Ecosystem Research, 45141 Essen, Germany
Date	19th May 2022
Organiser(s)	P4 UNIVERSITY OF DUISBURG-ESSEN

No	Name and Surname	Institution	Signature
1.	Yasmina Kaunberović	University of Tuzla P8	*signature*
2.	Adisa Ahmić	University of Tuzla P8	*signature*
3.	Edina Hajdarević	University of Tuzla P8	*signature*
4.	Martina Weiss	University of Duisburg-Essen	*signature*
5.	FLORIAN LEESE	" " " "	*signature*
6.	Robin Schütz	"	*signature*
7.	Till Macher	"	*signature*
8.	Cristina Hartmann-Fatu	Univ. Duisburg-Essen	*signature*

Annex1. Attendance List

Event	Retraining in the course eDNA monitoring
Venue	P4 UNIVERSITY OF DUISBURG-ESSEN, Universitaetsstr. 5, Faculty of Biology, Room S05 V05 F02 + S05 V05 F13, Aquatic Ecosystem Research, 45141 Essen, Germany
Date	20th May 2022
Organiser(s)	P4 UNIVERSITY OF DUISBURG-ESSEN

No	Name and Surname	Institution	Signature
1.	Yasmina Kaurband	University of Tuzla P8	
2.	Adisa Ahmic	University of Tuzla P8	
3.	Edine Mejdarević	University of Tuzla P8	
4.	Martina Weiss	University of Duisburg-Essen	
5.	FLORIAN LEESE	"	
6.	Robin Schütz	"	
7.	Cristina Hartmann-Fatu	Univ. Duisburg-Essen	

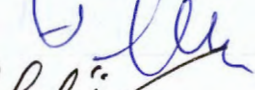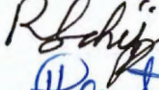# Annex1. Attendance List

Event	Retraining in the course eDNA monitoring
Venue	**P4 UNIVERSITY OF DUISBURG-ESSEN, Universitaetsstr. 5, Faculty of Biology, Room S05 V05 F02 + S05 V05 F13, Aquatic Ecosystem Research, 45141 Essen, Germany**
Date	**21ᵗʰ May 2022**
Organiser(s)	**P4 UNIVERSITY OF DUISBURG-ESSEN**

No	Name and Surname	Institution	Signature
1.	Jasmina Kamberović	University of Tuzla	Jasmin k.
2.	Alisa Ahmu'	University of Turla	A Ahmi'
3.	Edine Hojdarević	University of Turk PP	
4.	FLORIAN LEESE	" of Duisburg-Ese	F. Lee

Annex 2. Training Evaluation Form

Prepared by Prof Snežana Radulović UNS in line with the Steering committee decision
https://www.ecobiaserasmus.com/2020/03/23/vis-major-action-of-partners-solidarity-zagreb/

Part 1: Training Information

Date 17 May – 21 May 2022

Place P4 UNIVERSITY OF DUISBURG-ESSEN, Universitaetsstr. 5, Faculty of Biology, Room S05 V05 F02 + S05 V05 F13, Aquatic Ecosystem Research, 45141 Essen, Germany

Training Course: eDNA monitoring
Lecturers: Prof. Dr. Florian Leese, Dr. Martina Weiss, Dr. Cristina Hartmann-Fatu, MSc. Robin Schütz, MSc. Till-Hendrik Macher

Period of training assessed YES/NO

Overall assessment (descriptive please)
eDNA retraining was very interesting, useful, innovative and very well organized. Lab work optimization protocols sampling, analysis were included. Absolutely perfect organized event.

I want to stay anonymous YES/NO   If no please sign _Yasmina Kausedu_

Part 2: Organization

Organizational feature	3 Strongly Agree	2 Agree	1 Disagree	0 Strongly Disagree
The training course textbook was delivered on time	3			
The timeframe was well used	3			
Program strengths evident	3			

Total: 3 x 3 = 9

Part 3: Structure

Structure features	3 Strongly Agree	2 Agree	1 Disagree	0 Strongly Disagree
The textbook meets my expectation	3			
The lecturer was well prepared	3			
I would recommend the textbook to my colleagues	3			
The presentation meets my expectation	3			
Opportunities for participant questions provided	3			
Skill practice sessions were included	3			
Information given were accurate & current	3			
Real life examples were given	3			
Other (please specify)	③ very well organized			

Total: $3 \times 9 = 27$

The information in this section helps us know more about the people we reach with our programs. This section is completely voluntary and anonymous.

What is your gender?   (Female)   Male   Non-binary

Annex 2. Training Evaluation Form

Prepared by Prof Snežana Radulović UNS in line with the Steering committee decision
https://www.ecobiaserasmus.com/2020/03/23/vis-major-action-of-partners-solidarity-zagreb/

Part 1: Training Information

Date 17 May – 21 May 2022

Place P4 UNIVERSITY OF DUISBURG-ESSEN, Universitaetsstr. 5, Faculty of Biology, Room S05 V05 F02 + S05 V05 F13, Aquatic Ecosystem Research, 45141 Essen, Germany

Training Course: eDNA monitoring
Lecturers: Prof. Dr. Florian Leese, Dr. Martina Weiss, Dr. Cristina Hartmann-Fatu, MSc. Robin Schütz, MSc. Till-Hendrik Macher

Period of training assessed YES/NO

Overall assessment (descriptive please)
I am very happy with the training from the environmental DNA. I have acquired skills that that I can pass onto students.

I want to stay anonymous YES/NO   If no please sign _Adisa Ahmi'_

Part 2: Organization

Organizational feature	3 Strongly Agree	2 Agree	1 Disagree	0 Strongly Disagree
The training course textbook was delivered on time	3			
The timeframe was well used	3			
Program strengths evident	3			
				Total: 3x3 = 9

Part 3: Structure

Structure features	3 Strongly Agree	2 Agree	1 Disagree	0 Strongly Disagree
The textbook meets my expectation	3			
The lecturer was well prepared	3			
I would recommend the textbook to my colleagues	3			
The presentation meets my expectation	3			
Opportunities for participant questions provided	3			
Skill practice sessions were included	3			
Information given were accurate & current	3			
Real life examples were given	3			
Other (please specify)	3 very well organized			

Total: 3×9 =27

The information in this section helps us know more about the people we reach with our programs. This section is completely voluntary and anonymous.

What is your gender? (Female)   Male   Non-binary

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Annex 2. Training Evaluation Form

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Part 1: Training Information

Date 17 May – 21 May 2022

Place P4 UNIVERSITY OF DUISBURG-ESSEN, Universitaetsstr. 5, Faculty of Biology, Room S05 V05 F02 + S05 V05 F13, Aquatic Ecosystem Research, 45141 Essen, Germany

Training Course: eDNA monitoring
Lecturers: Prof. Dr. Florian Leese, Dr. Martina Weiss, Dr. Cristina Hartmann-Fatu, MSc. Robin Schütz, MSc. Till-Hendrik Macher

Period of training assessed YES/NO

Overall assessment (descriptive please) I am very satisfied with retraining from the eDNA. Everything was helpful, useful and clear. The organization of retraining was very well and perfect.

I want to stay anonymous YES/(NO)   If no please sign _Edina Hajdarević_

Part 2: Organization

Organizational feature	3 Strongly Agree	2 Agree	1 Disagree	0 Strongly Disagree
The training course textbook was delivered on time	3			
The timeframe was well used	3			
Program strengths evident	3			

Total: 3×3=9

Part 3: Structure

Structure features	3 Strongly Agree	2 Agree	1 Disagree	0 Strongly Disagree
The textbook meets my expectation	3			
The lecturer was well prepared	3			
I would recommend the textbook to my colleagues	3			
The presentation meets my expectation	3			
Opportunities for participant questions provided	3			
Skill practice sessions were included	3			
Information given were accurate & current	3			
Real life examples were given	3			
Other (please specify)	3 excellent organized			

Total: 27

The information in this section helps us know more about the people we reach with our programs. This section is completely voluntary and anonymous.

What is your gender?   (Female)   Male   Non-binary

ECOBIAS

Annex 4. Summary of the Participant Feedback Form for Training (to be filled by host institution)

Part 1: Training Information
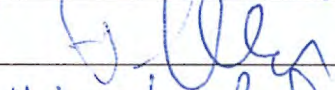
Date 17 May – 21 May 2022
Place P4 UNIVERSITY OF DUISBURG-ESSEN, Universitaetsstr. 5, Faculty of Biology, Room S05 V05 F02 + S05 V05 F13, Aquatic Ecosystem Research, 45141 Essen, Germany

Training objective: As part of the eDNA training we repeated a general theoretical introduction into DNA extraction, PCR, sequencing and ecological analysis. However, the main focus of days 1-4 was on the practical application of the methods. Day 1 focussed on extracting eDNA from aquatic ecosystems using two different approaches (syringe filtering with encapsuled filters, battery-driven open filters). Also, general rules for working in eDNA labs were introduced and trained. Day 2 focussed on the basics of eDNA metabarcoding PCR focussing on three biological quality elements broadly used in Ecological monitoring: diatoms (rbcl gene), fish (12S gene) and macroinvertebrates (COI gene). Similar to day 1, all participants processed their samples individually and received individual feedback on the performance. Day 3 started with troubleshooting of the results and a second round of optimized DNA metabarcoding analyses was done to improve results. This troubleshooting aspects was accompanied by theoretical / conceptual aspects of PCR reactions (role of different confounding factors such as DNA concentration, inhibitors, quality of consumables and cyclers etc.). Day4 focussed on an introduction as well as individual training of bioinformatic analyses of eDNA metabarcoding data. For this purpose the trainer introduced the participants to open-access software developed by the team (APSCALE, BOLDIGGER; TAXONTABLETOOLS). Day3 (afternoon) and Day 5 (morning) focussed drafting the curriculum for the training school in autumn 2022 in Tuzla. Content, training material was discussed and a workplan for the training school (especially partitioning of content into subgroups given that 55 participants are expected) was developed, as well as a concept for the long-term training as part of the standard curriculum (max. 10 people per training module).

Evaluator name _Prof. Dr. FLORIAN LEEE_

Signature_____

Evaluator affiliation _University of Duisburg-Essen_

Part 2: Organization and Structure

Organizational feature	3 Strongly Agree	2 Agree	1 Disagree	0 Strongly Disagree
The objectives of the training were clearly defined	3 x 3			
Information related to each item prepared well in advance of the training	3 x 3			
The material distributed were helpful and on time	3 x 3			
The presentations met my expectation	3 x 3			
Participation and interactions were encouraged by moderator	3 x 3			
The training objectives were met	3 x 3			
I will be able to apply the training's content in my future work	3 x 3			
The training content was challenging enough	3 x 3			
The timeframe was adequate	3 x 3			
The facilities were adequate	3 x 3			
Skill practice sessions were included	3 x 3			
Suggestion and criticism box (please specify)				

Total: 99

Annex 10. EVENT REPORT

Title of document	Event report of the Retraining in the course eDNA monitoring
Work Package	Development
Last version date	21.May 2022
Status	Draft **Final**
Document version	v.01
File name	Event report of the eDNA training May Essen 2022
Number of pages	23
Dissemination Level	Internal

VERSIONING AND CONTRIBUTION HISTORY

Version	Date	Revision Description	Partner Responsibile
v.01	21.May 2022	First draft	P4

LIST OF ABBREVIATIONS

Purpose, objectives and elements of event

LIST OF PARTICIPANTS

Adisa Ahmic

Edina Hajdarevic

Cristina Hartmann-Fatu

Jasmina Kamberovic

Florian Leese

Till-Hendrik Macher

Robin Schütz

Martina Weiss

Date of the 1ˢᵗ day: 17.05.2022

Date of the 2ⁿᵈ day: 18.05.2022

Date of the 3ⁿᵈ day: 19.05.2022

Date of the 4ⁿᵈ day: 20.05.2022

Date of the 5ⁿᵈ day: 21.05.2022

CONCLUSIONS

The goals of the retraining eDNA workshop have been successfully achieved. All participants from University of Tuzla received a theoretical introduction into all steps of eDNA-based monitoring by the participants from P4 (University of Duisburg-Essen), then performed all steps from eDNA sampling to PCR and sequence analysis individually. Troubleshooting was performed and strategies discussed. The concept of the training material was refined and missing paragraphs identified. Furthermore, all members discussed the summer school programme (University of Tuzla, September 2022) in detail and identified the next steps to finalise the preparation.

Annex 13. Epidemiological list

EPIDEMIOGICAL SARS-CoV-2 DOCUMENT Catalog ID_____

ECOBIAS Retraining in eDNA; 17 May – 21 May 2022;

Name and surname	
Home address	
Home phone number	
ID number, state	
Passport number	
Passport issued place	
Affiliation/University	

Please read this very carefully and answer the questions		
Have you ever suffered from COVID 19 infection?		
YES	NO	
If YES, do you have two negative tests afterwards on SARS-CoV-2? Please provide it (mandatory, time, laboratory and methodology) *If YES, and you can't provide two negative tests, unfortunately you are not allowed to participate at the meeting, so we kindly ask you to connect with us online.*		
To your best knowledge, have you ever been in any contact with a person who suffering Covid 19 infection?		
YES	NO	
If yes, please give the time and place of the last contact (day, place, state).		

If the time frame is less than 15 days unfortunately you are not allowed to participate at the meeting, so we kindly ask you to connect with us online.

To your best knowledge, have you ever been in any contact with a person who was in contact with the person suffering Covid 19 infection (contact secondary vector)?		
YES	NO	

If yes, please give the time and place of the last contact (day, place, state)

Do you consider yourself a risk group for SARS-CoV-2 virus infection? (no need to state a reason)		
YES	NO	

SARS CoV2 rapid antigen tests were performed twice during the period by all participants

Hereby I declare under full ethical, financial and law responsibility, that all the above information are correct and that I am familiar with and I agree with the security epidemiological conditions under which the meeting is organized.
Participant signature _____

Social media documentation / selection of photographs

Fig. 1: Two examples of twitter information on the workshop hosted by P4.

Fig. 2: Instagram report on the training workshop.

Photo 1: Participants of the workshop. Missing: C. Hartmann-Fatu and T. Macher.

Photo 2: Sampling of eDNA from water was part of the retraining programme

Photo 3: Training of DNA extraction and PCR in the eDNA lab.

Photo 4: Validation of results in the laboratory.

Photo 5: Validation of results in the laboratory.

Photo 6: Introduction into high-throughput sequencing.

Photo 7: Introduction into high-throughput sequencing.

Photo 8: Planning of summer school.

Retraining in Environmental DNA monitoring (eDNA)

17.05. – 21.05.2022

Host: University of Duisburg-Essen

Lecturers: Prof. Dr. Florian Leese, Dr. Martina Weiss, Dr. Cristina Hartmann-Fatu, MSc. Robin Schütz, MSc. Till-Hendrik Macher

AGENDA

Tuesday 17.05.2022 (Leese, Schütz, Weiss, Hartmann-Fatu)

08:30 – 12:00
- Welcome note and schedule overview   - Introduction to the eDNA lab   - eDNA sampling and water filtering (different methods)   - eDNA extraction (lysis)

13:00 – 17:00
- eDNA extraction (continuation)   - success control (gel electrophoresis)

Wednesday 18.05.2022 (Leese, Schütz, Weiss, Hartmann-Fatu)

09:00 – 12:00

- Discussion of results of day one and trouble shooting
- Preparation of eDNA metabarcoding PCR reactions (target: diatoms)

13:00 – 17:00

- Preparation of eDNA metabarcoding PCR reactions (target: fish)
- success control all PCR reactions
- PCR trouble shooting

Thursday 19.05.2022 (Leese, Weiss, Macher, Hartmann-Fatu, Schütz)

09:00 – 12:00

- Summary previous day and Q&A
- Introduction into bioinformatic processing of eDNA metabarcoding data (quality check, primer trimming, merging, OTU/ASV clustering, taxonomic assignment)

13:00 – 17:00

- Bioinformatic processing of eDNA metabarcoding data (on participant computers)
- Apscale, BOLDigger and TaxonTableTools

Friday 20.05.2022 (Leese, Weiss, Hartmann-Fatu, Schütz)

09:00 – 12:00

- Summary previous day and Q&A
- Discuss book and training material for summer school

13:00 – 15:00

- Discussion and finalization of summer school schedule

Saturday 21.05.2022 (Leese)

09:00 – 12:00

- Evaluation of training workshop
- Summer school planning