MONITORING THE ENVIRONMENTAL IMPACT OF THE WORKS REGARDING THE IMPROVING OF THE NAVIGATION CONDITIONS ON THE DANUBE RIVER BETWEEN CALARASI AND BRAILA, KM 375-175

MONTHLY REPORT N0. 82

01 – 28 February 2018

FINAL VERSION

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CONTENT

1. INTRODUCTION

1.1. Brief presentation of monitored objectives

I. This report presents the monitoring objectives for the period 01-28 February 2018.

For post-construction phase the monitoring frequencies for the environmental components are presented in Table 1.1.

II. *3D numerical modeling*

During this period have been conducted single-beam bathymetric data aquisition.

In addition to organizing and properly conducting the field campaigns, a permanent cooperation has been ensured between the Coordinator and Partners.

Table 1.1. Post-construction phase - monitoring objectives - frequencies with differences in the Critical Points

MONITORING OBJECTIVES				Critical points							
				Main Critical Points			Secondary Critical Points				
				01	02	10	03A	03B	04A	04B	07
A.	AIR			S	S	S	Q	Q	Q	Q	Q
B.	NOISE			S	S	S	Q	Q	Q	Q	Q
C.	SOIL			S	S	S	Q	Q	Q	Q	Q
D.	HYDROMORPHOLOGY	Water level		C	C	C	Q	Q	Q	Q	Q
		Water velocity		M	M	M	Q	Q	Q	Q	Q
		Turbidity		C	C	C	Q	Q	Q	Q	Q
		2D bathymetric elevation		M	M	M	Q	Q	Q	Q	Q
		3D bathymetric elevation		Q	Q	Q	Not the case				
E.	WATER QUALITY			Q	Q	Q	S	S	S	S	S
	SEDIMENTS			Q	Q	Q	S	S	S	S	S
F.	AQUATIC FLORA			July			Q	Q	Q	Q	Q
	AQUATIC FAUNA			Q	Q	Q	Q	Q	Q	Q	Q
	F. is STURGEONS AND BARBELL	STURGEONS		Two seasons / year (February - May / August – December)			Two seasons / year (February - May / August – December)				
		BARBELL		One season/year April- May (breeding season)			One season/year April- May (breeding season)				
	F. i OTHER FISH SPECIES			Annually (April- May, July - September)			Annually (April- May, July - September)				
G.	TERRESTRIAL FLORA			Annually in July			Annually in July				
	TERRESTRIAL FAUNA/ AVIFAUNĂ			Annually (April - June, September - October, January)			Annually (April - June, September - October, January)				
H.	NATURA 2000 SITES	SCI	ICHTYOFAUNA	Annually (April- May, July - September)			Annually (April- May, July - September)				
			AQUATIC FLORA	July			Q	Q	Q	Q	Q
			AQUATIC FAUNA	Q	Q	Q	Q	Q	Q	Q	Q
			TERRESTRIAL FLORA	Annually in July			Annually in July				
			TERRESTRIAL FAUNA	Annually (April - June, September - October, January)			Annually (April - June, September - October, January)				
		SPA	AVIFAUNĂ	Annually (April - June, September - October, January)			Annually (April - June, September - October, January)				
J.	3D numerical modeling			M							

NOTĂ: QC – quasi continuous | M- monthly | Q – quarterly | S – semester | C – continuous

1.2. Overview

The elements related to the sampling periods for the objectives monitored in February 2018 for post-construction period are presented in Table 1.2.

Table 1.2. Objectives monitored during the period of 01.02-28.02.2018

Objectives monitored		Sampling period / ongoing activities	Campaign	Critical Points							
				Main Critical Points			Secondary Critical Points				
				01	02	10*)	03A	03B	04A	04B	07
A.	AIR	14, 23.02.2018	C70	YES	YES	NO	NO	NO	NO	NO	NO
B.	NOISE	14, 23.02.2018	C73	YES	YES	NO	NO	NO	NO	NO	NO
C.	SOIL	-	-	NO	NO	NO	NO	NO	NO	NO	NO
D.	HYDROMORPHOLOGY	22, 23, 26, 27, 28.02.2018	C82	YES	YES	NO	NO	NO	NO	NO	NO
E.	WATER QUALITY	-	-	NO	NO	NO	NO	NO	NO	NO	NO
	SEDIMENTS	-	-	NO	NO	NO	NO	NO	NO	NO	NO
F.	AQUATIC FLORA	-	-	NO	NO	NO	NO	NO	NO	NO	NO
	AQUATIC FAUNA	-	-	NO	NO	NO	NO	NO	NO	NO	NO
	F.is. STURGEONS	22, 23.02.2018	C16	YES	YES	NO	YES	YES	YES	YES	YES
	F.is. BARBELL	-	-	NO	NO	NO	NO	NO	NO	NO	NO
	F.i. OTHER FISH SPECIES	-	-	NO	NO	NO	NO	NO	NO	NO	NO
G.	TERRESTRIAL FLORA	-	-	NO	NO	NO	NO	NO	NO	NO	NO
	TERRESTRIAL FAUNA/ AVIFAUNĂ	-	-	NO	NO	NO	NO	NO	NO	NO	NO
H.	NATURA 2000 SITES	-	-	NO	NO	NO	NO	NO	NO	NO	NO
I.	BUILDING SITE	-	-	NO	NO	NO	NO	NO	NO	NO	NO

NOTE:

*) In main critical point CP10 the post-construction monitoring period has ended in August 1st, 2017
YES – samples were taken / activities were conducted in the field
NO - no samples taken / no activities conducted in the field

Means of transportation used for sampling/conducting activities and samples analysis are presented in Table 1.3.

Table 1.3 Means of transportation

Field	Transportation means
WATER	trimaran type boat with 25 CP engine
	Laguna type boat with 25 CP engine
	Lotus type boat with 20 CP engine
	Boat - autolaboratory – with trailer - RANIERI CLF22 model, Suzuki engine, 175 CP
	Boat ANA 5.0 with trailer, Suzuki engine, 40 CP
	Boat ANA 5.5 with trailer, Suzuki engine, 70 CP
LAND	Autolaboratory – Pickup jeep Toyota Hilux Double Cab 4x4
	Autolaboratory – Jeep Toyota LandCruiser
	Autolaboratory for air monitoring
	Autolaboratory for water and soil monitoring

2. STATE OF THE PROGRESS ACTIVITIES

2.1. State and progress on each activity / critical point on specific monitoring objectives

The equipments used for sampling/ongoing activities and samples analysis are presented in table 2.1.

Table 2.1 Main devices

Objectives monitored		Sampling equipment	Laboratory equipments / ongoing activities
A.	**AIR**	- LECKEL dust sampler - Auto-laboratory - Desaga pump - GPS - Autolaboratory for air monitoring	- Analytical balance KERN 770-14 - Atomic absorption spectrometer with graphite furnace AAS - UNICAM 939
B.	**NOISE**	- Sound Level Meter and Microphone, Brüel & Kjær Denmark - GPS	
C.	**SOIL**	- Burkle sampler - GPS	- ION-CROMATOGRAPH DIONEX ICS 1500 – anions, cations - Multi N/C Analytic Jena (total carbon analyzer and organic carbon) - Spectrometer ATI UNICAM UV-VIS - Mass Spectrometer with inductively coupled plasma ICPMS NexIon 350x equiped with hydrides generator system and autosampler system with autodiluter
D.	**HYDROMORPHOLOGY**	- Portable Turbidimeter type VELP SCENTIFICA - mini ADP SONTEK - Monitoring systems for turbidity and level - Monitoring systems for flow - velocities - Portable Turbidimeter HANNA Instruments - ADCP SONTEK River Surveyor R9 - Multiparameter YSI for turbidity and level measurements - Bathimetric System 3D - Konsgberg GeoSwath Plus Compact, 250 kHz - Acoustic Doppler Current Profiler (ADCP) - Teledyne RD Instruments RiverRay - ROV (Remote Operate Vehicle) – ROVBUILDER Mini 600 - GPS	- Turbidimeter HACH RATIO/RX - Device for water quality parameters measurements, type 1, Manta 2-Sub3.5+Amphibian 2 - Device for water quality parameters measurements, type 2, Manta 2-Sub4.0+Amphibian 2
E.	**WATER QUALITY**	- Ruttner sampler - GPS	- Spectrometer with atomic absorbtion VARIAN - Spectrometer CARY BIO 300 U.V.-VIS - Spectrofotometer with atomic absorbtion – with flame, graphyte oven, hydrides system with amalgamation and automatic system for solids CONTRAA - Automatic analyzer in continous segmented flux model SAN++ - Mineralization system Speedwave Four with microwave
	SEDIMENTS	- Petersen sampler - GPS	- Cryo – drying system ALPHA 2-4 LSCplus - Gas cromatograph coupled with mass spectrometer for dioxine screening, CPF, CPB and pesticides, with autosampler r-GC MS MS 15-02 - Drying stove - Sieving system for sediment samples - Ethos - digester with microwave for sediments - GC-MS-VARIAN - Spectrometer with atomic absorbtion SOLAAR M5 - Mineralization System Speedwave Four with microwave

Objectives monitored		Sampling equipment	Laboratory equipments / ongoing activities
F.	AQUATIC FLORA	- planktonic nets - Patalas sampler - dredges 20cmx50 cm - Square wooden frame, with surface of 1m^2 - GPS	- reverse microscope ZEISS - OPTIKA B-600T microscope - KRUSS microscope - Canon A570 IS camera for microscope
	AQUATIC FAUNA	- zooplanktonic nets - zoobenthic nets - Petersen sampler - benthos grabbing dredges - benthos sampling probe - GPS	- Stereomicroscope Olympus - Binocular Zeiss - Microscope ZEISS - Canon A570 IS camera for microscope - magnifying glass
	F.is. STURGEONS AND BARBELL	- Fixed monitoring system DKTB - Floating monitoring system type DKMR-01T - Complex monitoring, alarming and control system type DK-PRB-01U - Monitoring system with ultrasonic transmitter type 40 - Monitoring system with ultrasonic transmitter type 60 - Mobile receiver for sturgeons' telemetry Vemco VR 100 - GPS	- Reception station of WR2W - VR100 mobile receptor - Multiparameter YSI - Endoscope for sturgeon gender determining WELLD WED 3000V - Radar Lowrance Elite 9 CHIRP – 4 pieces
	F.i. OTHER FISH SPECIES	- High power electrical fishing device Hans Grassl EL 65 II GI - Low power electrical fishing device Hans Grassl EL 60 II HI - Ihtyometer - Electronic scale - GPS - binocular microscope - stereo microscope	
G.	TERRESTRIAL FLORA	Binoculars, GPS, notebook, standard forms, camera	
	TERRESTRIAL FAUNA/ AVIFAUNĂ	Binocular, lunette, camera, GPS	
H.	NATURA 2000 SITES	Binocular, lunette, camera, GPS	
I.	BULDING SITE ACTIVITY	- DESAGA pump - Autolaboratory - Sound Level Meter and Microphone, Brüel & Kjær - dust sampler LECKEL	

2.1.1 Critical Point 01 monitoring, Bala branch area and Caragheorghe sand strip

2.1.1.A. Air quality monitoring

The activities carried out during 01-28.02.2018 related to air quality monitoring for main critical points CP01 and CP02 are summarized in Table 2.1.1.A.1.

Table 2.1.1.A.1 Specific objective: air quality monitoring

No.	Activities
1.	Organizing the measurements campaign (Tabel 1.2)
2.	Sampling campaign for air (bulletins for air sampling - Annex 6.2.1)
3.	Laboratory analysis for collected samples
4.	Preliminary statistical processing of measured field data
5.	Contribution to Monthly Report 82
6.	Contribution to Interim Report 18

According to post-construction monitoring objectives, in February 2018 for air quality monitoring in this main critical point CP 01 is provided a sampling campaign according to Table 1.2. In post-construction period (in this main critical point CP01 was made the reception of the construction work) frequency is biannual (as Table 1.1).

In Table 2.1.1.A.2. is presented the number of air samples collected/"in situ" measurements made during 01-28 February 2018.

Table 2.1.1.A.2. Air samples repartition

Type of Critical Point	Critical Point (CP)	Samples collected for laboratory analysis	Number of "in situ" measurements
Main	01	6	6

For each sampling point, have been determined geographical coordinates. Samples were labeled according to the encoding and labeling instructions. For each sample/measurement, a bulletin has been completed, see Annex 6.2.1.

2.1.1.B. Noise monitoring

The activities carried out during 01-28.02.2018 related to noise level monitoring, for each critical point are summarized in Table 2.1.1.B.1.

Table 2.1.1.B.1. Specific objective: noise monitoring

No.	Activities
1.	Measurements campaign for noise level in zero naval traffic/ naval traffic
2.	Primary processing for the data obtained from measurements
3.	Drafting the field campaign bulletins for noise measurements- Annex 6.2.2
4.	Contribution to Monthly Report 82
5.	Contribution to Interim Report 18

According to post-construction monitoring objectives, in February 2018 for noise level monitoring in this main critical point CP 01 is provided a measurements campaign as presented in Table 1.2. In post-construction period (in this main critical point CP01 was made the reception of the construction work) frequency is biannual (as Table 1.1).

In this campaign for noise level monitoring were performed measurements as presented in Table 2.1.1.B.2, below:

Table 2.1.1.B.2. Noise level monitoring

Type of Critical Point	Critical Point (CP)	No. of measurements	
		zero naval traffic	naval traffic
Main	01	6	0

On Turcescu islet were made 2 of the 6 measurements, two other measurements were made on the Danube's left bank and 2 measurements on the right bank.

For each sampling point has been established geographic coordinates, then trans-calculated in STEREO'70 projection system. The measurements have been coded according to the encoding instructions. Also, for each measurement a report for noise level has been completed, see Annex 6.2.2.

2.1.1.C. Soil quality monitoring

Activities conducted during 01-28.02.2018, regarding soil quality monitoring, in this critical point, are summarized in Table 2.1.1.C.1.

Table 2.1.1.C.1. Specific objective: soil quality monitoring

No.	Activities
1.	Contribution to Monthly Report 82
2.	Data processing for Interim Report 18

During this period no soil sampling have been made from this critical point.

2.1.1.D. Hydromorphological monitoring

The activities carried out during this reporting period are summarized in Table 2.1.1.D.1.

Overall, 3 main activities were carried out, namely:

- Single-beam bathymetric measurements of high resolution;
- Flow and velocity measurements on the monitoring sections;
- Have continued measurements activities for turbidity and level in the 4 hydrometric automatic stations.

Table 2.1.1.D.1. Specific objective: hydromorphological monitoring

No.	Activities
1.	Single-beam bathymetric measurements of high resolution
2.	Flow and velocity measurements on the monitoring sections
3.	Measurements activities for turbidity and level in the 4 hydrometric automatic stations.

2.1.1.E. Water and sediments monitoring

The activities carried out during 01/28.02.2018, related to water and sediments quality monitoring, in this critical point are summarized in Table 2.1.1.E.1.

Table 2.1.1.E.1. Specific objective: water and sediments quality monitoring

No.	Activities
1.	Contribution to Monthly Report 82
2.	Data processing for Interim Report 18

During this period have not been made water and sediments sampling.

2.1.1.F. Aquatic flora and fauna monitoring

In reporting period no samplig have been made.

2.1.1.F.is. Sturgeons and barbell migration monitoring

In February have continued sturgeons' monitoring with fixed systems and mobile device VR100. Also, data were downloaded for processing and interpretation.

2.1.1.F.i. Other fish species monitoring

In February are not provided any activities for other fish species monitoring.

2.1.1.G. Terrestrial flora and fauna monitoring

2.1.1.G.1 Terrestrial flora

During this period have not been made monitoring activities for terrestrial flora.

2.1.1.G.2 Terrestrial fauna/ Avifauna

During this period have not been made activities for avifauna monitoring.

2.1.1.H. Natura 2000 sites monitoring

During this period have not been made monitoring activities for Natura 2000 sites.

2.1.1.I. Working site activities monitoring and intervention plan compliance in case of accidental pollution

Due to completion of hydrotechnical construction, has not been necessary the construction site activity monitoring. Works reception have been made in April 27th, 2016.

2.1.2. Critical Point 02 monitoring, Epurașu Island area (Lebăda)

2.1.2.A. Air quality monitoring

The activities carried out during 01-28.02.2018, related to air quality monitoring in this critical point are those presented in Table 2.1.2.A.1.

According to post-construction monitoring objectives, in February 2018 for air quality monitoring in this main critical point CP02 is provided a sampling campaign according to Table 1.2. In post-construction period (in this main critical point CP02 was made the reception of the construction work) frequency is biannual (as Table 1.1).

In Table 2.1.2.A.1. is presented the number of air samples collected/"in situ" measurements made during 01-28 February 2018.

Table 2.1.2.A.1. Air samples repartition

Type of Critical Point	Critical Point (CP)	Samples collected for laboratory analysis	Number of "in situ" measurements
Main	02	6	6

For each sampling point, have been determined geographical coordinates. Samples were labeled according to the encoding and labeling instructions. For each sample/measurement, a bulletin has been completed, see Annex 6.2.1.

2.1.2.B. Noise monitoring

Activities made during the reporting period, regarding noise level monitoring, in this critical point are those presented in Table 2.1.2.B.1.

According to post-construction monitoring objectives, in January 2018 for noise level monitoring in this main critical point CP 02 is provided a measurements campaign according to Table 1.2. In post-construction period (in this main critical point CP02 was made the reception of the construction work) frequency is biannual (as Table 1.1).

In this campaign for noise level monitoring, measurements were made as presented in Table 2.1.2.B.1. below:

Table 2.1.2.B.1. Noise level monitoring

Type of Critical Point	Critical Point (CP)	No. of measurements	
		zero naval traffic	naval traffic
Main	02	6	0

On Epurașu island were made 2 of the 6 measurements. Other 2 measurements were made on Danube's right bank, also the same number on the left bank.

For each sampling point has been established geographic coordinates, then trans-calculated in STEREO'70 projection system. The measurements have been coded according to the encoding instructions. Also, for each measurement a report for noise level has been completed, see Annex 6.2.2.

2.1.2.C. Soil quality monitoring

Activities conducted during the reporting period, regarding soil quality monitoring, for this critical point are those presented in Table 2.1.1.C.1.

During this period have not been made any soil sampling.

2.1.2.D. Hydromorphological monitoring

The activities carried out during this reportic period are summarized in Table 2.1.2.D.1.

Overall, 3 main activities were made, namely:

- Single-beam bathymetric measurements of high resolution;
- Flow and velocity measurements on the monitoring sections;
- Further continuous measurements for turbidity and level in the 3 hydrometric automatic stations.
-

Table 2.1.2.D.1. Specific objective: hydromorphological monitoring

No.	Activities
1.	Single-beam bathymetric measurements of high resolution
2.	Flow and velocity measurements on the monitoring sections
3.	Continuous measurements for turbidity and level in the 3 hydrometric automatic stations.

In February 2018 were made, mainly, ADCP measurements (flow/velocities) as provided in Specifications. Results will be presented in the Interim Report for this month.

2.1.2.E. Water and sediments monitoring

Activities performed during 01/28.02.2018, regarding water and sediment quality monitoring, reported to this critical point are those presented in Table 2.1.1.E.1.

During this period no water and sediments sampling have been made.

2.1.2.F. Aquatic flora and fauna monitoring

During this period have not been made sampling activities.

2.1.2.F.is. Sturgeons and barbell migration monitoring

In CP 02 the sturgeons migration was monitored with monitoring systems placed on the Old Danube.

2.1.2.F.i. Other fish species monitoring

In February 2018 were not provided monitoring activities for other fish species.

2.1.2.G. Terrestrial flora and fauna monitoring

2.1.2.G.1 Terrestrial flora

During this period were no activities for terrestrial flora monitoring.

2.1.2.G.2 Terrestrial fauna/ Avifauna

During this period were no activities for avifauna monitoring.

2.1.2.H. Natura 2000 sites monitoring

During this period were no activities for Natura 2000 sites monitoring.

2.1.2.I. Work site activities monitoring and intervention plan compliance in case of accidental pollution

Due to completion of hydrotechnical construction, has not been necessary the construction site activity monitoring. Works reception have been made in November 26th, 2015.

2.1.3. Critical point 10 monitoring, Caleia Branch (Ostrovu Lupu)

At this critical point no longer been carried out monitoring activities, as post-construction monitoring period was completed in August 2017.

2.1.4. Monitoring in the critical points 03÷07

2.1.4.1. Monitoring in CP 03 (upstream and downstream Seica)

2.1.4.1.A. Air quality monitoring

In this period have not been performed air quality monitoring activities in this secondary critical point.

2.1.4.1.B. Noise level monitoring

In this period have not been performed any noise monitoring activities in this secondary critical point.

2.1.4.1.C. Soil quality monitoring

The activities carried out during reporting period, related to soil quality monitoring in this critical points are those presented in Table 2.1.1.C.1.

During reporting period no soil sampling have been made.

2.1.4.1.D. Hydromorphological monitoring

No activities regarding hydromorphological monitoring during this period.

2.1.4.1.E. Water and sediments quality monitoring

Activities made during reporting period, regarding water and sediments quality, in this critical point are those presented in Table 2.1.1.E.1.

In this period have not been made water and sediments sampling.

2.1.4.1.F. Aquatic flora and fauna monitoring

During reporting period no sampling have been made.

2.1.4.1.F.is. Sturgeons and barbell migration monitoring

Monitoring of sturgeons' migration was carried out with the monitoring systems existent on Danube sector between km 248 and km 348.

2.1.4.1.F.i. Other fish species monitoring

In February are not provided monitoring activities for other fish species.

2.1.4.1.G. Terrestrial flora and fauna monitoring

2.1.4.1.G.1 Terrestrial flora

No monitoring activities for terrestrial flora were made in this period.

2.1.4.1.G.2 Terrestrial fauna / Avifauna

No monitoring activities for avifauna were made in this period.

2.1.4.1.H. Natura 2000 sites monitoring

No monitoring activities for Natura 2000 sites were made in this period.

2.1.4.1.I. Work site activities monitoring and intervention plan compliance in case of accidental pollution

The monitoring of the construction site was not necessary because the hydrotechnical works have not been started.

2.1.4.2. Monitoring in CP 04 /Ceacâru/Fermecatu

2.1.4.2.A. Air quality monitoring

During this period, have not been made air monitoring activities in this secondary critical point.

2.1.4.2.B. Noise level monitoring

During this period, have not been made noise monitoring activities in this secondary critical point.

2.1.4.2.C. Soil quality monitoring

During reporting period no soil sampling activities have been made.

2.1.4.2.D. Hydromorphological monitoring

No activities regarding hydromorphological monitoring during this period.

2.1.4.2.E. Water and sediments quality monitoring

In this period have not been made water and sediments sampling.

2.1.4.2.F. Aquatic flora and fauna monitoring

During reporting period no sampling activities have been made.

2.1.4.2.F.is. Sturgeons and barbell migration monitoring

Sturgeons' migration monitoring has been done with the monitoring systems existent on Danube sector between km 248 and km 348.

2.1.4.2.F.i. Other fish species monitoring

In February were not provided monitoring activities for other fish species.

2.1.4.2.G. Terrestrial flora and fauna monitoring

2.1.4.2.G.1 Terrestrial flora

In this period, no activities for terrestrial flora monitoring have been made.

2.1.4.2.G.2 Terrestrial fauna/Avifauna

In this period, no activities for avifauna monitoring have been made.

2.1.4.2.H. Natura 2000 monitoring sites

During this period, avifauna was not monitored in Natura 2000 sites in critical point area.

2.1.4.2.I. Monitoring the building site activities and the compliance with the intervention plan in case of accidental pollution

The monitoring of the construction site was not necessary because the hydrotechnical works have not been started.

2.1.4.3. Monitoring in CP 07 / Fasolele

2.1.4.3.A. Air quality monitoring

During this period have not been made any monitoring activities for air quality in this secondary critical point.

2.1.4.3.B. Noise level monitoring

During this period, have not been made any monitoring activities for noise level in this secondary critical point.

2.1.4.3.C. Soil quality monitoring

During this period were not been made any soil sampling.

2.1.4.3.D. Hydromorphological monitoring

No activities regarding hydromorphological monitoring during this period.

2.1.4.3.E. Water and sediments quality monitoring

No activities regarding sediments and water sampling have been made during this period.

2.1.4.3.F. Aquatic flora and fauna monitoring

During reporting period no sampling have been made.

2.1.4.3.F.is. Sturgeons and barbell migration monitoring

Sturgeons' migration monitoring has been done with the monitoring systems existent on the Danube sector between km 248 and km 348.

2.1.4.3.F.i. Other fish species monitoring

In February are not provided monitoring activities for other fish species.

2.1.4.3.G. Terrestrial flora and fauna monitoring

2.1.4.3.G.1 Terrestrial flora

During this period, no activities for terrestrial flora monitoring were made.

2.1.4.3.G.2 Terrestrial fauna / Avifauna

During this period, no activities for avifauna monitoring were made.

2.1.4.3.H. Natura 2000 sites monitoring

During this period, Natura 2000 sites were not monitored in critical point area.

2.1.4.3.I. Work site activities monitoring and intervention compliance plan in case of accidental pollution

The monitoring of the construction site was not necessary because the hydrotechnical works have not been started.

2.2. Stage of 3D numerical modeling

In February 2018, INCDPM specialists have conducted, according to Specifications, bathymetric data aquisition in main critical points CP01 and CP02. Thus, for this activity have been performed:

- bathymetric measurements for morphology and sections profiling;
- bathymetric measurements for velocities and flow rates;
- longitudinal bathymetric measurements for bottom sill geometry determination.

3. MEMBERS OF THE EXPERTS TEAM

3.1. Members of the experts' team

Team's members who carried out activities in the reporting period and the number of days worked by each expert are schematically presented in Table 3.1.

Table 3.1. Members of the experts' team

No.	Experts	Names of experts	Number of working days post-construction
1.	Project manager	Deák György	5
2.	Chemist 1	Ghiță Gina	5
3.	Chemist 2	Borș Adriana	5
4.	Ichthyologist 1	Cristea Victor	4
5.	Ichthyologist 2	Falka Istvan	0
6.	Hydrology	Poteraș George	5
7.	Hydraulic sedimentology	Ungureanu Gh Viorel	5
8.	Phytoplankton and aquatic macrophytes	Marinescu Florica	0
9.	Zooplankton	Adina Popescu	0
10.	Terrestrial invertebrates	Șerban Cecilia	0
11.	Aquatic macroinvertebrates	Florea Luiza	0
12.	Terrestrial flora and vegetation	Frink Jozsef Pal	0
13.	Ornithologist 1	Jozsef Szabo	0
14.	Ecologist 1	Ambrus Laszlo	2
15.	Ecologist 2	Holban Elena	0
16.	Assessor	Tudor Marian	5

3.2. Experts' tasks during the project

The tasks accomplished by experts on each phase/activity/critical point are presented in Experts' Activity Reports (Annex 6.3).

3.3. Planning the activities for the next month on each phase/activity/critical point

The monitoring activities for the period 01–31 March 2018 are synthetically presented in Table 3.4.

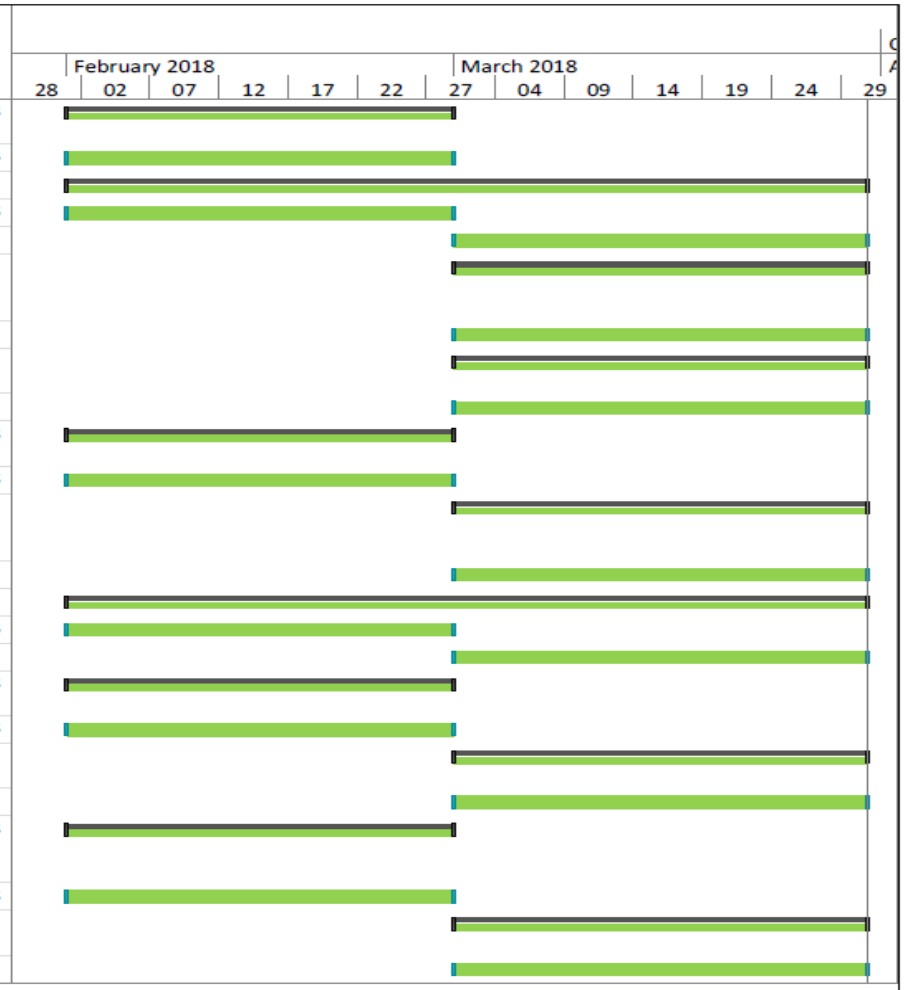
Table 3.4. Activities for the period of 01.03-31.03.2018

No.	ACTIVITIES	Critical points							
		Main critical points			Secondary critical points				
		01	02	10	03A	03B	04A	04B	07
1.	Further campaign of measurements, field observations (where is necessary)	YES	YES	NO	YES	YES	YES	YES	YES
2.	Processing and interpretation of field and laboratory data (where is necessary)	YES	YES	NO	YES	YES	YES	YES	YES
3.	Monthly report preparation	YES	YES	NO	YES	YES	YES	YES	YES

4. TIME SCHEDULE AND BUDGET PROJECT

4.1. Time schedule for project implementation

ID	Task Name	Start	Finish
1	Air monitoring: Conducting the campaingns for measurements and sampling for air quality, in main critical points CP 01 and CP 02.	Thu 01.02.18	Wed 28.02.18
2	82nd Month	Thu 01.02.18	Wed 28.02.18
3	Air monitoring: Contribution to Interim Report 18	Thu 01.02.18	Fri 30.03.18
4	82nd Month	Thu 01.02.18	Wed 28.02.18
5	83rd Month	Thu 01.03.18	Fri 30.03.18
6	Air monitoring: Conducting the campaingns for measurements and sampling for air quality, in secondary critical points CP 03A, CP 03B, CP 04A, CP 04B, CP 07.	Thu 01.03.18	Fri 30.03.18
7	83rd Month	Thu 01.03.18	Fri 30.03.18
8	Processing and assessing for data and measurements on air quality in main critical points CP 01 and CP 02	Thu 01.03.18	Fri 30.03.18
9	83rd Month	Thu 01.03.18	Fri 30.03.18
10	Noise monitoring: Conducting the campaingns for measurements and sampling for noise monitoring, in main critical points CP 01 and CP 02	Thu 01.02.18	Wed 28.02.18
11	82nd Month	Thu 01.02.18	Wed 28.02.18
12	Noise monitoring: Conducting the campaingns for measurements and sampling for noise monitoring, in secondary critical points CP 03A, CP 03B, CP 04A, CP 04B, CP 07.	Thu 01.03.18	Fri 30.03.18
13	83rd Month	Thu 01.03.18	Fri 30.03.18
14	Noise monitoring: Contribution to Interim Report RI18	Thu 01.02.18	Fri 30.03.18
15	82nd Month	Thu 01.02.18	Wed 28.02.18
16	83rd Month	Thu 01.03.18	Fri 30.03.18
17	Water quality monitoring - Water (physical-chemical analysis) - data processing for Interim Report 18 (CP 01, CP 02, CP 10)	Thu 01.02.18	Wed 28.02.18
18	82nd Month	Thu 01.02.18	Wed 28.02.18
19	Water quality monitoring CP 01, CP 02, CP03, CP04, CP07 - Water (physical-chemical analysis)	Thu 01.03.18	Fri 30.03.18
20	83rd Month	Thu 01.03.18	Fri 30.03.18
21	Water quality monitoring - Sediments (heavy metals, organic micropollutants) - data processing for Interim Report 18 (CP 01, CP 02, CP 10)	Thu 01.02.18	Wed 28.02.18
22	82nd Month	Thu 01.02.18	Wed 28.02.18
23	Water quality monitoring CP 01, CP 02, CP03, CP04, CP07 - Sediments (heavy metals, organic micropollutants)	Thu 01.03.18	Fri 30.03.18
24	83rd Month	Thu 01.03.18	Fri 30.03.18



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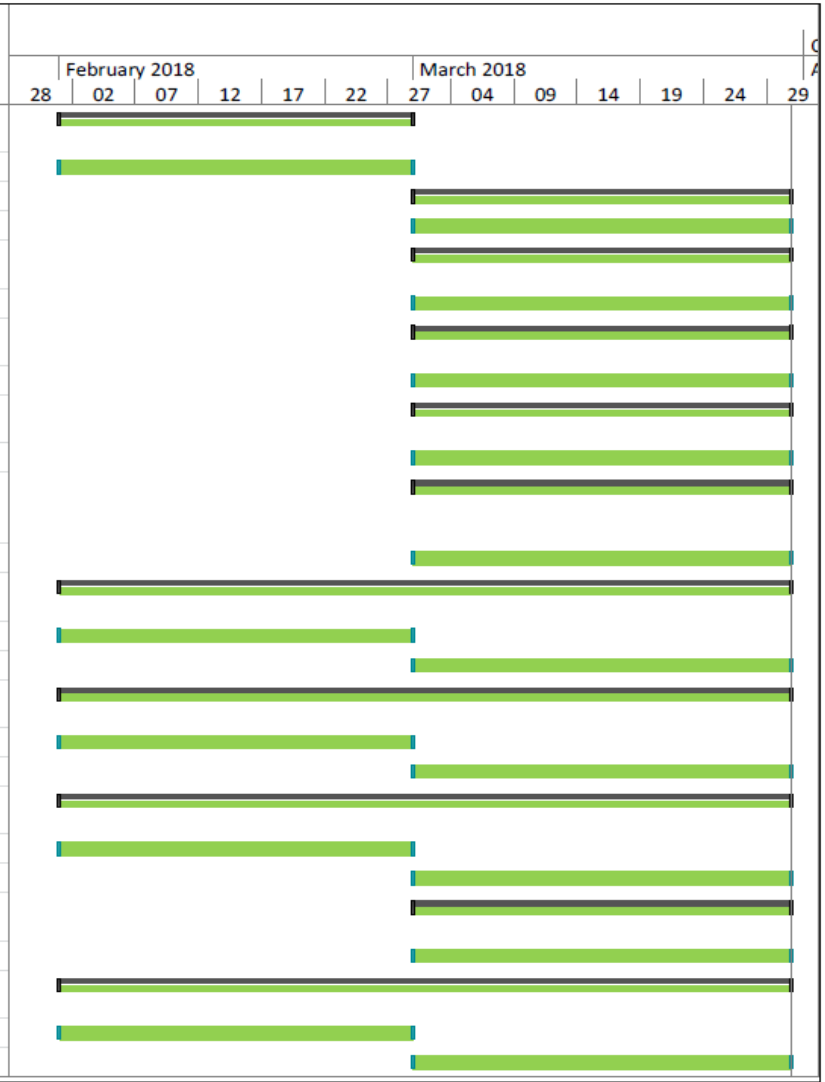
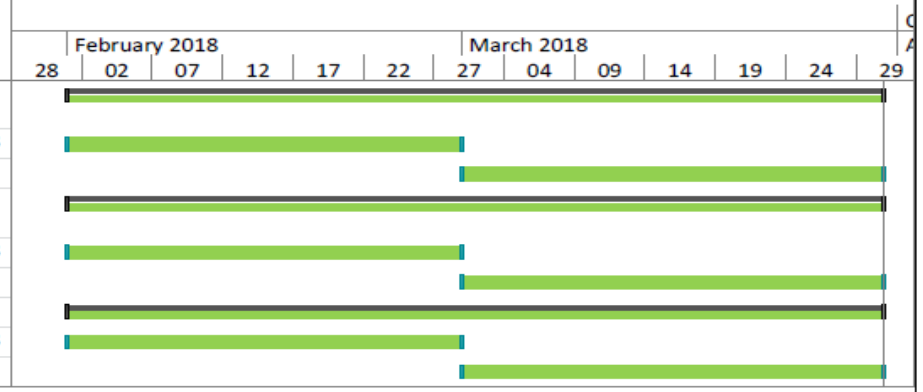
ID	Task Name	Start	Finish
25	Soil monitoring - data processing for Interim Report 18 (CP 01, CP 02, CP10, CP03, CP04, CP07)	Thu 01.02.18	Wed 28.02.18
26	82nd Month	Thu 01.02.18	Wed 28.02.18
27	Soil monitoring CP03, CP04, CP07 - lumbricides presence, abundance	Thu 01.03.18	Fri 30.03.18
28	83rd Month	Thu 01.03.18	Fri 30.03.18
29	Soil monitoring CP03, CP04, CP07 - mineral salts, humic acids, organic matter, physical-chemical analysis	Thu 01.03.18	Fri 30.03.18
30	83rd Month	Thu 01.03.18	Fri 30.03.18
31	Aquatic flora monitoring CP 03A/03B/04A/04B/07 - phytoplankton - sampling, composition, abundance, biomass	Thu 01.03.18	Fri 30.03.18
32	83rd Month	Thu 01.03.18	Fri 30.03.18
33	Aquatic flora monitoring CP 03A/03B/04A/04B/07 - aquatic macrophytes - sampling, composition, abundance, biomass	Thu 01.03.18	Fri 30.03.18
34	83rd Month	Thu 01.03.18	Fri 30.03.18
35	Aquatic fauna monitoring CP 01/02/03A/03B/04A/04B/07 - aquatic macroinvertebrates - laboratory analysis, composition, abundance, biomass, saprobic index	Thu 01.03.18	Fri 30.03.18
36	83rd Month	Thu 01.03.18	Fri 30.03.18
37	Hydromorphological monitoring in CP 01/CP 02 - Single-beam measurements - sections profiling	Thu 01.02.18	Fri 30.03.18
38	82nd Month	Thu 01.02.18	Wed 28.02.18
39	83rd Month	Thu 01.03.18	Fri 30.03.18
40	Hydromorphological monitoring in CP 01/CP 02 - level and turbidity measurements in hydrometric automatic station of INCDPM	Thu 01.02.18	Fri 30.03.18
41	82nd Month	Thu 01.02.18	Wed 28.02.18
42	83rd Month	Thu 01.03.18	Fri 30.03.18
43	Hydromorphological monitoring in CP 01/CP 02 - Flow rate monitoring (volume, velocity, level)	Thu 01.02.18	Fri 30.03.18
44	82nd Month	Thu 01.02.18	Wed 28.02.18
45	83rd Month	Thu 01.03.18	Fri 30.03.18
46	Hydromorphological monitoring in CP 01/CP 02 - bathymetric measurements of high resolution	Thu 01.03.18	Fri 30.03.18
47	83rd Month	Thu 01.03.18	Fri 30.03.18
48	Ichtyofauna biodiversity monitoring CP 01/02/03/04/07 - trails and migration periods monitoring for sturgeon specimens with ultrasonic	Thu 01.02.18	Fri 30.03.18
49	82nd Month	Thu 01.02.18	Wed 28.02.18
50	83rd Month	Thu 01.03.18	Fri 30.03.18



ID	Task Name	Start	Finish
51	Ichtyofauna biodiversity monitoring CP 01 - Data downloading from the monitoring systems for sturgeons migration	Thu 01.02.18	Fri 30.03.18
52	82nd Month	Thu 01.02.18	Wed 28.02.18
53	83rd Month	Thu 01.03.18	Fri 30.03.18
54	Ichtyofauna biodiversity monitoring CP 01 - Monitoring with VR100 for ultrasonic tagged sturgeons	Thu 01.02.18	Fri 30.03.18
55	82nd Month	Thu 01.02.18	Wed 28.02.18
56	83rd Month	Thu 01.03.18	Fri 30.03.18
57	Monthly reports	Thu 01.02.18	Fri 30.03.18
58	82nd Month	Thu 01.02.18	Wed 28.02.18
59	83rd Month	Thu 01.03.18	Fri 30.03.18



4.2. Budget and expenses incurred during the reporting period

Justifying calculation for 01 – 28 February 2018

I. EXPERTS EXPENSES				
No.	Experts	No. of working days	Fee (Euro on working day)	Maximum total value of the fees
		Post - Construction (36 monts)		
1	Project leader	5	240	1.200,00 EUR
2	Chemist 1	5	200	1.000,00 EUR
3	Chemist 2	5	200	1.000,00 EUR
4	Ichtyologist 1	4	330	1.320,00 EUR
5	Ichtyologist 2	0	200	0,00 EUR
6	Hydrology	5	200	1.000,00 EUR
7	Hydraulic- sedimentlogy	5	200	1.000,00 EUR
8	Aquatic phytoplankton and macropytes	0	130	0,00 EUR
9	Zooplankton	0	130	0,00 EUR
10	Terrestrial invertebrates	0	125	0,00 EUR
11	Aquatic macroinvertebrates	0	125	0,00 EUR
12	Terrestrial flora and fauna	0	125	0,00 EUR
13	Ornithologist 1	0	200	0,00 EUR
14	Ecologist 1	2	140	280,00 EUR
15	Ecologist 2	0	140	0,00 EUR
16	Evaluator	5	330	1.650,00 EUR
SUBTOTAL EXPERTS' FEES				8.450,00 EUR
II EXPENSES with JUSTIFICATION				
1	Ichtyology- telemetry (sturgeons and barbel transmitters, batteries, expensis on stugeons' capturing)			0,00 EUR
2	Abiotic and biotic data for the establishment of the framework			
3	Analysis			0,00 EUR
SUBTOTAL EXPENSES with JUSTIFICATION				0,00 EUR
III. MATHEMTICAL MODELING				
1	Softaware acquisiton+hardware+ necessary licenses			0,00 EUR
2	Acquisition of bathymetric data, necessary for the mathematical modeling			2.647,10 EUR
3	Training of 2 specialists in numerical modeling			0,00 EUR
4	Fee for the numerical modeling expert			0,00 EUR
5	3D numerical model and implementation in 3D monitoring			0,00 EUR
SUBTOTAL NUMERICAL MODELING				2.647,10 EUR
TOTAL without V.A.T.				11.097,10 EUR

4.3. Budget and expenses for the next period

Estimated calculation for 01 – 31 March 2018

I. EXPERTS EXPENSES				
No.	Experts	No. of working days Post - Construction (36 monts)	Fee (Euro on working day)	Maximum total value of the fees
1	Project leader	5	240	1.200,00 EUR
2	Chemist 1	5	200	1.000,00 EUR
3	Chemist 2	3	200	600,00 EUR
4	Ichtyologist 1	5	330	1.650,00 EUR
5	Ichtyologist 2	0	200	0,00 EUR
6	Hydrology	8	200	1.600,00 EUR
7	Hydraulic- sedimentlogy	12	200	2.400,00 EUR
8	Aquatic phytoplankton and macropytes	5	130	650,00 EUR
9	Zooplankton	0	130	0,00 EUR
10	Terrestrial invertebrates	0	125	0,00 EUR
11	Aquatic macroinvertebrates	5	125	625,00 EUR
12	Terrestrial flora and fauna	0	125	0,00 EUR
13	Ornithologist 1	0	200	0,00 EUR
14	Ecologist 1	2	140	280,00 EUR
15	Ecologist 2	0	140	0,00 EUR
16	Evaluator	5	330	1.650,00 EUR
SUBTOTAL EXPERTS' FEES				11.655,00 EUR
II EXPENSES with JUSTIFICATION				
1	Ichtyology- telemetry (sturgeons and barbel transmitters, batteries, expensis on stugeons' capturing)			0,00 EUR
2	Abiotic and biotic data for the establishment of the framework			
3	Analysis			0,00 EUR
SUBTOTAL EXPENSES with JUSTIFICATION				0,00 EUR
III. MATHEMTICAL MODELING				
1	Softaware acquisiton+hardware+ necessary licenses			0,00 EUR
2	Acquisition of bathymetric data, necessary for the mathematical modeling			50.000,00 EUR
3	Training of 2 specialists in numerical modeling			0,00 EUR
4	Fee for the numerical modeling expert			0,00 EUR
5	3D numerical model and implementation in 3D monitoring			0,00 EUR
SUBTOTAL NUMERICAL MODELING				50.000,00 EUR
TOTAL without V.A.T.				61.655,00 EUR

5. CONCLUSIONS, RECOMMENDATIONS, WARNINGS

5.1 This Monthly Report reflects monitoring activities from February 2018 related to post-construction period.

5.2 For the specific monitoring objectives within this phase, the Provider considered that the field and laboratory activities, logistics and infrastructure be sized so as to be according to the graphs and stipulations mentioned in the Specifications.

5.3 Taking into consideration the importance of the construction works that take place on Danube on the section between Calarasi and Braila, the Consortium recommends further actions on biodiversity monitoring, al least with the frequency similar to post-construction phase, up to completion of the project, in order to ensure an informational volume, with a high confidence level, to allow if necessary, the development of preventive solutions.

5.4 In February 2018, hydromorphological monitoring activity mainly based on ADCP measurements (flow rates and velocities) in main critical points CP01 and CP02 area and single-beam bathymetric measurements for sections profiling in those 2 critical points, in conditions with high flow values compared with hystorical data for this period of the year.

6. ANNEXES

6.1 Relevant correspondence

6.2 Recording bulletins for sampling/measurements

6.2.1: AIR sampling sheets

6.2.2: NOISE sampling sheets

6.3 Experts' activity reports

6.4 Images of activities

6.5 Hydromorphology monitoring