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GUVERNUL ROMÂNIEI
MINISTERUL TRANSPORTURILOR
(SISTEMUL NAȚIONAL DE INFRASTRUCTURĂ)



Ministerul Mediului și Climei
Agenția Națională de Protecție Mediului



Ministerul Transporturilor
2007-2013



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Project: 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 No 75: 1 - 31 July 2017

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 NO. 75

01 - 31 July 2017



FINAL VERSION



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Project: 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 No 75: 1 - 31 July 2017

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Project: 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

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Project: 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

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1. INTRODUCTION

1.1. Brief presentation of monitored objectives

I. *This report presents the monitoring objectives for the period 01-31 July 2017.*

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 activities for:

- single-beam bathymetric data acquisition
- developing mid-scale quasi 3D hydrodynamic model using the Delft3D software
- running scenarios to analyze the swimming capacity of sturgeons

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		August			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 July 2017 for post-construction period are presented in Table 1.2.

Table 1.2. Objectives monitored during the period of 01.07-31.07.2017

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	-	-	NO	NO	NO	NO	NO	NO	NO	NO
B.	NOISE	-	-	NO	NO	NO	NO	NO	NO	NO	NO
C.	SOIL	-	-	NO	NO	NO	NO	NO	NO	NO	NO
D.	HYDROMORPHOLOGY	03, 11, 12, 17-20, 24, 27, 28.07.2017	C72	YES	YES	YES	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	07.07.25017, 14.07.2017	C27- phytoplankton C26 - macrophytes	YES	YES	YES	YES	YES	YES	YES	YES
	AQUATIC FAUNA	14.07.2017	C8 - zooplankton	YES	YES	YES	YES	YES	YES	YES	YES
	F.is. STURGEONS	27, 28.07.2017	C33	YES	YES	YES	YES	YES	YES	YES	YES
	F.is. BARBELL	-	-	NO	NO	NO	NO	NO	NO	NO	NO
	F.i. OTHER FISH SPECIES	18, 19, 20.07.2017	C12	YES	YES	YES	YES	YES	YES	YES	YES
G.	TERRESTRIAL FLORA	25, 26, 27, 28, 31.07.2017	C7	YES	YES	YES	YES	YES	YES	YES	YES
	TERRESTRIAL FAUNA/ AVIFAUNĂ	-	-	NO	NO	NO	NO	NO	NO	NO	NO
H.	NATURA 2000 SITES	25, 26, 27.07.2017	Terrestrial flora monitoring	YES	YES	YES	YES	YES	YES	YES	YES
I.	BUILDING SITE	-	-	NO	NO	NO	NO	NO	NO	NO	NO

NOTE:

YES - samples were taken / activities were conducted in the field

NO - no samples taken / no activities conducted in the field



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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



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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 Nexlon 350x equipped with hydrides generator system and autosampler system with autodiluter
D.	HYDROMORPHOLOGY	- Portable Turbidimeter type VELP SCIENTIFICA - 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 - Kongsberg 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, graphite 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 chromatograph 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



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Objectives monitored		Sampling equipment	Laboratory equipments / ongoing activities
F.	AQUATIC FLORA	- planktonic nets - Patalas sampler - dredges 20cmx50 cm - Square wooden frame, with surface of 1m² - 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 01/31.07.2017 related to air quality monitoring for each critical point are presented in Table 2.1.1.A.1.

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

No.	Activities
1.	Contribution to Monthly Report 75
2.	Contribution to Interim Report 17

According to post-construction monitoring objectives, in July 2017 for air quality monitoring in this main critical point CP 01 is not provided a sampling campaign according to Table 1.2. In post-construction period (in this main critical point CP01 have been made the reception of the construction work) frequency is biannual (as Table 1.1).

2.1.1.B. Noise monitoring

The activities carried out during 01/31.07.2017 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.	Contribution to Monthly Report 75
2.	Contribution to Interim Report 17

According to post-construction monitoring objectives, in July 2017 for noise level monitoring in this main critical point CP 01 is not provided a measurements campaign as presented in Table 1.2. In post-construction period (in this main critical point CP01 have been made the reception of the construction work) frequency is biannual (as Table 1.1).

2.1.1.C. Soil quality monitoring

Activities performed during 01/31 July 2017, regarding soil quality monitoring, for each 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.	Performing physical-chemical laboratory analysis for soil samples collected in June (C26)

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

2.1.1.D. Hydromorphological monitoring

The activities from this reporting period are synthetically presented in Table 2.1.1.D.1:

Overall 3 main activities have been carried out:

- Single-beam bathymetric measurements
- Flow and velocity measurements on the monitoring sections;
- Turbidity and level continuous measurements in the 4 automatic hydrometric stations have continued.

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

No.	Activities
1.	Single-beam bathymetric measurements
2.	Flow and velocity measurements on the monitoring sections
3.	Turbidity and level continuous measurements in the 4 automatic hydrometric stations

2.1.1.E. Water and sediments monitoring

The activities carried out during 01/31.07.2017, 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.	Performing physical-chemical laboratory analysis for water samples collected in June 2017 (C64)
2.	Performing physical-chemical laboratory analysis for sediment samples collected in June 2017 (C64)

During this period no water and sediment sampling have been made from this critical point.

2.1.1.F. Aquatic flora and fauna monitoring

The activities carried out during this reporting period, regarding aquatic fauna and flora (except for ichthyofauna), are summarized in Table 2.1.1.F.1.

Table 2.1.1.F.1 Specific objective: Aquatic flora and fauna monitoring

No.	Activities
1.	Organizing the sampling campaign for phytoplankton, macrophytes and zooplankton (Table 1.2)
2.	Conducting the sampling campaign for phytoplankton, macrophytes and zooplankton (sampling bulletins for aquatic flora and fauna - Annex 6.2.1)
3.	Laboratory analysis for phytoplankton and zooplankton
4.	Further laboratory analysis for benthic macroinvertebrates samples collected in campaign 15.06.2017
5.	Processing and analysis for obtained data

In this campaign, from CP 01 were collected *phytoplankton samples* for *quantitative and qualitative analysis*, as presented in Table 2.1.1.F.2.

Table 2.1.1.F.2. Phytoplankton samples

Type of Critical Point	Critical Point (CP)		Section	Samples collected for laboratory analysis							
		Qualitative analysis				Quantitative analysis					
		Left bank		Thalweg	Right bank	Average sample	Left bank	Thalweg	Right bank	Proba Medie	
Main	01		02	1	1	1	1	1	1	1	1
			03	1	1	1	1	1	1	1	1
	TOTAL			6			2	6			2

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

In Table 2.1.1.F.3 is presented the number of samples collected in this campaign from CP01 for *macrophytes* analysis.

Table 2.1.1.F.3 Macrophytes samples

Type of Critical Point	Critical Point (CP)	Section	Qualitative and quantitative analysis	
			Left bank	Right bank
Main	01	1	1	1
		2	1	1
		3	1	1
		4	1	1
TOTAL			8	

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

For *zooplankton*, samples were collected from CP01 as presented in Table 2.1.1.F.4.

Table 2.1.1.F.4 Zooplankton samples

Type of Critical Point	Critical Point (CP)	Section	Samples collected for laboratory analysis		
			Left bank	Thalweg	Right bank
Main	01	1	1	1	1
		2	1	1	1
		3	1	1	1
		4	1	1	1
TOTAL			12		

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

2.1.1.F.is. Sturgeons and barbell migration monitoring

In July began scientific fishing for sturgeon species on Borcea branch of the Danube. In this activity were included 3 boats authorized by the National Agency for Fisheries and Aquaculture. Fishing began on 10.07.2017, but no mature specimens were captured for tagging until the end of the month. For the purpose of complex monitoring during autumn migration in this year, 5 new systems have been installed in Borcea-Bala sector. Data was also downloaded from the systems set in CP01, but no new data were recorded related to migration of sturgeon specimens previously tagged.

2.1.1.F.i. Other fish species monitoring

In July was conducted scientifically electric fishing in banks areas, in order to assess local ichthyofauna. The captured specimens were identified at species level and biometric measurements (length and weight) were made. Data were processed to obtain the distribution, abundance and biomass of the species.

2.1.1.G. Terrestrial flora and fauna monitoring

2.1.1.G.1 Terrestrial flora

Activities performed during this reporting period, regarding terrestrial flora monitoring are presented in Table 2.1.1.G.1.1.

Table. 2.1.1.G.1.1 Specific objective: Terrestrial flora monitoring

No.	Activities
1.	Establishing the details and monitoring planning of permanent plots and of phytosociological elevations according to Braun Blanquet methodology
2.	Performing monitoring activity - setting the phytosociological elevations in the main types of existent habitats



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3.	Description of identified habitats types - Annex 6.8
4.	Input of parameters recorded in the field in computerized database

Results of terrestrial flora monitoring in critical point CP01 are presented in Annex 6.8.

2.1.1.G.2 Terrestrial fauna/ Avifauna

During this period no activities have been made regarding avifauna monitoring.

2.1.1.H. Natura 2000 sites monitoring

The activities carried out during this reporting period, regarding Natura 2000 sites monitoring, are summarized in Table 2.1.1.H.1.

Table 2.1.1.H.1 Specific objective: Natura 2000 sites monitoring

No.	Activities
1.	Field campaign for data collecting (as Table 1.2)
2.	Monitoring and census for terrestrial flora: floristic observations, abundance estimate for each plat species - at canopy, shrubs and grass level
3.	Analysis and centralization of the obtained data (Annex 6.9)

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 01/31.07.2017 related to air quality monitoring in this critical point are those presented in Table 2.1.1.A.1.

According to post-construction monitoring objectives, in July 2017 for air quality monitoring in this main critical point CP02 is not provided a sampling campaign according to Table 1.2. In post-construction period (in this main critical point CP02 have been made the reception of the construction work) frequency is biannual (as Table 1.1).

2.1.2.B. Noise monitoring

The activities carried out in reporting period, regarding noise level monitoring, in this critical point are those presented in Table 2.1.1.B.1.

According to post-construction monitoring objectives, in July 2017 for noise level

monitoring in this main critical point CP 02 is not provided a measurements campaign according to Table 1.2. In post-construction period (in this main critical point CP02 have been made the reception of the construction work) frequency is biannual (as Table 1.1).

2.1.2.C. Soil quality monitoring

The activities carried out during reporting period, regarding soil quality monitoring, in this critical point are summarized in Table 2.1.1.C.1.

During this period no soil sampling have been made.

2.1.2.D. Hydromorphological monitoring

The activities from this reporting period are synthetically presented in Table 2.1.2.D.1:

Overall 3 main activities have been carried out:

- Single-beam bathymetric measurements;
- Flow and velocity measurements on the monitoring sections;
- Turbidity and level continuous measurements in the 3 automatic hydrometric stations have continued.

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.	Turbidity and level continuous measurements in the 3 automatic hydrometric stations

In July 2017 , were mainly made ADCP measurements (flow rates/velocities) as presented in Specifications. Results will be presented in Interim Report for this month.

2.1.2.E. Water and sediments monitoring

Activities performed during the reporting period, 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 sampling activities have been made for water and sediments.

2.1.2.F. Aquatic flora and fauna monitoring

The activities carried out during this reporting period, regarding aquatic fauna and flora (except for ichthyofauna), are summarized in Table 2.1.2.F.1.

Table 2.1.2.F.1. Specific objective: Aquatic flora and fauna monitoring

No.	Activities
1.	Organizing the sampling campaign for phytoplankton, macrophytes and zooplankton (Table 1.2)
2.	Conducting the sampling campaign for phytoplankton, macrophytes and zooplankton (sampling bulletins for aquatic flora and fauna - Annex 6.2.1)
3.	Laboratory analysis for phytoplankton and zooplankton
4.	Further laboratory analysis for benthic macroinvertebrates samples collected in campaign 15.06.2017
5.	Processing and analysis for obtained data

In this campaign, from CP02 were collected phytoplankton samples for *quantitative and qualitative analysis*, as presented in Table 2.1.2.F.2.

Table 2.1.2.F.2 Phytoplankton samples

Type of Critical Point	Critical Point (CP)	Section	Samples collected for laboratory analysis							
			Qualitative analysis				Quantitative analysis			
			Left bank	Thalweg	Right bank	Average sample	Left bank	Thalweg	Right bank	Average sample
Main	02	05	1	1	1	1	1	1	1	1
		06	1	1	1	1	1	1	1	1
TOTAL			6			2	6			2

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

In Table 2.1.3.F.3 is presented the number of samples collected in this campaign from CP02 for *macrophytes* analysis.

Table 2.1.2.F.3. Macrophytes samples

Type of Critical Point	Critical Point (CP)	Section	Qualitative analysis și cantitativă	
			Left bank	Right bank
Main	02	3	1	1
		4	1	1
		5	1	1
TOTAL			6	

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

Zooplankton samples were collected from CP02 as presented in Table 2.1.2.F.4.

Table 2.1.2.F.4 Zooplankton samples

Type of Critical Point	Critical Point (CP)	Section	Samples collected for laboratory analysis		
			Left bank	Thalweg	Right bank
Main	02	3	1	1	1
		4	1	1	1
		5	1	1	1
TOTAL			9		

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

2.1.2.F.is. Sturgeons and barbell migration monitoring

In CP 02 have been monitored sturgeons migration with the monitoring systems placed on the Old Danube. Data were downloaded from the systems, but no detections were found in this month.

2.1.2.F.i. Other fish species monitoring

In July was conducted scientifically electric fishing in banks areas, in order to assess local ichtyofauna. The captured specimens were identified at species level and biometric measurements (length and weight) were made. Data were processed to obtain the distribution, abundance and biomass of the species.

2.1.2.G. Terrestrial flora and fauna monitoring

2.1.2.G.1 Terrestrial flora

Activities from this reporting period, regarding terrestrial flora monitoring are presented in 2.1.2.G.1.1.

Table. 2.1.2.G.1.1 *Specific objective: Terrestrial flora monitoring*

No.	Activities
1.	Establishing the details and monitoring planning of permanent plots and of phytosociological elevations according to Braun Blanquet methodology
2.	Performing monitoring activity - setting the phytosociological elevations in the main types of existent habitats
3.	Description of identified habitats types - Annex 6.8
4.	Input of parameters recorded in the field in computerized database

Results for terrestrial flora monitoring in critical point CP02 are presented in Annex 6.8.



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2.1.2.G.2 Terrestrial fauna/ Avifauna

During this period no activities have been made for avifauna monitoring.

2.1.2.H. Natura 2000 sites monitoring

Activities conducted during this reporting period, regarding Natura 2000 sites monitoring, are summarized in Table 2.1.2.H.1.

Table. 2.1.2.H.1 Specific objective: Monitoring of Natura 2000 sites

No.	Activities
1.	Field campaign for data collecting (as Table 1.2)
2.	Monitoring and census for terrestrial flora: floristic observations, abundance estimate for each plat species - at canopy, shrubs and grass level
3.	Analysis and centralization of the obtained data (Annex 6.9)

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)

2.1.3.A. Air quality monitoring

The activities carried out during post-construction period 01/31.07.2017, regarding air quality monitoring, in this critical point are those presented in Table 2.1.1.A.1.

For critical point CP 10, in July 2017 have not been conducted any monitoring activities regarding air quality, being a post-construction period (in this main critical point CP10 have been made the reception of the construction work) frequency is biannual (as Table 1.1).

2.1.3.B. Noise monitoring

The activities carried out during reporting period, related to noise level monitoring, reported for this critical point are those presented in Table 2.1.1.B.1.

For critical point CP 10, in July 2017 have not been conducted any activities for noise level monitoring, being a post-construction period (in this main critical point CP10 have been made the reception of the construction work) frequency is biannual (as Table 1.1).

2.1.3.C. Soil quality monitoring

Activities performed during 01/30 June 2017, regarding soil quality monitoring, for this critical point, are summarized in Table 2.1.1.C.1.

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

2.1.3.D. Hydrophological monitoring

The activities from this reporting period are synthetically presented in Table 2.1.3.D.1:

Overall 3 main activities have been carried out:

- Single-beam bathymetric measurements for sections profiling;
- Flow and velocity measurements on the monitoring sections;
- Turbidity and level continuous measurements in the 3 automatic hydrometric stations have continued.

Table 2.1.3.D.1. Specific objective: hydromorphological monitoring

No.	Activities
1.	Single-beam bathymetric measurements for sections profiling
2.	Flow and velocity measurements on the monitoring sections
3.	Turbidity and level continuous measurements in the 3 automatic hydrometric stations

2.1.3.E. Water and sediments quality monitoring

The activities carried out during reporting period related to water and sediments quality in this critical point are those presented in Table 2.1.1.E.1.

During this period no water and sediment sampling have been made from this critical point.

2.1.3.F. Aquatic flora and fauna monitoring

The activities carried out during this reporting period, regarding aquatic fauna and flora (except for ichthyofauna), are summarized in Table 2.1.3.F.1.

Table 2.1.3.F.1 Specific objective: Aquatic flora and fauna monitoring

No.	Activities
1.	Organizing the sampling campaign for phytoplankton, macrophytes and zooplankton (Table 1.2)
2.	Conducting the sampling campaign for phytoplankton, macrophytes and zooplankton (sampling bulletins for aquatic flora and fauna - Annex 6.2.1)
3.	Laboratory analysis for phytoplankton and zooplankton

No.	Activities
4.	Further laboratory analysis for benthic macroinvertebrates samples collected in campaign 15.06.2017
5.	Processing and analysis for obtained data

In this campaign, from CP 10 were collected phytoplankton samples for *quantitative and qualitative analysis*, as presented in Table 2.1.3.F.2.

Table 2.1.3.F.2 Phytoplankton samples

Type of Critical Point	Critical Point (CP)	Section	Samples collected for laboratory analysis							
			Qualitative analysis				Quantitative analysis			
			Left bank	Thalweg	Right bank	Average sample	Left bank	Thalweg	Right bank	Average sample
Main	10	18	1	1	1	1	1	1	1	1
		20	1	1	1	1	1	1	1	1
TOTAL			6			2	6			2

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

In Table 2.1.3.F.3 is presented the number of samples collected in this campaign from CP10 for *macrophytes* analysis.

Table 2.1.3.F.3. Macrophytes samples

Type of Critical Point	Critical Point (CP)	Section	Qualitative and quantitative analysis	
			Left bank	Right bank
Main	10	1	1	1
		2	1	1
		3	1	1
TOTAL			6	

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

Samples of *zooplankton* were collected from CP10 as presented in Table 2.1.3.F.4.

Table 2.1.3.F.4 Zooplankton samples

Type of Critical Point	Critical Point (CP)	Section	Samples collected for laboratory analysis		
			Left bank	Thalweg	Right bank
Main	10	1	1	1	1

Type of Critical Point	Critical Point (CP)	Section	Samples collected for laboratory analysis		
			Left bank	Thalweg	Right bank
		2	1	1	1
		3	1	1	1
TOTAL			9		

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

2.1.3.F.is. Sturgeons and barbell migration monitoring

In July, monitoring for sturgeons' migration have been made with the monitoring systems existent in this area.

2.1.3.F.i. Other fish species monitoring

In July was conducted scientifically electric fishing in banks areas, in order to assess local ichtyofauna. The captured specimens were identified at species level and biometric measurements (length and weight) were made. Data were processed to obtain the distribution, abundance and biomass of the species.

2.1.3.G. Terrestrial flora and fauna monitoring

2.1.3.G.1 Terrestrial flora

Activities conducted during this reporting period, regarding terrestrial flora monitoring are presented in Table 2.1.3.G.1.1.

Table. 2.1.3.G.1.1 *Specific objective: Terrestrial flora monitoring*

No.	Activities
1.	Establishing the details and monitoring planning of permanent plots and of phytosociological elevations according to Braun Blanquet methodology
2.	Performing monitoring activity - setting the phytosociological elevations in the main types of existent habitats
3.	Description of identified habitats types - Annex 6.8
4.	Input of parameters recorded in the field in computerized database

Results of terrestrial flora monitoring in critical point CP10 are presented in Annex 6.8.

2.1.3.G.2 Terrestrial fauna/ Avifauna

In this reporting period have not been made monitoring activities for avifauna in critical point area.

2.1.3.H. Natura 2000 sites monitoring

Activities performed during this reporting period regarding Natura 2000 sites monitoring, are summarized in Table 2.1.3.H.1.

Table 2.1.3.H.1. Specific objective - Natura 2000 sites monitoring

No.	Activities
1.	Field campaign for data collecting (as Table 1.2)
2.	Monitoring and census for terrestrial flora: floristic observations, abundance estimate for each plant species - at canopy, shrubs and grass level
3.	Analysis and centralization of the obtained data (Annex 6.9)

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

Due to completion of hydrotechnical works has not been necessary the building site activity monitoring. Works reception was carried out on August 1st, 2014.

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

The activities carried out during 01/31.07.2017, related to air quality monitoring, reported for these secondary critical points are those presented in Table 2.1.4.1.A.1.

Table 2.1.4.1.A.1. Specific objective: Air quality monitoring

No.	Activities
1.	Contribution to Monthly Report 75
2.	Contribution to Interim Report 17

During post-construction period 01/31.07.2017, no monitoring activities for air quality have been made in these secondary critical points. (CP 03A and CP 03B).



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2.1.4.1.B. Noise level monitoring

The activities carried out during 01/31.07.2017, related to noise level monitoring, in these secondary critical points are those presented in Table 2.1.4.1.B.1.

Table 2.1.4.1.B.1. Specific objective: noise monitoring

No.	Activities
1.	Contribution to Monthly Report 75
2.	Contribution to Interim Report 17

In post-construction period 01/31.07.2017 have not been made any monitoring activities for noise level in these secondary critical points (CP 03A and CP 03B).

2.1.4.1.C. Soil quality monitoring

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

During this 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

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

2.1.4.1.F. Aquatic flora and fauna monitoring

The activities carried out during this reporting period, regarding aquatic fauna and flora (except for ichthyofauna), are summarized in Table 2.1.4.1.F.1.

Table 2.1.4.1.F.1. Specific objective: Aquatic flora and fauna monitoring

No.	Activities
1.	Organizing the sampling campaign for phytoplankton, macrophytes and zooplankton (Table 1.2)
2.	Conducting the sampling campaign for phytoplankton, macrophytes and zooplankton (sampling bulletins for aquatic flora and fauna - Annex 6.2.1)
3.	Laboratory analysis for phytoplankton and zooplankton
4.	Further laboratory analysis for benthic macroinvertebrates samples collected in campaign 15.06.2017
5.	Processing and analysis for obtained data

In this campaign, from CP 03 were collected *Phytoplankton samples* for quantitative and

qualitative analysis, as presented in Table 2.1.4.1.F.2.

Table 2.1.4.1.F.2. Phytoplankton samples

Type of Critical Point	Critical Point (CP)		Samples collected for laboratory analysis							
			Qualitative analysis				Quantitative analysis			
			Left bank	Thalweg	Right bank	Average sample	Left bank	Thalweg	Right bank	Average sample
Secondary	03	03A	1	1	1	1	1	1	1	1
		03B	1	1	1	1	1	1	1	1
TOTAL			6			2	6			2

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

In Table 2.1.4.1.F.3 is presented the number of samples collected in this campaign from CP 03 for macrophytes analysis.

Table 2.1.4.1.F.3. Macrophytes samples

Type of Critical Point	Critical Point (CP)		Qualitative analysis și cantitativă	
			Left bank	Right bank
Secondary	03A	upstream	1	1
		downstream	1	1
	03B	upstream	1	1
		downstream	1	1
TOTAL			8	

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

Zooplankton samples were collected from CP03 as presented in Table 2.1.4.1.F.4.

Table 2.1.4.1.F.4. Zooplankton samples

Type of Critical Point	Critical Point (CP)		Samples collected for laboratory analysis		
			Left bank	Thalweg	Right bank
Secondary	03A	upstream	1	1	1
		downstream	1	1	1
	03B	upstream	1	1	1
		downstream	1	1	1
TOTAL			12		

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

completed, see Annex 6.2.1.

No.	Activities
1.	Organizing the sampling campaign for aquatic macroinvertebrates (Table 1.2)
2.	Conducting the sampling campaign for aquatic macroinvertebrates (sampling bulletins for aquatic flora and fauna - Annex 6.2.6)
3.	Laboratory preparing and analysis for benthic macroinvertebrates samples

In Table 2.1.4.1.F.2 are presented *benthic macroinvertebrates* samples collected from CP 03.

Table 2.1.4.1.F.2 Benthic macroinvertebrates samples

Type of Critical Point	Critical Point (CP)		Samples collected for laboratory analysis	
			Left bank	Right bank
Secondary	03A	upstream	1	1
		downstream	1	1
	03B	upstream	1	1
		downstream	1	1
TOTAL			8	

For each sampling point, have been determined geographical coordinates. Samples were labeled according to the encoding and labeling instructions. For each sample, a bulletin has been completed, see Annex 6.2.6.

2.1.4.1.F.is. Sturgeons and barbell migration monitoring

In June, the 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 July was conducted scientifically electric fishing in banks areas, in order to assess local ichthyofauna. The captured specimens were identified at species level and biometric measurements (length and weight) were made. Data were processed to obtain the distribution, abundance and biomass of the species.

2.1.4.1.G. Terrestrial flora and fauna monitoring

2.1.4.1.G.1 Terrestrial flora

Activities conducted during this reporting period, regarding terrestrial flora monitoring are presented in Table 2.1.4.1.G.1.1.

Table. 2.1.4.1.G.1.1 Specific objective: Terrestrial flora monitoring

No.	Activities
1.	Establishing the details and monitoring planning of permanent plots and of phytosociological elevations according to Braun Blanquet methodology
2.	Performing monitoring activity - setting the phytosociological elevations in the main types of existent habitats
3.	Description of identified habitats types - Annex 6.8
4.	Input of parameters recorded in the field in computerized database

Results for terrestrial monitoring in critical point CP03 are presented in Annex 6.8.

2.1.4.1.G.2 Terrestrial fauna / Avifauna

During this period no avifauna monitoring activities have been made.

2.1.4.1.H. Natura 2000 sites monitoring

The activities carried out during reporting period, regarding Natura 2000 sites monitoring, monitoring, are summarized in Table 2.1.4.1.H.1.

Table. 2.1.4.1.H.1 Specific objective: Monitoring of Natura 2000 sites

No.	Activities
1.	Field campaign for data collecting (as Table 1.2)
2.	Monitoring and census for terrestrial flora: floristic observations, abundance estimate for each plat species - at canopy, shrubs and grass level
3.	Analysis and centralization of the obtained data (Annex 6.9)

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

The activities carried out during post-construction period 01/31.07.2017, regarding air quality monitoring, in these secondary critical points are those presented in Table 2.1.4.1.A.1.

In this post-construction period have not been conducted any air monitoring activities, in



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these secondary critical points (CP 04A and CP 04B).

2.1.4.2.B. Noise level monitoring

The activities carried out during post-construction period 01/31.07.2017, regarding noise level monitoring, in this secondary critical points are those presented in Table 2.1.4.1.B.1.

During this post-construction period, no monitoring activities for noise level have been made, in these secondary critical points (CP 04A and CP 04B).

2.1.4.2.C. Soil quality monitoring

The activities carried out during reporting period regarding soil quality monitoring in this critical point are summarized in Table 2.1.1.C.1.

In this period have not been made sampling activities for soil.

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 sampling activities for water and sediments.

2.1.4.2.F. Aquatic flora and fauna monitoring

The activities carried out during this reporting period, regarding aquatic fauna and flora (except for ichthyofauna), are summarized in Table 2.1.4.2.F.1.

Table 2.1.4.2.F.1. Specific objective: Aquatic flora and fauna monitoring

No.	Activities
1.	Organizing the sampling campaign for phytoplankton, macrophytes and zooplankton (Table 1.2)
2.	Conducting the sampling campaign for phytoplankton, macrophytes and zooplankton (sampling bulletins for aquatic flora and fauna - Annex 6.2.1)
3.	Laboratory analysis for phytoplankton and zooplankton
4.	Further laboratory analysis for benthic macroinvertebrates samples collected in campaign 15.06.2017
5.	Processing and analysis for obtained data

In this campaign from CP 04 were collected phytoplankton samples for *quantitative and qualitative analysis*, as presented in Table 2.1.4.2.F.2.

Table 2.1.4.2.F.2 Phytoplankton samples

Type of Critical	Critical Point	Samples collected for laboratory analysis	
		Qualitative analysis	Quantitative analysis

Point	(CP)		Left bank	Thalweg	Right bank	Average sample	Left bank	Thalweg	Right bank	Proba Medie
Secondary	04	04A	1	1	1	1	1	1	1	1
		04B	1	1	1	1	1	1	1	1
TOTAL			6			2	6			2

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

In Table 2.1.4.2.F.3 is presented the number of samples collected from CP04 in this campaign for *macrophytes* analysis.

Table 2.1.4.2.F.3. Macrophytes samples

Type of Critical Point	Critical Point (CP)		Qualitative analysis și cantitativă	
			Left bank	Right bank
Secondary	04A	upstream	1	1
		downstream	1	1
	04B	upstream	1	1
		downstream	1	1
TOTAL			8	

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

Zooplankton samples were collected from CP 04 as presented in Table 2.1.4.2.F.4.

Table 2.1.4.2.F.4. Zooplankton samples

Type of Critical Point	Critical Point (CP)		Samples collected for laboratory analysis		
			Left bank	Thalweg	Right bank
Secondary	04A	upstream	1	1	1
		downstream	1	1	1
	04B	upstream	1	1	1
		downstream	1	1	1
TOTAL			12		

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

2.1.4.2.F.is. Sturgeons and barbell migration monitoring

In June 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 July was conducted scientifically electric fishing in banks areas, in order to assess local ichthyofauna. The captured specimens were identified at species level and biometric measurements (length and weight) were made. Data were processed to obtain the distribution, abundance and biomass of the species.

2.1.4.2.G. Terrestrial flora and fauna monitoring

2.1.4.2.G.1 Terrestrial flora

Activities conducted during this reporting period, regarding terrestrial flora monitoring are presented in Table 2.1.4.2.G.1.1.

Table. 2.1.4.2.G.1.1 *Specific objective: Terrestrial flora monitoring*

No.	Activities
1.	Establishing the details and monitoring planning of permanent plots and of phytosociological elevations according to Braun Blanquet methodology
2.	Performing monitoring activity - setting the phytosociological elevations in the main types of existent habitats
3.	Description of identified habitats types - Annex 6.8
4.	Input of parameters recorded in the field in computerized database

The results of terrestrial flora monitoring in critical point CP 04 are presented in Annex 6.8.

2.1.4.2.G.2 Terrestrial fauna/Avifauna

During this period no activities have been made for avifauna monitoring.

2.1.4.2.H. Natura 2000 monitoring sites

Activities conducted during this reporting period, regarding Natura 2000 sites monitoring, are summarized in Table 2.1.4.2.H.1.

Table. 2.1.4.2.H.1 *Specific objective: Natura 2000 sites monitoring*

No.	Activities
1.	Field campaign for data collecting (as Table 1.2)
2.	Monitoring and census for terrestrial flora: floristic observations, abundance estimate for each plot species - at canopy, shrubs and grass level
3.	Analysis and centralization of the obtained data (Annex 6.9)



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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

The activities carried out during post-construction 01/31.07.2017, regarding air quality monitoring, for this secondary critical point are those presented in Table 2.1.4.1.A.1.

In this post-construction period, were not been conducted any air quality monitoring activities in this secondary critical point.

2.1.4.3.B. Noise level monitoring

The activities carried out during post-construction 01/31.07.2017, regarding noise level monitoring, in this secondary critical point are those presented in Table 2.1.4.1.B.1.

In this post-construction period, were not been conducted any noise level monitoring activities in this secondary critical point.

2.1.4.3.C. Soil quality monitoring

Activities performed during reporting period, regarding soil quality monitoring, in this critical point, were summarized in Table 2.1.1.C.1.

During this period no soil sampling have been made.

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

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

2.1.4.3.F. Aquatic flora and fauna monitoring

Activities performed during this reporting period, regarding aquatic fauna and flora (except for ichtyofauna) are summarized in Table 2.1.4.3.F.1.

Table. 2.1.4.3.F.1. Specific objective: Aquatic flora and fauna monitoring

No.	Activities
1.	Organizing the sampling campaign for phytoplankton, macrophytes and zooplankton (Table 1.2)
2.	Conducting the sampling campaign for phytoplankton, macrophytes and zooplankton (sampling bulletins for aquatic flora and fauna - Annex 6.2.1)
3.	Laboratory analysis for phytoplankton and zooplankton
4.	Further laboratory analysis for benthic macroinvertebrates samples collected in campaign 15.06.2017
5.	Processing and analysis for obtained data

In this campaign from CP 07 were collected phytoplankton samples for *quantitative and qualitative analysis*, as presented in Table 2.1.4.3.F.2.

Table 2.1.4.3.F.2. Phytoplankton samples

Type of Critical Point	Critical Point (CP)	Samples collected for laboratory analysis							
		Qualitative analysis				Quantitative analysis			
		Left bank	Thalweg	Right bank	Average sample	Left bank	Thalweg	Right bank	Proba Medie
Secondary	07	1	1	1	1	1	1	1	1
TOTAL		3			1	3			1

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

In Table 2.1.4.3.F.3 is presented the number of samples collected in this campaign from CP07 for *macrophytes* analysis.

Table 2.1.4.3.F.3. Macrophytes samples

Type of Critical Point	Critical Point (CP)	Qualitative analysis și cantitativă	
		Left bank	Right bank
Secondary	07	upstream	1
		downstream	1
TOTAL		4	

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

Zooplankton samples were collected from CP 07 as presented in Table 2.1.4.3.F.4.

Table 2.1.4.3.F.4. Zooplankton samples

Type of Critical Point	Critical Point (CP)	Section	Samples collected for laboratory analysis		
			Left bank	Thalweg	Right bank
Secondary	07	1	1	1	1
		2	1	1	1
TOTAL			6		

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

2.1.4.3.F.is. Sturgeons and barbell migration monitoring

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

2.1.4.3.F.i. Other fish species monitoring

In July was conducted scientifically electric fishing in banks areas, in order to assess local ichtyofauna. The captured specimens were identified at species level and biometric measurements (length and weight) were made. Data were processed to obtain the distribution, abundance and biomass of the species.

2.1.4.3.G. Terrestrial flora and fauna monitoring

2.1.4.3.G.1 Terrestrial flora

Activities conducted during this reporting period, regarding terrestrial flora monitoring are presented in Table 2.1.4.3.G.1.1.

Table. 2.1.4.3.G.1.1 Specific objective: Terrestrial flora monitoring

No.	Activities
1.	Establishing the details and monitoring planning of permanent plots and of phytosociological elevations according to Braun Blanquet methodology
2.	Performing monitoring activity - setting the phytosociological elevations in the main types of existent habitats
3.	Description of identified habitats types - Annex 6.8
4.	Input of parameters recorded in the field in computerized database

The results of terrestrial flora monitoring in critical point CP 07 are presented in Annex 6.8.



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2.1.4.3.G.2 Terrestrial fauna / Avifauna

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

2.1.4.3.H. Natura 2000 sites monitoring

Activities conducted during this reporting period, regarding Natura 2000 sites monitoring, are summarized in Table 2.1.4.3.H.1.

Table. 2.1.4.3.H.1 Specific objective: Monitoring of Natura 2000 sites

No.	Activities
1.	Field campaign for data collecting (as Table 1.2)
2.	Monitoring and census for terrestrial flora: floristic observations, abundance estimate for each plat species - at canopy, shrubs and grass level
3.	Analysis and centralization of the obtained data (Annex 6.9)

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 July 2017 the following activities were performed for the Critical Point CP01 area:

- Creating the mid-scale 3D hydrodynamic model using the Delft3D software
- Making scenarios for the analysis of the sturgeon swimming capacity.

2.2.1. Creating the mid-scale quasi 3D hydrodynamic model using the Delft3D software

Based on the updated cell network and the data obtained from field measurements carried out by INCDDPM team in May-June 2017, a bathymetric model was created for the study area CP01, covering the Bala - Old Danube branch bifurcation area (between km 348 - km 344 Old Danube and km 9 Bala branch), in critical point CP01 area.

Prior to this operation, a comparative analysis of the data presented in the previous report with those resulting from processing the field measurements carried out during May-June 2017.

With regard to the riverbed morphology, in figures 2.2.1.1.-2.2.1.3. are presented the comparison of longitudinal control sections in Bala branch area, in pre-construction [2013] and post-construction [2016 and 2017].

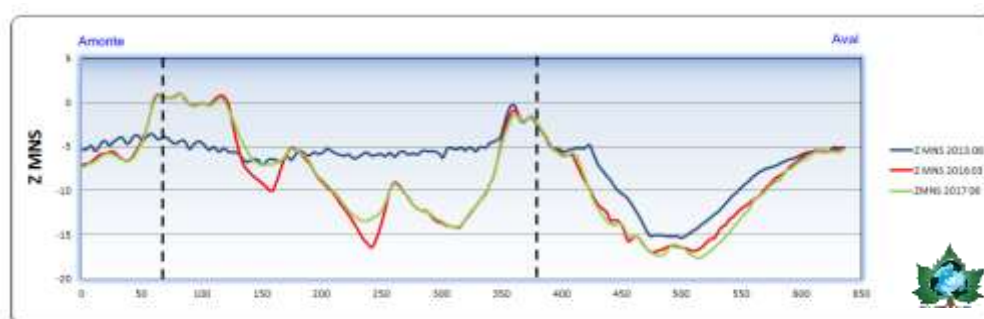


Figure 2.2.1.1. Longitudinal section SLCB1 presenting the riverbed in 2013, 2016 and 2017

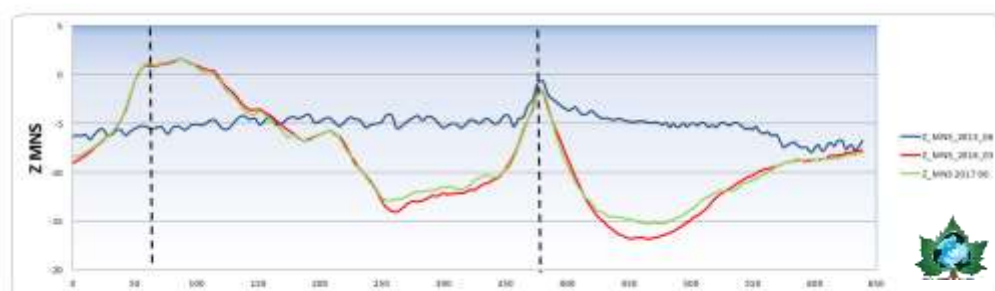


Figure 2.2.1.2. Longitudinal section SLCB2 presenting the riverbed in 2013, 2016 and 2017

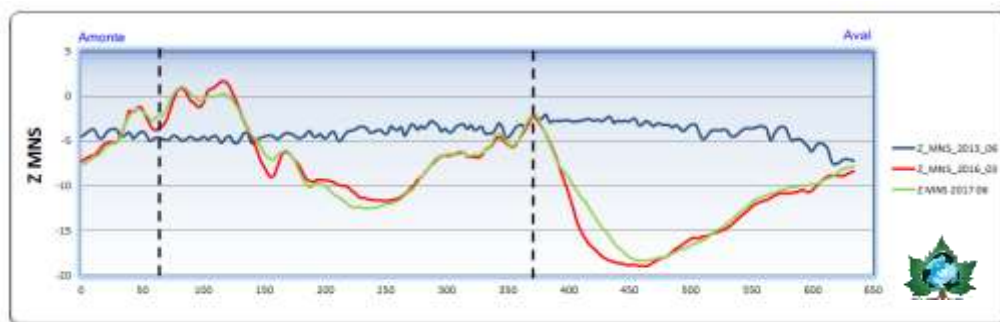


Figure 2.2.1.3. Longitudinal section SLCB3 presenting the riverbed in 2013, 2016 and 2017

As can be observed from these images, there are no major differences recorded for the riverbed morphology between the longitudinal control sections of 2017 and those from 2016. The updated bathymetric model was constructed analytically by automatically correlating the coordinates of the cell centers that form the computing network and the georeferential information in the same coordinate system. Overlay of bathymetric data across network cells was accomplished by using the QUICKIN module of Deflt3D software and was an operation that required a large amount of analysis.

The bathymetry data obtained using the multi-beam technique were processed so that for each cell of the network was assigned the absolute quota value - in Stereo 70 MNS system- of the Danube riverbed.

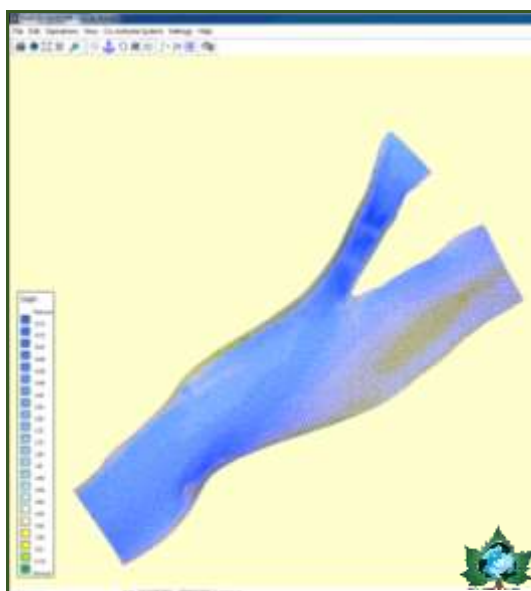


Figure 2.2.1.4 Computation grid in Bala area with bathymetric data

Variable „depth” from figure 2.2.1.4 legend does not have the meaning of depth but of absolute quota (relative to MNS quota - Black Sea Sulina) of Danube riverbed - bathymetric values obtained by interpolation of those cells.



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Using the computing network so constructed, were established data regarding boundary conditions. These consist of input the flow rate at the entrance to the studied sector and the water level at the exit from the grid, with results obtained in intermediate areas.

Table 2.2.1.1 Boundary conditions used for hydrodynamic model development

	Upstream	Downstream	
	Danube km348	Bala branch km9	Old Danube branch km344
Flow rate [m³/s]	6644	3984	2660
Level [m MNS]	9.85	9.53	9.59

Introducing the flow and level values in the model, running the model and preliminary calibration are based on the data from both the hydrometric stations on the Danube and branches forming the studied sector, as well as from field measurements (Table 2.2.1.1). In order to overlap the real flow area of the Danube with the cell network built in Delft3D program, it is necessary to use as input data a minimum flow of 4980 m³/s at the Izvoarele hydrometric station (5290 m³/s in Călărași). Taking this into account, in order to achieve the hydrodynamic model, was established the flow rate of 6644 m³/s at Izvoarele, as this value was recorded in the period closest to the multi-beam measurement campaign, when ADCP measurements were made (Acoustic Doppler Current Profiler).

In the first phase, with Delft3D software, a test model was created through which will be observed aspects of quality and reliability of the results. In order to water-specific hydrodynamic parameters values, resulting from numerical modeling, be similar to those determined by measurements, it is necessary to calibrate the hydrodynamic model according to water level, flow rate and velocities. This operation is accomplished by adjusting the roughness and viscosity values of the dynamics. Also, to ensure the convergence of the model, the time step has also been modified.

In order to obtain results consistent with reality, there were built * .rgh files for which variable roughness values were selected in the analyzed sector. At the same time, the value of dynamic viscosity has changed. To ensure the convergence of the preliminary model, a step of 0.25 minutes was used.

In order to calibrate the model based on water velocity, the flow rates resulting from modeling were compared with water velocities measured by ADCP technique (Acoustic Doppler Current Profiler) in the field control sections.

Since, in terms of the water flow velocity distributions, were recorded differences between the values obtained from the measurements and from numerical modeling, it was necessary that the developed model to be optimized. Thus, on the cells grid that covers the same calculation area were applied a series of operations, resulting in a fine grid with improved characteristics. On the thus created network, was implemented the bathymetry resulting from the data processing from the high resolution single-beam and multi-beam measurements performed between May and June 2017.

The results obtained from the calibration and validation of the numerical model will be

presented in the Interim Report corresponding to this month.

In the calibration and validation process of the hydrodynamic model, the comparative analysis of the water velocity distribution performed in June report will be taken into account. To this is added the results obtained from the ADCP measurements carried out in May-June 2017, at a flow similar to that considered in the previous report (Figures 2.2.1.5.a - 2.2.1.5.c).

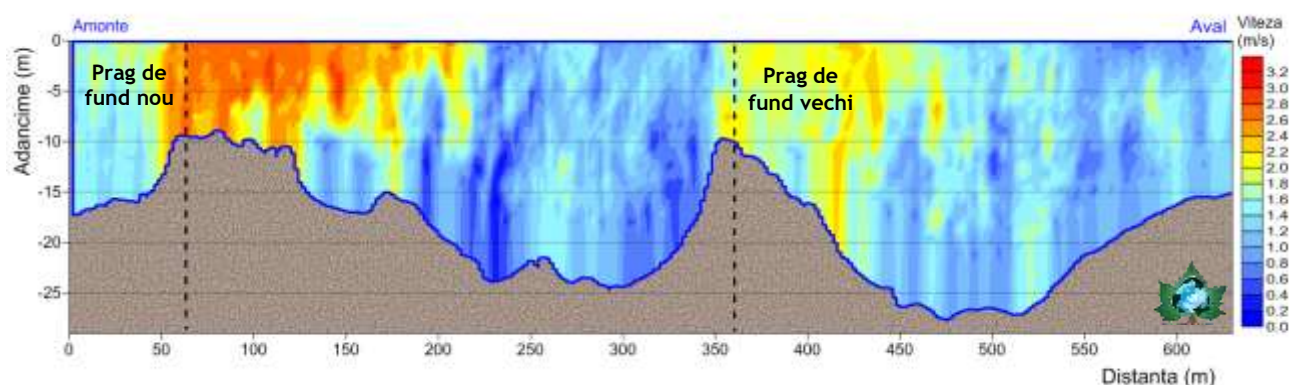


Figure 2.2.1.5.a. Longitudinal section SLCB1 with water velocity distribution - post-construction period [2017]

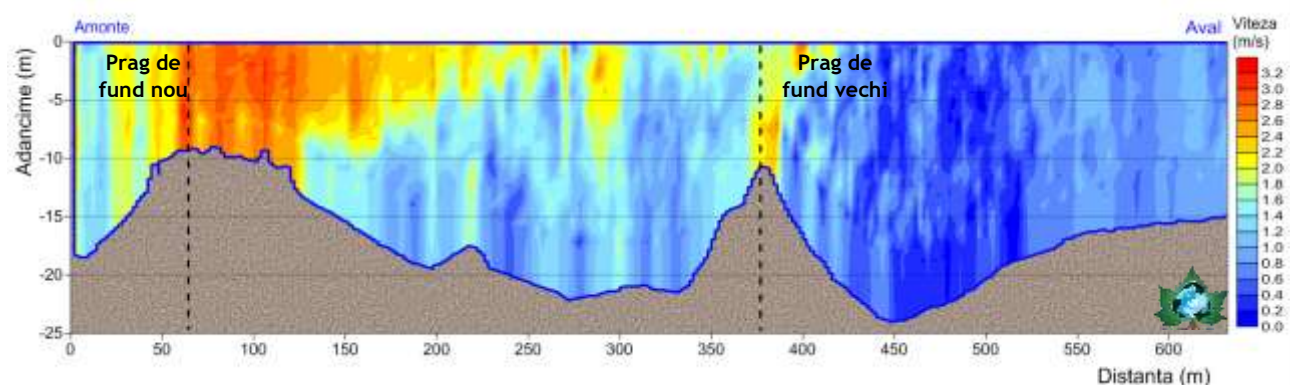


Figure 2.2.1.5.b. Longitudinal section SLCB2 with water velocity distribution - post-construction period [2017]

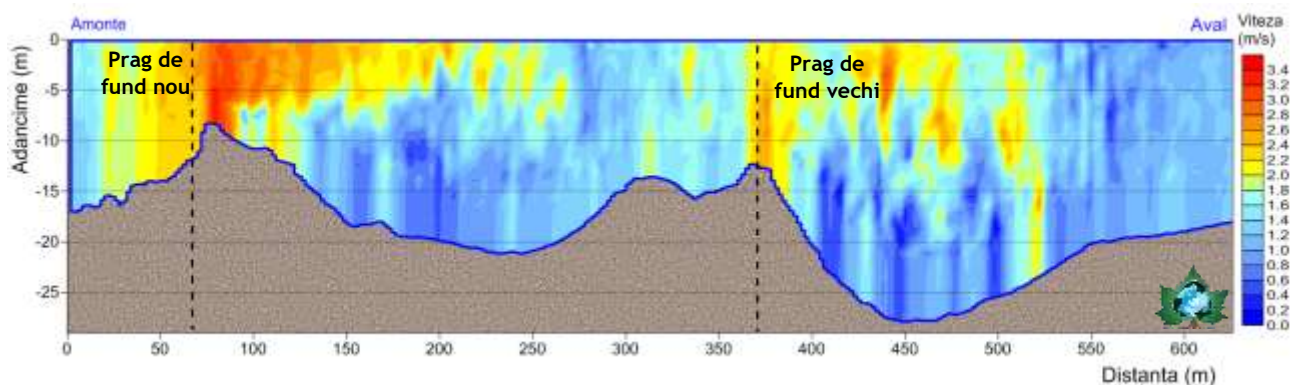


Figura 2.2.1.5.c. Longitudinal section SLCB3 with water velocity distribution - post-construction period [2017]

In this case, the highest values were recorded in the section near left bank, values

exceeding 3.4 m/s.

To these investigations is added the analysis of water velocity distribution in hydrotechnical construction sections (new and old bottom sill) (Figures 2.2.1.6.a and 2.2.1.6.b.).

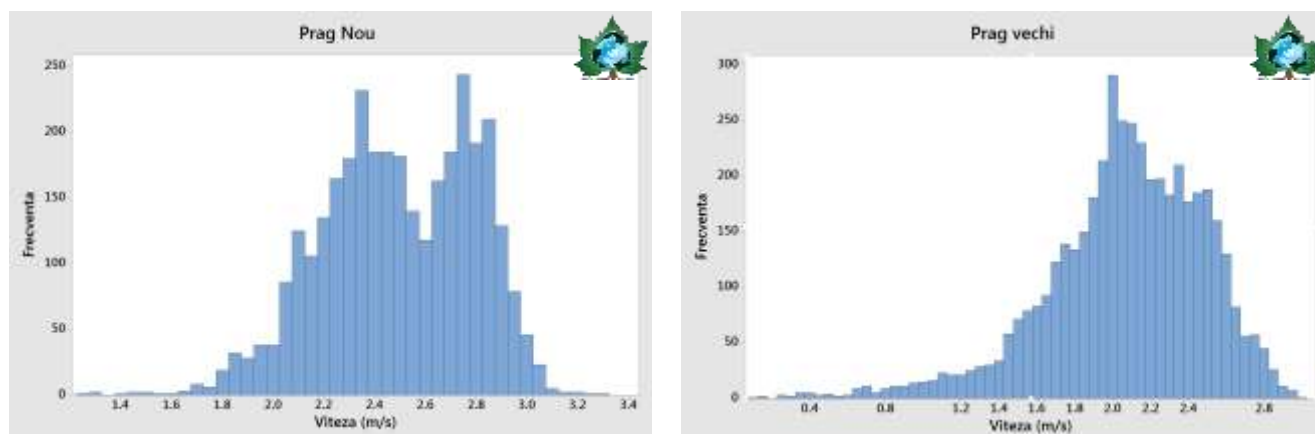


Figure 2.2.1.6. Velocity histograms

a). Cross section new bottom sill; b). Cross section old bottom sill, [2017]

As can be observed, in the new bottom sill area, the highest occurrence frequency is for velocities values reaching 2.75 m/s. In contrast, in the area of old bottom sill the water velocities of 2.0 m/s are the most frequent.

2.2.2. Developing scenarios to analyze the swimming capacity of sturgeons

In order to analyze the sturgeons' swimming capacity, numerical simulations will be carried out having as input data the updated geometry for 2017 and hydrological data from the period when the sturgeons crossed upstream the bottom sill on Bala branch [time period 2011- 2017].

Prior to this activity, based on the data obtained from field measurements carried out during the monitoring period, investigations were carried out to highlight hydromorphological and hydrodynamic differences in pre-construction and post-construction period of the bottom sill in CP01 area (Monthly Report 74).

Because water velocity plays an important role in the investigation of aquatic ecosystems, research have been carried out on sturgeons' swimming capacity taking into account the variation of this parameter.

After calibration and validation of the numerical model, numerical simulations will be carried out, resulting in data of water velocity distribution. These will be analyzed in the control sections established for ichthyofauna and hydrodynamic parameters monitoring.

The detailed results of these analyzes will be included in the related Interim Report.

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	3
4.	Ichthyologist 1	Cristea Victor	0
5.	Ichthyologist 2	Falka Istvan	6
6.	Hydrology	Poteraș George	8
7.	Hydraulic sedimentology	Ungureanu Gh Viorel	12
8.	Phytoplankton and aquatic macrophytes	Marinescu Florica	11
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	5
13.	Ornithologist 1	Jozsef Szabo	0
14.	Ecologist 1	Ambrus Laszlo	2
15.	Ecologist 2		0
16.	Assessor	Tudor Marian	5
17.	3D Modeling	Helmut Habersack	

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).



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

The monitoring activities for the period 01-31 August 2017 are synthetically presented in the table 3.4.

Table 3.4. Activities for the period of 01.08-31.08.2017

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	YES	YES	YES	YES	YES	YES
2.	Processing and interpretation of field and laboratory data (where is necessary)	YES	YES	YES	YES	YES	YES	YES	YES
3.	Monthly report preparation	YES	YES	YES	YES	YES	YES	YES	YES



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4. TIME SCHEDULE AND BUDGET PROJECT

4.1. Time schedule for project implementation

ID	Task Name	Start	Finish	July 2017						September
				19.06	01 July	03.07	17.07	01 August	14.08	
								31.07	28.08	
1	Air monitoring: Contribution to Interim Report 16	Mon 03.07.17	Thu 31.08.17							
2	75th Month	Mon 03.07.17	Mon 31.07.17							
3	76th Month	Tue 01.08.17	Thu 31.08.17							
4	Air monitoring: Processing and assessing of the obtained data and measurements for air quality in secondary critical points CP 03A, CP 03B, CP 04A, CP 04B, CP 07.	Mon 03.07.17	Mon 31.07.17							
5	75th Month	Mon 03.07.17	Mon 31.07.17							
6	Air monitoring: Processing and assessing of the obtained data and measurements for air quality in secondary critical points CP 03A, CP 03B, CP 04A, CP 04B, CP 07.	Mon 03.07.17	Mon 31.07.17							
7	75th Month	Mon 03.07.17	Mon 31.07.17							
8	Air monitoring: Measurements and sampling campaigns for air quality, in main critical points CP 01, 02.	Tue 01.08.17	Thu 31.08.17							
9	76th Month	Tue 01.08.17	Thu 31.08.17							
10	Noise monitoring: Contribution to Interim Report RI16	Mon 03.07.17	Thu 31.08.17							
11	75th Month	Mon 03.07.17	Mon 31.07.17							
12	76th Month	Tue 01.08.17	Thu 31.08.17							
13	Noise monitoring: Performing the measuring and sampling campaign for noise monitoring in main critical points CP 01 and 02.	Tue 01.08.17	Thu 31.08.17							
14	76th Month	Tue 01.08.17	Thu 31.08.17							
15	Water quality monitoring - Water (physical-chemical analysis) - physical-chemical analysis C64 (CP 01, CP 02, CP 10)	Mon 03.07.17	Mon 31.07.17							
16	75th Month	Mon 03.07.17	Mon 31.07.17							
17	Water quality monitoring - Water (physical-chemical analysis) - Data processing for Interim Report 16 (CP 01, CP 02, CP 10, CP03, CP04,	Tue 01.08.17	Thu 31.08.17							
18	76th Month	Tue 01.08.17	Thu 31.08.17							
19	Water quality monitoring - Sediments (heavy metals, organic micropollutants) - physical-chemical analysis C64 (CP 01, CP 02, CP	Mon 03.07.17	Mon 31.07.17							
20	75th Month	Mon 03.07.17	Mon 31.07.17							
21	Water quality monitoring CP01, CP02, CP10 - Sediments (heavy metals, organic micropollutants) - Data processing for Interim Report 16 (CP 01, CP 02, CP 10, CP03, CP04, CP07)	Tue 01.08.17	Thu 31.08.17							
22	76th Month	Tue 01.08.17	Thu 31.08.17							
23	Soil monitoring - physico-chemical analysis C26 (CP 01, CP 02, CP 10, CP 03, CP 04, CP 07)	Mon 03.07.17	Mon 31.07.17							
24	75th Month	Mon 03.07.17	Mon 31.07.17							



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ID	Task Name	Start	Finish	July 2017						September	
				19.06	01 July	03.07	17.07	01 August	14.08	01 September	28.08
25	Soil monitoring - Data processing for Interim Report 16 (CP 01, CP 02, CP 10, CP03, CP04, CP07)	Tue 01.08.17	Thu 31.08.17								
26	76th Month	Tue 01.08.17	Thu 31.08.17								
27	Aquatic flora monitoring CP 01/02/10/03A/03B/04A/04B/07 - phytoplankton - sampling, composition, abundance, biomass	Mon 03.07.17	Mon 31.07.17								
28	75th Month	Mon 03.07.17	Mon 31.07.17								
29	Aquatic flora monitoring CP 01/02/10/03A/03B/04A/04B/07 - aquatic macrophytes - sampling, composition, abundance, biomass, saprobic	Mon 03.07.17	Mon 31.07.17								
30	75th Month	Mon 03.07.17	Mon 31.07.17								
31	Aquatic fauna monitoring CP 01/02/10/03A/03B/04A/04B/07 - zooplankton - sampling, composition, abundance, biomass, saprobic	Mon 03.07.17	Mon 31.07.17								
32	75th Month	Mon 03.07.17	Mon 31.07.17								
33	Aquatic fauna monitoring CP 01/02/10/03A/03B/04A/04B/07 - aquatic macroinvertebrates - laboratory analysis - sampling, composition, abundance, biomass, saprobic index	Mon 03.07.17	Mon 31.07.17								
34	75th Month	Mon 03.07.17	Mon 31.07.17								
35	Hydromorphological monitoring in CP 01/CP 02 - Single-beam measurements - sections profiling	Mon 03.07.17	Thu 31.08.17								
36	75th Month	Mon 03.07.17	Mon 31.07.17								
37	76th Month	Tue 01.08.17	Thu 31.08.17								
38	Hydromorphological monitoring in CP 10 - Single-beam measurements - sections profiling	Mon 03.07.17	Mon 31.07.17								
39	75th Month	Mon 03.07.17	Mon 31.07.17								
40	Hydromorphological monitoring in CP 01/CP 02 - Flow rate monitoring (volume, velocity, level)	Mon 03.07.17	Thu 31.08.17								
41	75th Month	Mon 03.07.17	Mon 31.07.17								
42	76th Month	Tue 01.08.17	Thu 31.08.17								
43	Hydromorphological monitoring in CP 10 - Flow rate monitoring (volume, velocity, level)	Mon 03.07.17	Mon 31.07.17								
44	75th Month	Mon 03.07.17	Mon 31.07.17								
45	Hydromorphological monitoring in CP 01/CP 02 - level and turbidity measurements in hydrometric automatic station of INCDPM	Mon 03.07.17	Thu 31.08.17								
46	75th Month	Mon 03.07.17	Mon 31.07.17								
47	76th Month	Tue 01.08.17	Thu 31.08.17								
48	Hydromorphological monitoring in CP 10 - level and turbidity measurements in hydrometric automatic station of INCDPM	Mon 03.07.17	Mon 31.07.17								
49	75th Month	Mon 03.07.17	Mon 31.07.17								



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ID	Task Name	Start	Finish	July 2017						September
				19.06	01 July	03.07	17.07	01 August	14.08	01 September
50	Ichtyofauna biodiversity monitoring CP 01/02/03/04/07/10 - trails and migration periods monitoring for sturgeon specimens with	Mon 03.07.17	Thu 31.08.17							
51	75th Month	Mon 03.07.17	Mon 31.07.17							
52	76th Month	Tue 01.08.17	Thu 31.08.17							
53	Ichtyofauna biodiversity monitoring CP 01 - Installing the monitoring systems on Bala-Borcea sector	Mon 03.07.17	Mon 31.07.17							
54	75th Month	Mon 03.07.17	Mon 31.07.17							
55	Ichtyofauna biodiversity monitoring CP 01/02 - Data downloading from the monitoring systems for sturgeons migration	Mon 03.07.17	Thu 31.08.17							
56	75th Month	Mon 03.07.17	Mon 31.07.17							
57	76th Month	Tue 01.08.17	Thu 31.08.17							
58	Ichtyofauna biodiversity monitoring CP 01 - Scientific fishing for sturgeons species	Mon 03.07.17	Thu 31.08.17							
59	75th Month	Mon 03.07.17	Mon 31.07.17							
60	76th Month	Tue 01.08.17	Thu 31.08.17							
61	Ichtyofauna biodiversity monitoring CP 01/02/03/04/07/10 - Scientific fishing with electronarcosis for other fish species, near river banks	Mon 03.07.17	Mon 31.07.17							
62	75th Month	Mon 03.07.17	Mon 31.07.17							
63	Monitoring of terrestrial vegetation in critical points	Mon 03.07.17	Mon 31.07.17							
64	75th Month	Mon 03.07.17	Mon 31.07.17							
65	Terrestrial vegetation monitoring in Natura 2000 sites, in critical points area CP 01, CP 02, CP 10, CP 03, CP 04, CP 07	Mon 03.07.17	Mon 31.07.17							
66	75th Month	Mon 03.07.17	Mon 31.07.17							
67	Monthly reports	Mon 03.07.17	Thu 31.08.17							
68	75th Month	Mon 03.07.17	Mon 31.07.17							
69	76th Month	Tue 01.08.17	Thu 31.08.17							

4.2. Budget and expenses incurred during the reporting period

Justifying calculation for 01 - 31 July 2017

I. EXPERTS EXPENSES				
No.	Experts	No. of working days	Fee (Euro on working day)	Maximum total value of the fees
		Post - Construction (36 months)		
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	Ichthyologist 1	0	330	0,00 EUR
5	Ichthyologist 2	6	200	1.200,00 EUR
6	Hydrology	8	200	1.600,00 EUR
7	Hydraulic- sedimentology	12	200	2.400,00 EUR
8	Aquatic phytoplankton and macropytes	11	130	1.430,00 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	5	125	625,00 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				11.985,00 EUR
II EXPENSES with JUSTIFICATION				
1	Ichthyology- 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			8.306,08 EUR
SUBTOTAL EXPENSES with JUSTIFICATION				8.306,08 EUR
III. MATHEMETICAL MODELING				
1	Software acquisiton+hardware+ necessary licenses			0,00 EUR
2	Acquisition of bathymetric data, necessary for the mathematical modeling			19.986,60 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			39.650,00 EUR
SUBTOTAL NUMERICAL MODELING				59.636,60 EUR
TOTAL without V.A.T.				79.927,68 EUR

4.3. Budget and expenses for the next period

Estimated calculation for 01 - 31 August 2017

I. EXPERTS EXPENSES				
No.	Experts	No. of working days	Fee (Euro on working day)	Maximum total value of the fees
		Post - Construction (36 months)		
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	Ichthyologist 1	6	330	1.980,00 EUR
5	Ichthyologist 2	6	200	1.200,00 EUR
6	Hydrology	8	200	1.600,00 EUR
7	Hydraulic- sedimentology	12	200	2.400,00 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	5	125	625,00 EUR
13	Ornithologist 1	0	200	0,00 EUR
14	Ecologist 1	2	140	280,00 EUR
15	Ecologist 2	3	140	420,00 EUR
16	Evaluator	5	330	1.650,00 EUR
SUBTOTAL EXPERTS' FEES				12.955,00 EUR
II EXPENSES with JUSTIFICATION				
1	Ichthyology- 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			19.410,00 EUR
SUBTOTAL EXPENSES with JUSTIFICATION				19.410,00 EUR
III. MATHEMTICAL MODELING				
1	Software acquisiton+hardware+ necessary licenses			0,00 EUR
2	Acquisition of bathymetric data, necessary for the mathematical modeling			35.000,00 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				35.000,00 EUR
TOTAL without V.A.T.				67.365,00 EUR

5. CONCLUSIONS, RECOMMENDATIONS, WARNINGS

- 5.1 This Monthly Report reflects monitoring activities from July 2017 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, at 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 July 2017, hydromorphological monitoring activity was mainly based on ADCP measurements (flow rates and velocities) in main critical points area: CP01, CP02 and CP10, as well as single-beam measurements for sections profiling in the main 3 critical points, with low flow rates compared to historical data for this period of the year.
- 5.5 With Delft3D software has created a test model, through which it has been proposed to observe aspects related to the quality and reliability of the results. For water-specific hydrodynamic parameters resulting from numerical modeling to be similar to those determined by measurements, it is necessary to calibrate the hydrodynamic model according to water level, flow rate and velocity. This operation is accomplished by adjusting the roughness and viscosity values of the dynamics. Also, to ensure the model convergence, the time step has also been changed. The results obtained from the calibration and validation of the numerical model will be presented in the Interim Report for this month.
- 5.6 Since water velocity play an important role in the investigation of aquatic ecosystems, research have been made on the swimming capacity of sturgeons taking into account the variation of this parameter. After calibration and validation of the numerical model, numerical simulations will be carried out, resulting in data on the distribution of the water flow velocity. These will be analyzed in the control sections established for ichthyofauna and hydrodynamic parameters monitoring. The detailed results of these analyzes will be included in the related Interim Report.

6. ANNEXES

6.1 Relevant correspondence

6.2 Recording bulletins for sampling/measurements

6.2.1: AQUATIC FLORA and FAUNA sampling sheets

6.3 Experts' activity reports

6.4 Images of activities

6.5 Hydromorphology monitoring

6.6 Reports for analytical results during 1 - 30 June 2017

6.6.1: Reports for analytical results AIR

6.6.2: Reports for analytical results SOIL

6.6.3: Reports for analytical results WATER

6.6.4: Reports for analytical results SEDIMENTS

6.7 Ichthyofauna monitoring

6.7.1: Analysis of genetic variability for sturgeons

6.8 Terrestrial flora monitoring

6.9 Natura 2000 sites monitoring