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Naționala Agenția de Protecție Mediului  
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Comisia de Gospodărire a Dunării  
2007-2013



**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 71: 1 - 31 March 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. 71**

**01 - 31 March 2017**



**FINAL REPORT**



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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 March 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 bathymetric data acquisition.

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



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

Table 1.2. Objectives monitored during the period of 01.03-31.03.2017

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	16, 22, 24.03.2017	C65	NO	NO	NO	YES	YES	YES	YES	YES
B.	NOISE	16, 22, 24.03.2017	C68	NO	NO	NO	YES	YES	YES	YES	YES
C.	SOIL	20.03.2017	C25	NO	NO	NO	YES	YES	YES	YES	YES
D.	HYDROMORPHOLOGY	15, 16, 17, 21, 22, 23.03.2017	C68	YES	YES	YES	NO	NO	NO	NO	NO
E.	WATER QUALITY	17.03.2017, 20.03.2017	C63	YES	YES	YES	YES	YES	YES	YES	YES
	SEDIMENTS	17.03.2017, 20.03.2017	C63	YES	YES	YES	YES	YES	YES	YES	YES
F.	AQUATIC FLORA	17.03.2017, 20.03.2017	C26- Phytoplankton C25-Macrophytes	NO	NO	NO	YES	YES	YES	YES	YES
	AQUATIC FAUNA	17.03.2017	C26	YES	YES	YES	YES	YES	YES	YES	YES
	F.is. STURGEONS	22, 23, 24.03.2017	C29	YES	YES	YES	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:

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	<ul style="list-style-type: none"> <li>- LECKEL dust sampler</li> <li>- Auto-laboratory</li> <li>- Desaga pump</li> <li>- GPS</li> <li>- Autolaboratory for air monitoring</li> </ul>	<ul style="list-style-type: none"> <li>- Analytical balance KERN 770-14</li> <li>- Atomic absorption spectrometer with graphite furnace AAS - UNICAM 939</li> </ul>
B.	NOISE	<ul style="list-style-type: none"> <li>- Sound Level Meter and Microphone, Brüel &amp; Kjær Denmark</li> <li>- GPS</li> </ul>	
C.	SOIL	<ul style="list-style-type: none"> <li>- Burkle sampler</li> <li>- GPS</li> </ul>	<ul style="list-style-type: none"> <li>- ION-CROMATOGRAPH DIONEX ICS 1500 - anions, cations</li> <li>- Multi N/C Analytic Jena (total carbon analyzer and organic carbon)</li> <li>- Spectrometer ATI UNICAM UV-VIS</li> <li>- Mass Spectrometer with inductively coupled plasma ICPMS Nexlon 350x equipped with hydrides generator system and autosampler system with autodiluter</li> </ul>
D.	HYDROMORPHOLOGY	<ul style="list-style-type: none"> <li>- Portable Turbidimeter type VELP SCIENTIFICA</li> <li>- mini ADP SONTEK</li> <li>- Monitoring systems for turbidity and level</li> <li>- Monitoring systems for flow - velocities</li> <li>- Portable Turbidimeter HANNA Instruments</li> <li>- ADCP SONTEK River Surveyor R9</li> <li>- Multiparameter YSI for turbidity and level measurements</li> <li>- Bathimetric System 3D - Kongberg GeoSwath Plus Compact, 250 kHz</li> <li>- Acoustic Doppler Current Profiler (ADCP) - Teledyne RD Instruments RiverRay</li> <li>- ROV (Remote Operate Vehicle) - ROVBUILDER Mini 600</li> <li>- GPS</li> </ul>	<ul style="list-style-type: none"> <li>- Turbidimeter HACH RATIO/RX</li> <li>- Device for water quality parameters measurements, type 1, Manta 2-Sub3.5+Amphibian 2</li> <li>- Device for water quality parameters measurements, type 2, Manta 2-Sub4.0+Amphibian 2</li> </ul>
E.	WATER QUALITY	<ul style="list-style-type: none"> <li>- Ruttner sampler</li> <li>- GPS</li> </ul>	<ul style="list-style-type: none"> <li>- Spectrometer with atomic absorbtion VARIAN</li> <li>- Spectrometer CARY BIO 300 U.V.-VIS</li> <li>- Spectrofotometer with atomic absorbtion - with flame, graphite oven, hydrides system with amalgamation and automatic system for solids CONTRAA</li> <li>- Automatic analyzer in continous segmented flux model SAN++</li> <li>- Mineralization system Speedwave Four with microwave</li> </ul>



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Objectives monitored		Sampling equipment	Laboratory equipments / ongoing activities
	SEDIMENTS	<ul style="list-style-type: none"> <li>- Petersen sampler</li> <li>- GPS</li> </ul>	<ul style="list-style-type: none"> <li>- Cryo - drying system ALPHA 2-4 LSCplus</li> <li>- Gas chromatograph coupled with mass spectrometer for dioxine screening, CPF, CPB and pesticides, with autosampler r-GC MS MS 15-02</li> <li>- Drying stove</li> <li>- Sieving system for sediment samples</li> <li>- Ethos - digester with microwave for sediments</li> <li>- GC-MS-VARIAN</li> <li>- Spectrometer with atomic absorption SOLAAR M5</li> <li>- Mineralization System Speedwave Four with microwave</li> </ul>
F.	AQUATIC FLORA	<ul style="list-style-type: none"> <li>- planktonic nets</li> <li>- Patalas sampler</li> <li>- dredges 20cmx50 cm</li> <li>- Square wooden frame, with surface of 1m<sup>2</sup></li> <li>- GPS</li> </ul>	<ul style="list-style-type: none"> <li>- reverse microscope ZEISS</li> <li>- OPTIKA B-600T microscope</li> <li>- KRUSS microscope</li> <li>- Canon A570 IS camera for microscope</li> </ul>
	AQUATIC FAUNA	<ul style="list-style-type: none"> <li>- zooplanktonic nets</li> <li>- zoobenthic nets</li> <li>- Petersen sampler</li> <li>- benthos grabbing dredges</li> <li>- benthos sampling probe</li> <li>- GPS</li> </ul>	<ul style="list-style-type: none"> <li>- Stereomicroscope Olympus</li> <li>- Binocular Zeiss</li> <li>- Microscope ZEISS</li> <li>- Canon A570 IS camera for microscope</li> <li>- magnifying glass</li> </ul>
	F.is. STURGEONS AND BARBELL	<ul style="list-style-type: none"> <li>- Fixed monitoring system DKTB</li> <li>- Floating monitoring system type DKMR-01T</li> <li>- Complex monitoring, alarming and control system type DK-PRB-01U</li> <li>- Monitoring system with ultrasonic transmitter type 40</li> <li>- Monitoring system with ultrasonic transmitter type 60</li> <li>- Mobile receiver for sturgeons' telemetry Vemco VR 100</li> <li>- GPS</li> </ul>	<ul style="list-style-type: none"> <li>- Reception station of WR2W</li> <li>- VR100 mobile receptor</li> <li>- Multiparameter YSI</li> <li>- Endoscope for sturgeon gender determining WELLD WED 3000V</li> <li>- Radar Lowrance Elite 9 CHIRP - 4 pieces</li> </ul>
	F.i. OTHER FISH SPECIES	<ul style="list-style-type: none"> <li>- High power electrical fishing device Hans Grassl EL 65 II GI</li> <li>- Low power electrical fishing device Hans Grassl EL 60 II HI</li> <li>- Ihtyometer</li> <li>- Electronic scale</li> <li>- GPS</li> <li>- binocular microscope</li> <li>- stereo microscope</li> </ul>	
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.	BUILDING SITE ACTIVITY	<ul style="list-style-type: none"> <li>- DESAGA pump</li> <li>- Autolaboratory</li> <li>- Sound Level Meter and Microphone, Brüel &amp; Kjær</li> <li>- dust sampler LECKEL</li> </ul>	

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

### 2.1.1.A. Air quality monitoring

The activities carried out during 01/31.03.2017 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 71
2.	Contribution to Interim Report 15

According to post-construction monitoring objectives, in March 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 01/31.03.2017 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 71
2.	Contribution to Interim Report 15

According to post-construction monitoring objectives, in March 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

In this period have not been made sampling for soil in 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 of high resolution;
- Flow and velocity measurements on the monitoring sections;
- Turbidity and level continuous measurements in the 5 automatic hydrometric stations have continued.

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.	Turbidity and level continuous measurements in the 5 automatic hydrometric stations

### 2.1.1.E. Water and sediments monitoring

The activities carried out during 01/31.03.2017, 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.	Organizing the sampling campaign 63 for water and sediment (table 1.2)
2.	Performing the sampling campaign for water on cross section, at various depths (sampling bulletins for water - Annex 6.2.4)
3.	Performing the sampling campaign for sediments (sampling bulletins for sediments - Annex 6.2.5)
4.	Physical-chemical analysis in field for water samples
5.	Physical-chemical analysis in laboratory for water and sediment samples

In this sampling campaign were collected water and sediment samples as presented in Table 2.1.1.E.2.

Table 2.1.1.E.2. Water and sediment samples

Type of Critical Point	Critical Point (CP)	Water samples	Sediments samples
Main	01	20	8

For each sampling point, have been determined geographical coordinates. Samples were coded and labeled according to the encoding instructions. Also, for each sample, a bulletin has been completed, see Annexes 6.2.4 and 6.2.5.

### 2.1.1.F. Aquatic flora and fauna monitoring

The activities carried out during this reporting period, regarding aquatic flora and fauna (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 aquatic macroinvertebrates samples (table 1.2)
2.	Conducting the sampling campaign for aquatic macroinvertebrates (sampling bulletins for aquatic flora and fauna sampling - Annex 6.2.6)
3.	Laboratory preparing and analysis for benthic macroinvertebrates samples

In this campaign, from CP 01 were collected *benthic macroinvertebrates* samples, as presented in Table 2.1.1.F.2.

Table 2.1.1.F.2. Benthic macroinvertebrates samples

Type of Critical Point	Critical Point (CP)	Section	Samples collected for laboratory 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 coded and labeled according to the encoding instructions. Also, for each sample, a bulletin has been completed, see Annex 6.2.6.

### 2.1.1.F.is. Sturgeons and barbell migration monitoring

In March, no scientific fishing activities have been carried out on sturgeon species due to a new blockage produced by ANPA, regarding the issue of the scientific fishing authorization.

Since the first detection began to appear on the monitoring systems, the research team has continuously monitored the migration of specimens tagged before 2017.

Between km 43 on Borcea branch and bottom sill area on Bala branch, the researchers monitored almost daily the sturgeons' behavior with VR100 mobile device. Main objectives were to determine the migratory behavior in detail and protect the sturgeons from the poaching actions that could led to their loss.



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In addition to mobile monitoring, measurements were made to determine bathymetry, velocities and water flow rates in certain key areas determined by the behavior of sturgeons (resting areas, possible breeding habitats, bottom sill area).

#### **2.1.1.F.i. Other fish species monitoring**

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

#### **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**

In March 2017 have not been made monitoring activities for avifauna.

#### **2.1.1.H. Natura 2000 sites monitoring**

In March 2017 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**

According to post-construction monitoring objectives are not necessary monitoring activities for the construction site.

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

##### **2.1.2.A. Air quality monitoring**

The activities carried out during 01/31.03.2017 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 March 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 March 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

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

### 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 of high resolution;
- Flow and velocity measurements on the monitoring sections;
- Turbidity and level continuous measurements in the 2 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 2 automatic hydrometric stations

In March 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 1/31 March 2017, regarding water and sediment quality monitoring, reported to this critical point are those presented in Table 2.1.1.E.1.

In this campaign water and sediment samples were collected as presented in Table 2.1.2.E.1.

Table 2.1.2.E.1. Water and sediment samples

Type of Critical Point	Critical Point (CP)	Water samples	Sediments samples
Main	02	15	6

For each sample was completed a bulletin, see Annex 6.2.4 and 6.2.5.



### 2.1.2.F. Aquatic flora and fauna monitoring

Activities performed during this reporting period, regarding aquatic flora and fauna (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 aquatic macroinvertebrates samples (table 1.2)
2.	Conducting the sampling campaign for aquatic macroinvertebrates (sampling bulletins for aquatic flora and fauna sampling - Annex 6.2.6)
3.	Laboratory preparing and analysis for benthic macroinvertebrates samples

In this campaign from CP 02 were collected benthic macroinvertebrates samples, as presented in Table 2.1.2.F.2.

Table 2.1.2.F.2. Benthic macroinvertebrates samples

Type of Critical Point	Critical Point (CP)	Section	Samples collected for laboratory analysis	
			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 coded and labeled according to the encoding instructions. Also, for each sample, a bulletin has been completed, see Annex 6.2.6.

### 2.1.2.F.is. Sturgeons and barbell migration monitoring

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

### 2.1.2.F.i. Other fish species monitoring

In March 2017 are not provided any monitoring activities for other fish species.

### 2.1.2.G. Terrestrial flora and fauna monitoring

#### 2.1.2.G.1 Terrestrial flora

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

#### 2.1.2.G.2 Terrestrial fauna/ Avifauna

In March 2017 have not been made monitoring activities for avifauna.



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### **2.1.2.H. Natura 2000 sites monitoring**

In March 2017 have not been made monitoring activities for Natura 2000 sites.

### **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 26<sup>th</sup>, 2015.

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

#### **2.1.3.A. Air quality monitoring**

The activities carried out during 01/31.03.2017, regarding air quality monitoring, in this critical point are those presented in Table 2.1.1.A.1.

For critical point CP 10, in March 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 March 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**

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

#### **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 1/31 March 2017 related to water and sediments quality in this critical point are those presented in Table 2.1.1.E.1.

In this campaign were collected water and sediment samples as presented in Table 2.1.3.E.1.

Table 2.1.3.E.1. Water and sediment samples

Type of Critical Point	Critical Point (CP)	Water samples	Sediments samples
Main	10	15	6

For each sample, a bulletin was completed, see Annex 6.2.4 and Annex 6.2.5.

### 2.1.3.F. Aquatic flora and fauna monitoring

The activities carried out during 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 aquatic macroinvertebrates samples (table 1.2)
2.	Conducting the sampling campaign for aquatic macroinvertebrates (sampling bulletins for aquatic flora and fauna sampling - Annex 6.2.6)
3.	Laboratory preparing and analysis for benthic macroinvertebrates samples

In this campaign, from CP 10 were collected *benthic macroinvertebrates* samples, as presented in Table 2.1.3.F.2.

Table 2.1.3.F.2. Benthic macroinvertebrates samples

Type of Critical Point	Critical Point (CP)	Section	Samples collected for laboratory analysis	
			Left bank	Right bank
Main	10	1	1	1
		2	1	1



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Type of Critical Point	Critical Point (CP)	Section	Samples collected for laboratory analysis	
			Left bank	Right bank
		3	1	1
TOTAL			6	

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

### 2.1.3.F.is. Sturgeons and barbell migration monitoring

In March, 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 March 2017 are not provided any monitoring activities for other fish species.

### 2.1.3.G. Terrestrial flora and fauna monitoring

#### 2.1.3.G.1 Terrestrial flora

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

#### 2.1.3.G.2 Terrestrial fauna/ Avifauna

In March 2017 have not been made monitoring activities for avifauna.

### 2.1.3.H. Natura 2000 sites monitoring

In March 2017 have not been made monitoring activities for Natura 2000 sites.

### 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 1<sup>st</sup>, 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 01/31.03.2017, related to air quality monitoring, reported for this 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.	Organizing the measurements campaign (table 1.2)
2.	Performing sampling campaign for air (air sampling bulletins - Annex 6.2.1)
3.	Contribution to Monthly Report 71
4.	Contribution to Interim Report 15

In Table 2.1.4.1.A.2 is presented the number of air samples collected/ measurements “in situ” made during 01-31 March 2017.

Table 2.1.4.1.A.2. Air samples repartition

Type of Critical Point	Critical Point (CP)	Samples collected for laboratory analysis	Number of “in situ” measurements
Secondary	03 A and 03 B	4	4

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

#### 2.1.4.1.B. Noise level monitoring

The activities carried out during 01/31.03.2017, related to noise level monitoring, in this 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.	Measurements campaign for noise level in zero naval traffic/ naval traffic (measurements bulletins for noise level - Annex 6.2.2)
2.	Primary processing for data obtained from measurements
	Contribution to Monthly Report 71
	Contribution to Interim Report 15

In this monitoring campaign for noise level, conducted during 01/31.03.2017, have been

made measurements as Table 2.1.4.1.B.2.

**Table 2.1.4.1.B.2. Noise level monitoring**

Type of Critical Point	Critical Point (CP)	No. of measurements	
		zero naval traffic	intense naval traffic
Secondary	03 A	2	0
	03 B	2	0

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

### 2.1.4.1.C. Soil quality monitoring

The activities carried out during 01/31.03.2017, related to soil quality monitoring, in this critical point are summarized in Table 2.1.4.1.C.1.

**Table 2.1.4.1.C.1. Specific objective: soil monitoring**

No.	Activities
1.	Organizing campaign 25 for soil sampling (table 1.2)
2.	Campaign 25 for soil sampling (soil sampling bulletins - Annex 6.2.3)
3.	Observations in field - presence/absence lumbricides
4.	Performing laboratory analysis (preliminary determination) for soil physical-chemical characterization

Number of soil samples collected from CP03 (A and B) is presented Table 2.1.4.1.C.2.

**Table 2.1.4.1.C.2. Soil samples**

Type of Critical Point	Critical Point (CP)	Samples collected for laboratory analysis	
		depth 5 cm	depth 30 cm
Secondary	CP 03A	2	2
Secondary	CP 03B	2	2

For each sampling point, have been determined geographical coordinates. Samples were coded and labeled according to the encoding instructions. Also, for each sample, a bulletin has been completed, see Annex 6.2.3.

### 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

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

In this campaign, water and sediments samples were collected as Table 2.1.4.1.E.1.

Table 2.1.4.1.E.1. Water and sediment samples

Type of Critical Point	Critical Point (CP)	Water samples	Sediments samples
Secondary	03A	10	4
Secondary	03B	10	4

For each sampling point, have been determined geographical coordinates. Samples were coded and labeled according to the encoding instructions. Also, for each sample, a bulletin has been completed (see Annexes 6.2.4 and 6.2.5).

### 2.1.4.1.F. Aquatic flora and fauna monitoring

The activities carried out during 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 campaigns for phytoplankton, aquatic macrophytes and macroinvertebrates (table 1.2)
2.	Conducting the sampling campaigns for phytoplankton, aquatic macrophytes and macroinvertebrates (sampling bulletins for aquatic flora and fauna - Annex 6.2.6)
3.	Preparation and laboratory analysis for phytoplankton and benthic macroinvertebrates samples

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	Proba Medie
Secondary	03A	1	1	1	1	1	1	1	1
	03B	1	1	1	1	1	1	1	1
TOTAL		6				6			

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



From CP 03 were collected *macrophytes* samples, as presented in Table 2.1.4.1.F.3.

Table 2.1.4.1.F.3. Macrophytes samples

Type of Critical Point	Critical Point (CP)		Qualitative and quantitative 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 coded and labeled according to the encoding instructions. Also, for each sample, a bulletin has been completed, see Annex 6.2.6.

In Table 2.1.4.1.F.4. are presented *benthic macroinvertebrates samples* collected from CP 03.

Table 2.1.4.1.F.4 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 coded and labeled according to the encoding instructions. Also, 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 March sturgeons' migration monitoring has been done 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 March are not provided monitoring activities for fish species, other than sturgeons.

#### 2.1.4.1.G. Terrestrial flora and fauna monitoring

##### 2.1.4.1.G.1 Terrestrial flora

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





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#### 2.1.4.1.G.2 Terrestrial fauna / Avifauna

In March 2017 have not been made monitoring activities for avifauna.

#### 2.1.4.1.H. Natura 2000 sites monitoring

In March 2017 have not been made monitoring activities for Natura 2000 sites.

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

Because the hydrotechnical works have not started, was not necessary the monitoring of construction site activity.

#### 2.1.4.2. Monitoring in CP04 /Ceacâru/Fermecatu

##### 2.1.4.2.A. Air quality monitoring

The activities carried out during 01/31.03.2017, regarding air quality monitoring, in this secondary critical points are those presented in Table 2.1.4.1.A.1.

In Table 2.1.4.2.A.1. is presented the number of air samples collected/measurements “in situ” made during 01-31 March 2017.

Table 2.1.4.2.A.1. Air samples repartition

Type of Critical Point	Critical Point (CP)	Samples collected for laboratory analysis	Number of “in situ” measurements
Secondary	04 A and 04 B	4	4

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

##### 2.1.4.2.B. Noise level monitoring

The activities carried out during 01/31.03.2017, regarding noise level monitoring, in this secondary critical points are those presented in Table 2.1.4.1.B.1.

In this campaign for noise level monitoring, conducted during 01/31.03.2017, have been made measurements as presented in Table 2.1.4.2.B.1.

Table 2.1.4.2.B.1. Noise level monitoring

Type of Critical Point	Critical Point (CP)	No. of measurements	
		zero naval traffic	intense naval traffic
Secondary	04 A	2	0
	04 B	2	0

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

#### 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 2.1.4.1.C.1.

Number of soil samples collected from CP04 (A and B) is presented in Table 2.1.4.2.C.1.

Table 2.1.4.2.C.1. Soil samples

Type of Critical Point	Critical Point (CP)	Samples collected for laboratory analysis	
		depth 5 cm	depth 30 cm
Secondary	CP 04A	2	2
Secondary	CP 04B	2	2

For each sampling point, have been determined geographical coordinates. Samples were coded and labeled according to the encoding instructions. Also, for each sample, a bulletin has been completed, see Annex 6.2.3.

#### 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

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

In this campaign for water and sediments, samples were collected as presented in Table 2.1.4.2.E.1.

Table 2.1.4.2.E.1. Water and sediment samples

Type of Critical Point	Critical Point (CP)	Water samples	Sediments samples
Secondary	04A	10	4
Secondary	04B	10	4

For each sampling point, have been determined geographical coordinates. Samples were coded and labeled according to the encoding instructions. Also, for each sample, a bulletin has been completed (Annex 6.2.4 and 6.2.5).

## 2.1.4.2.F. Aquatic flora and fauna monitoring

The activities carried out during 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 campaigns for phytoplankton, aquatic macrophytes and macroinvertebrates (table 1.2)
2.	Conducting the sampling campaigns for phytoplankton, aquatic macrophytes and macroinvertebrates (sampling bulletins for aquatic flora and fauna - Annex 6.2.6)
3.	Preparation and laboratory analysis for phytoplankton and benthic macroinvertebrates samples

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 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	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 coded and labeled according to the encoding instructions. Also, for each sample, a bulletin has been completed, see Annex 6.2.6.

From CP 04 were collected *macrophytes*, as presented in Table 2.1.4.2.F.3.

Table 2.1.4.2.F.3. Macrophytes samples

Type of Critical Point	Critical Point (CP)		Qualitative and quantitative analysis	
			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 coded and labeled according to the encoding instructions. Also, for each sample, a bulletin has been completed, see Annex 6.2.6.

In Table 2.1.4.2.F.4 are presented *benthic macroinvertebrates* samples collected from CP 04.

Table 2.1.4.2.F.4. Benthic macroinvertebrates samples

Type of Critical Point	Critical Point (CP)		Samples collected for laboratory analysis	
			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 coded and labeled according to the encoding instructions. Also, for each sample, a bulletin has been completed, see Annex 6.2.6.

#### 2.1.4.2.F.is. Sturgeons and barbell migration monitoring

In March 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 March 2017 are not provided any monitoring activities for other fish species.

#### 2.1.4.2.G. Terrestrial flora and fauna monitoring

##### 2.1.4.2.G.1 Terrestrial flora

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

##### 2.1.4.2.G.2 Terrestrial fauna/Avifauna

In March 2017 have not been made monitoring activities for avifauna.

#### 2.1.4.2.H. Natura 2000 monitoring sites

In March 2017 have not been made monitoring activities for Natura 2000 sites.

#### 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 01/31.03.2017, regarding air quality monitoring, for this secondary critical point are those presented in Table 2.1.4.1.A.1.

In Table 2.1.4.3.A.1. is presented the number of air samples collected/measurements “in situ” made during 01-31 March 2017.

Table 2.1.4.3.A.1. Air samples repartition

Type of Critical Point	Critical Point (CP)	Samples collected for laboratory analysis	Number of “in situ” measurements
Secondary	07	2	2

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

#### 2.1.4.3.B. Noise level monitoring

The activities carried out during 01/31.03.2017, regarding noise level monitoring, in this secondary critical point are those presented in Table 2.1.4.1.B.1.

In this monitoring campaign for noise level, conducted during 01/31.03.2017, measurements were made according to Table 2.1.4.3.B.1.

Table 2.1.4.3.B.1. Noise level monitoring

Type of Critical Point	Critical Point (CP)	No. of measurements	
		zero naval traffic	intense naval traffic
Secondary	07	2	0

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

#### 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.

Number of soil samples collected from CP 07 is presented in Table 2.1.4.3.C.1.

Table 2.1.4.3.C.1. Soil samples

Type of Critical Point	Critical Point (CP)	Samples collected for laboratory analysis	
		depth 5 cm	depth 30 cm
Secondary	CP 07	2	2

For each sampling point, have been determined geographical coordinates. Samples were coded and labeled according to the encoding instructions. Also, for each sample, a bulletin has been completed, see Annex 6.2.3.

#### 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

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

In this campaign for water and sediments, samples were collected as presented in Table 2.1.4.2.E.1.

Table 2.1.4.2.E.1. Water and sediment samples

Type of Critical Point	Critical Point (CP)	Water samples	Sediments samples
Secondary	07	10	4

For each sampling point, have been determined geographical coordinates. Samples were coded and labeled according to the encoding instructions. Also, for each sample, a bulletin has been completed (Annex 6.2.4 and 6.2.5).

#### 2.1.4.3.F. Aquatic flora and fauna monitoring

The activities carried out during reporting period, regarding aquatic fauna and flora (except for ichthyofauna) are summarized in Table 2.1.4.3.F.1.

Tabel. 2.1.4.3.F.1. Specific objective: aquatic flora and fauna monitoring

No.	Activities
1.	Organizing the sampling campaigns for phytoplankton, aquatic macrophytes and macroinvertebrates (table 1.2)
2.	Conducting the sampling campaigns for phytoplankton, aquatic macrophytes and macroinvertebrates (sampling bulletins for aquatic flora and fauna - Annex 6.2.6)
3.	Preparation and laboratory analysis for phytoplankton and benthic macroinvertebrates samples

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	Average sample
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 coded and labeled according to the encoding instructions. Also, for each sample, a bulletin has been completed, see Annex 6.2.6.

In Table 2.1.4.3.F.3 is presented the number of samples collected in this campaign, from CP 07 for *macrophytes* analysis.

Table 2.1.4.3.F.3. Macrophytes samples

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

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

In Table 2.1.4.3.F.4. are presented *benthic macroinvertebrates* samples collected from CP 07.

Table 2.1.4.3.F.4. Benthic macroinvertebrates samples

Type of Critical Point	Critical Point (CP)		Samples collected for laboratory analysis	
			Left bank	Right bank
Secondary	07	upstream	1	1
		downstream	1	1
TOTAL			4	

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





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#### **2.1.4.3.F.is. Sturgeons and barbell migration monitoring**

In March 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 March are not provided any 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 have not been made activities for terrestrial flora monitoring.

##### **2.1.4.3.G.2 Terrestrial fauna / Avifauna**

In March 2017 have not been made monitoring activities for avifauna.

#### **2.1.4.3.H. Natura 2000 sites monitoring**

In March 2017 have not been made monitoring activities for Natura 2000 sites.

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

Because the hydrotechnical works not started, was not necessary the construction site monitoring.

### **2.2. Stage of 3D numerical modeling**

In March 2017, INCDPM specialists have performed, according to Specifications, bathymetric data aquisition in main critical points CP01, CP02 and CP10 areas. Thus, for this activity have been performed:

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





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### 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	8
3.	Chemist 2	Borș Adriana	0
4.	Ichthyologist 1	Cristea Victor	7
5.	Ichthyologist 2	Falka Istvan	0
6.	Hydrology	Poteraș George	8
7.	Hydraulic sedimentology	Ungureanu Gh Viorel	0
8.	Phytoplankton and aquatic macrophytes	Marinescu Florica	12
9.	Zooplankton	Adina Popescu	0
10.	Terrestrial invertebrates	Șerban Cecilia	3
11.	Aquatic macroinvertebrates	Florea Luiza	5
12.	Terrestrial flora and vegetation	Frink Jozsef Pal	0
13.	Ornithologist 1	Jozsef Szabo	0
14.	Ecologist 1	Ambrus Laszlo	2
15.	Ecologist 2	Zaharia Tania	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).



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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 01-30 April 2017 are synthetically presented in the table 3.4.

Table 3.4. Activities for the period of 01.04-30.04.2017

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



## 4. TIME SCHEDULE AND BUDGET PROJECT

### 4.1. Time schedule for project implementation

ID	Task Name	Start	Finish												
				Mar '17						Apr '17					May '17
				27	06	13	20	27		03	10	17	24		01
1	Air monitoring: Data and measurements processing and assessing, related to air quality, in main critical points CP 01, CP 02 and CP 10. Contribution to Interim Report RI15	Wed 01.03.17	Fri 31.03.17												
2	71st Month	Wed 01.03.17	Fri 31.03.17												
3	Air monitoring: Conducting the sampling and measurements campaign for air quality, in secondary critical points CP 03A/03B/04A/04B/07.	Wed 01.03.17	Fri 31.03.17												
4	71st Month	Wed 01.03.17	Fri 31.03.17												
5	Air monitoring: Contribution to Interim Report RI15	Mon 03.04.17	Fri 28.04.17												
6	72nd Month	Mon 03.04.17	Fri 28.04.17												
7	Air monitoring: Data and measurements processing and assessing, related to air quality, in secondary critical points CP	Mon 03.04.17	Fri 28.04.17												
8	72nd Month	Mon 03.04.17	Fri 28.04.17												
9	Noise monitoring: Contribution to Interim Report RI15	Wed 01.03.17	Fri 28.04.17												
10	71st Month	Wed 01.03.17	Fri 31.03.17												
11	72nd Month	Mon 03.04.17	Fri 28.04.17												
12	Noise monitoring (zero and intense traffic): Conducting the campaign on noise monitoring in secondary critical points CP	Wed 01.03.17	Fri 31.03.17												
13	71st Month	Wed 01.03.17	Fri 31.03.17												
14	Water quality monitoring - CP 01, CP 02, CP 10, CP03 (A+B), CP04 (A+B), CP07 - Water (physical-chemical analysis)	Wed 01.03.17	Fri 31.03.17												
15	71st Month	Wed 01.03.17	Fri 31.03.17												
16	Water quality monitoring - Water ( physical-chemical analysis) - laboratory analysis C63 (CP 01, CP 02, CP 10, CP03, CP04, CP07)	Mon 03.04.17	Fri 28.04.17												
17	72nd Month	Mon 03.04.17	Fri 28.04.17												
18	Water quality monitoring - CP 01, CP 02, CP 10, CP03 (A+B), CP04 (A+B), CP07 - Sediments (heavy metals, organic micropollutants)	Wed 01.03.17	Fri 31.03.17												
19	71st Month	Wed 01.03.17	Fri 31.03.17												
20	Water quality monitoring - Sediments (heavy metals, organic micropollutants) - Physical-chemical laboratory analysis C63 (CP 01, CP 02, CP 10, CP03, CP04, CP07)	Mon 03.04.17	Fri 28.04.17												
21	72nd Month	Mon 03.04.17	Fri 28.04.17												
22	Soil monitoring - CP03 (A+B), CP04 (A+B), CP07 - lumbricides presence, abundance	Wed 01.03.17	Fri 31.03.17												
23	71st Month	Wed 01.03.17	Fri 31.03.17												
24	Soil monitoring - CP03 (A+B), CP04 (A+B), CP07 - mineral salts, humic acids, organic matter, physical-chemical characteristics	Wed 01.03.17	Fri 31.03.17												
25	71st Month	Wed 01.03.17	Fri 31.03.17												



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ID	Task Name	Start	Finish												
				Mar '17			Apr '17			May '17					
				27	06	13	20	27	03	10	17	24	01		
26	Soil monitoring - Physical-chemical laboratory analysis C25 (CP03, CP04, CP07)	Mon 03.04.17	Fri 28.04.17												
27	72nd Month	Mon 03.04.17	Fri 28.04.17												
28	Hydromorphological monitoring in CP 01/CP 02/CP 10 - Single-beam measurements - sections profiling	Wed 01.03.17	Fri 28.04.17												
29	71st Month	Wed 01.03.17	Fri 31.03.17												
30	72nd Month	Mon 03.04.17	Fri 28.04.17												
31	Hydromorphological monitoring in CP 01/CP 02/CP 10 - Flow rate monitoring (volume, velocity, level)	Wed 01.03.17	Fri 28.04.17												
32	71st Month	Wed 01.03.17	Fri 31.03.17												
33	72nd Month	Mon 03.04.17	Fri 28.04.17												
34	Hydromorphological monitoring in CP 01/CP 02/CP 10 - level and turbidity measurements in hydrometric automatic station belonging to	Wed 01.03.17	Fri 28.04.17												
35	71st Month	Wed 01.03.17	Fri 31.03.17												
36	72nd Month	Mon 03.04.17	Fri 28.04.17												
37	Ichtyofauna biodiversity monitoring CP 01 - Bathymetric measurements in bottom sill area on Bala branch and adjacent area during sturgeons migration monitoring	Wed 01.03.17	Fri 31.03.17												
38	71st Month	Wed 01.03.17	Fri 31.03.17												
39	Ichtyofauna biodiversity monitoring CP 01 - Synthesis report on the results from sturgeons monitoring during April 2011 - October 2016	Wed 01.03.17	Fri 31.03.17												
40	71st Month	Wed 01.03.17	Fri 31.03.17												
41	Ichtyofauna biodiversity monitoring CP 01/02/10/03/04/CP07 - monitoring of trails and migration periods for the sturgeon specimens ultrasonic tagged	Wed 01.03.17	Fri 28.04.17												
42	71st Month	Wed 01.03.17	Fri 31.03.17												
43	72nd Month	Mon 03.04.17	Fri 28.04.17												
44	Ichtyofauna biodiversity monitoring CP 01/02 - Data downloading from the monitoring systems	Wed 01.03.17	Fri 28.04.17												
45	71st Month	Wed 01.03.17	Fri 31.03.17												
46	72nd Month	Mon 03.04.17	Fri 28.04.17												
47	Ichtyofauna biodiversity monitoring CP 01 - Active tracking with VR100 device for sturgeons specimens in Bala - Borcea area	Wed 01.03.17	Fri 28.04.17												
48	71st Month	Wed 01.03.17	Fri 31.03.17												
49	72nd Month	Mon 03.04.17	Fri 28.04.17												
50	Aquatic flora monitoring - CP 03A/03B/04A/04B/07 - Phytoplankton - sampling, composition, abundance, biomass	Wed 01.03.17	Fri 31.03.17												



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ID	Task Name	Start	Finish												
				Mar '17						Apr '17					May '17
51	71st Month	Wed 01.03.17	Fri 31.03.17	27	06	13	20	27		03	10	17	24		01
52	Aquatic flora monitoring - CP 03A/03B/04A/04B/07 - Macrophytes - sampling, composition, abundance, biomass	Wed 01.03.17	Fri 31.03.17												
53	71st Month	Wed 01.03.17	Fri 31.03.17												
54	Aquatic fauna monitoring CP 01/02/10/03A/03B/04A/04B/07 - aquatic macroinvertebrates - sampling, composition, abundance, biomass, saprobic index	Wed 01.03.17	Fri 31.03.17												
55	71st Month	Wed 01.03.17	Fri 31.03.17												
56	Monthly reports	Wed 01.03.17	Fri 28.04.17												
57	71st Month	Wed 01.03.17	Fri 31.03.17												
58	72nd Month	Mon 03.04.17	Fri 28.04.17												



## 4.2. Budget and expenses incurred during the reporting period

*Justifying calculation for 01 - 31 March 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	8	200	1.600,00 EUR
3	Chemist 2	0	200	0,00 EUR
4	Ichthyologist 1	7	330	2.310,00 EUR
5	Ichthyologist 2	0	200	0,00 EUR
6	Hydrology	8	200	1.600,00 EUR
7	Hydraulic- sedimentology	0	200	0,00 EUR
8	Aquatic phytoplankton and macrophytes	12	130	1.560,00 EUR
9	Zooplankton	0	130	0,00 EUR
10	Terrestrial invertebrates	3	125	375,00 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				11.200,00 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			0,00 EUR
SUBTOTAL EXPENSES with JUSTIFICATION				0,00 EUR
III. MATHEMETICAL MODELING				
1	Software acquisiton+hardware+ necessary licenses			0,00 EUR
2	Acquisition of bathymetric data, necessary for the mathematical modeling			31.778,96 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				31.778,96 EUR
TOTAL without V.A.T.				42.978,96 EUR

### 4.3. Budget and expenses for the next period

*Estimated calculation for 01 - 30 April 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	8	200	1.600,00 EUR
3	Chemist 2	8	200	1.600,00 EUR
4	Ichthyologist 1	7	330	2.310,00 EUR
5	Ichthyologist 2	2	200	400,00 EUR
6	Hydrology	8	200	1.600,00 EUR
7	Hydraulic- sedimentology	20	200	4.000,00 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	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	6	330	1.980,00 EUR
SUBTOTAL EXPERTS' FEES				15.595,00 EUR
II EXPENSES with JUSTIFICATION				
1	Ichthyology- telemetry (sturgeons and barbel transmitters, batteries, expensis on stugeons' capturing)			10.000,00 EUR
2	Abiotic and biotic data for the establishment of the framework			
3	Analysis			15.000,00 EUR
SUBTOTAL EXPENSES with JUSTIFICATION				25.000,00 EUR
III. MATHEMTICAL MODELING				
1	Software 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.				90.595,00 EUR

## 5. CONCLUSIONS, RECOMMENDATIONS, WARNINGS

- 5.1 This Monthly Report reflects monitoring activities from March 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 March 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 average flow rates compared to historical data for this period of the year.



## 6. ANNEXES

### 6.1 Relevant correspondence

### 6.2 Recording bulletins for samples collecting/measuring

- 6.2.1: Recording bulletins for AIR
- 6.2.2: Recording bulletins for NOISE
- 6.2.3: Recording bulletins for SOIL
- 6.2.4: Recording bulletins for WATER
- 6.2.5: Recording bulletins for SEDIMENTS
- 6.2.6: Recording bulletins for AQUATIC FLORA and FAUNA

### 6.3 Experts' activity reports

### 6.4 Images during of activities

### 6.5 Hydromorphology monitoring

### 6.6 Reports for analytical results for 1 - 28 February 2017

- 6.4.1: Reports for analytical results for AIR