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Naționala Agenția de Protecția Mediului
Autoritatea Națională de Protecția Mediului



Ministerul Mediului și Climei
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 77: 1 - 30 September 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. 77

01 - 30 September 2017



FINAL VERSION



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1. INTRODUCTION

1.1. Brief presentation of monitored objectives

I. *This report presents the monitoring objectives for the period 01-30 September 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 processing.

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



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1.2. Overview

The elements related to the sampling periods for the objectives monitored in September 2017 for post-construction period are presented in Table 1.2.

Table 1.2. Objectives monitored during the period of 01.09-30.09.2017

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	8, 19.09.2017-	C68	NO	NO	NO	YES	YES	YES	YES	YES
B.	NOISE	8, 19.09.2017-	C71	NO	NO	NO	YES	YES	YES	YES	YES
C.	SOIL	05.09.2017	C27	NO	NO	NO	YES	YES	YES	YES	YES
D.	HYDROMORPHOLOGY	-	-	NO	NO	NO	NO	NO	NO	NO	NO
E.	WATER QUALITY	05.09.2017	C65	YES	YES	NO	YES	YES	YES	YES	YES
	SEDIMENTS	05.09.2017	C65	YES	YES	NO	YES	YES	YES	YES	YES
F.	AQUATIC FLORA	05.09.2017, 07-08.09.2017	C28-phytoplankton C27 - macrophytes	NO	NO	NO	YES	YES	YES	YES	YES
	AQUATIC FAUNA	07-08.09.2017	C28	YES	YES	NO	YES	YES	YES	YES	YES
	F.is. STURGEONS	02, 10, 12, 21, 24.09.2017	C35	YES	YES	NO	YES	YES	YES	YES	YES
	F.is. BARBELL	-	-	NO	NO	NO	NO	NO	NO	NO	NO
G.	TERRESTRIAL FLORA	-	-	NO	NO	NO	NO	NO	NO	NO	NO
	TERRESTRIAL FAUNA/ AVIFAUNĂ	04-08, 11-15, 18-20.09.2017	Autumn migration	YES	YES	NO	YES	YES	YES	YES	YES
H.	NATURA 2000 SITES	11-15.09.2017	Avifauna monitoring	YES	YES	NO	YES	YES	YES	YES	YES
I.	BUILDING SITE	-	-	NO	NO	NO	NO	NO	NO	NO	NO

NOTE:

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



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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"> - LECKEL dust sampler - Auto-laboratory - Desaga pump - GPS - Autolaboratory for air monitoring 	<ul style="list-style-type: none"> - Analytical balance KERN 770-14 - Atomic absorption spectrometer with graphite furnace AAS - UNICAM 939
B.	NOISE	<ul style="list-style-type: none"> - Sound Level Meter and Microphone, Brüel & Kjær Denmark - GPS 	
C.	SOIL	<ul style="list-style-type: none"> - Burkle sampler - GPS 	<ul style="list-style-type: none"> - 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	<ul style="list-style-type: none"> - 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 	<ul style="list-style-type: none"> - 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
	WATER QUALITY	<ul style="list-style-type: none"> - Ruttner sampler - GPS 	<ul style="list-style-type: none"> - Spectrometer with atomic absorption VARIAN - Spectrometer CARY BIO 300 U.V.-VIS - Spectrofotometer with atomic absorption - with flame, graphite oven, hydrides system with amalgamation and automatic system for solids CONTRAA - Automatic analyzer in continuous segmented flux model SAN++ - Mineralization system Speedwave Four with microwave
E.	SEDIMENTS	<ul style="list-style-type: none"> - Petersen sampler - GPS 	<ul style="list-style-type: none"> - 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 absorption SOLAAR M5 - Mineralization System Speedwave Four with microwave



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Objectives monitored		Sampling equipment	Laboratory equipments / ongoing activities
F.	AQUATIC FLORA	<ul style="list-style-type: none"> - planktonic nets - Patalas sampler - dredges 20cmx50 cm - Square wooden frame, with surface of 1m² - GPS 	<ul style="list-style-type: none"> - reverse microscope ZEISS - OPTIKA B-600T microscope - KRUSS microscope - Canon A570 IS camera for microscope
	AQUATIC FAUNA	<ul style="list-style-type: none"> - zooplanktonic nets - zoobenthic nets - Petersen sampler - benthos grabbing dredges - benthos sampling probe - GPS 	<ul style="list-style-type: none"> - Stereomicroscope Olympus - Binocular Zeiss - Microscope ZEISS - Canon A570 IS camera for microscope - magnifying glass
	F.is. STURGEONS AND BARBELL	<ul style="list-style-type: none"> - 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 	<ul style="list-style-type: none"> - 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	<ul style="list-style-type: none"> - 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	<ul style="list-style-type: none"> - DESAGA pump - Autolaboratory - Sound Level Meter and Microphone, Brüel & Kjær - dust sampler LECKEL 	



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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 01/30.09.2017 related to air quality monitoring for each critical point are summarized 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 77
2.	Contribution to Interim Report 17

According to post-construction monitoring objectives, in September 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 was 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 01/30.09.2017 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 77
2.	Contribution to Interim Report 17

According to post-construction monitoring objectives, in September 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 was made the reception of the construction work) frequency is biannual (as Table 1.1).

2.1.1.C. Soil quality monitoring

No soil sampling have been made during this period 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:



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Overall 1 main activity was carried out, namely turbidity and level continuous measurements in the 4 automatic hydrometric stations.

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

No.	Activities
1.	Turbidity and level continuous measurements in the 4 automatic hydrometric stations

2.1.1.E. Water and sediments monitoring

The activities carried out during 01/30.09.2017, 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 campaign 65 for water and sediment sampling (Table 1.2)
2.	Performing the sampling campaign for water, on cross-sections 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 sediments 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 sediments samples

Type of critical point	Critical Point (CP)	Water samples	Sediment samples
Main	01	20	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 Annexes 6.2.4 și 6.2.5.

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.



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

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 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	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 6.2.6.

2.1.1.F.is. Sturgeons and barbell migration monitoring

In September were tagged 5 sturgeon specimens, as follows: 1 beluga, 1 diamond sturgeon and 3 starry sturgeons. Also, were recaptured 2 starry sturgeon specimens. Sturgeons were monitored with VR 100 and data were downloaded from the systems.

2.1.1.F.i. Other fish species monitoring

In September were processed the data obtained from scientific fishing in May and July and Interim Report 17 was drafted.

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.



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2.1.1.G.2 Terrestrial fauna/ Avifauna

The activities carried out during this reporting period, regarding avifauna monitoring, are summarized in Table 2.1.1.G.2.1.

Table 2.1.1.G.2.1 Specific objective: Avifauna monitoring

No.	Activities
1.	Activities in field: <ul style="list-style-type: none"> - Aquatic and migratory avifauna observations from the shore - Aquatic and migratory avifauna observations from the boat
2.	Analysing and processing the field data (Annex 6.8)

2.1.1.H. Natura 2000 sites monitoring

In this reporting period were monitored Natura 2000 sites in critical point area.

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.	Avifauna assessments in Natura 2000 sites in CP01 area: <ul style="list-style-type: none"> - ROSPA0039 “Dunăre Ostroave”; ROSCI0022 “Canaralele Dunării” Activities in field: <ul style="list-style-type: none"> - Aquatic and migratory avifauna observations from the boat - Aquatic and migratory avifauna observations from the shore
2.	Analysis and centralizing 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 01/30.09.2017 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 September 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 was made the reception of the construction work) frequency is biannual (as Table 1.1).



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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 September 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 was made the reception of the construction work) frequency is biannual (as Table 1.1).

2.1.2.C. Soil quality monitoring

During this period no soil samples have been collected.

2.1.2.D. Hydromorphological monitoring

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

Overall one main activity has been carried out, namely turbidity and level continuous measurements in the 3 automatic hydrometric stations.

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

No.	Activities
3.	Turbidity and level continuous measurements in the 3 automatic hydrometric stations

2.1.2.E. Water and sediments monitoring

Activities performed during 1/30 September 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 were collected water and sediment samples as presented in Table 2.1.2.E.1.

Table 2.1.2.E.1. Water and sediments samples

Type of critical point	Critical Point (CP)	Water samples	Sediment samples
Main	02	15	6

For each collected sample, a bulletin was completed according to Annex 6.2.4 and Annex 6.2.5.



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

Table 2.1.2.F.3. Benthic macroinvertebrates samples

Type of critical point	Critical Point (CP)	Section	Qualitative and quantitative 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 labeled according to the encoding and labeling instructions. For each sample, a bulletin has been completed, see Annex 6.2.6.

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.

2.1.2.F.i. Other fish species monitoring

In September were processed the data from scientific fishing in May and July and Interim Report 17 was drafted.

2.1.2.G. Terrestrial flora and fauna monitoring

2.1.2.G.1 Terrestrial flora

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



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2.1.2.G.2 Terrestrial fauna/ Avifauna

Activities performed in this reporting period, regarding avifauna monitoring, are summarized in Table 2.1.2.G.2.1.

Table 2.1.2.G.2.1 Specific objective: Avifauna monitoring

No.	Activities
1.	Field activities: <ul style="list-style-type: none"> - Observation for aquatic and migratory avifauna from the boat - Observation for aquatic and migratory avifauna from the shore
2.	Analysis and processing of the field data (Annex 6.8)

2.1.2.H. Natura 2000 sites monitoring

In this reporting period were monitored Natura 2000 sites, in critical point area and dobrogean lakes, due to islets importance in birds' autumn migration.

Activities performed in 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.	Avifauna assessments in Natura 2000 sites: <ul style="list-style-type: none"> - ROSPA0039 "Dunăre Ostroave" , ROSCI0022 "Canaralele Dunării" - in CP02 area - In PC02-04: <ul style="list-style-type: none"> o ROSCI0071 „Dumbrăveni - Valea Urluia - Lacul Vederoasa” - in Baciului lake and Balta Vederoasa areas o ROSPA0007 „Balta Vederoasa” - in Balta Vederoasa and Baciului lake areas o ROSCI0172 „Pădurea and Valea Canaraua Fetii - Iortmac” - in Dunăreni, Iortmac and Oltina lakes areas o ROSPA0054 „Lacul Dunăreni” in Dunăreni lake area o ROSPA0056 „Lacul Oltina” - in Oltina and Iortmac lakes areas Field activities: <ul style="list-style-type: none"> - Observation for aquatic and migratory avifauna from the boat - Observation for aquatic and migratory avifauna from the shore
2.	Analysis and processing for the field 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.



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

2.1.3.A. Air quality monitoring

The activities carried out during reporting period 01/30.09.2017 regarding air quality monitoring, in this critical point CP10 are summarized in Table 2.1.3.A.1.

Table 2.1.3.A.1. Specific objective: monitorizarea calității aerului

No.	Activities
1.	Contribution to Monthly Report 77
2.	Contribution to Interim Report 17

For critical point CP 10, in August 1st 2017, the 3-year post-construction monitoring period has ended, as such in September 2017 no air quality monitoring activities have been carried out.

2.1.3.B. Noise monitoring

The activities carried out during reporting period 01/30.09.2017, related to noise level monitoring, reported for this critical point are those presented in Table 2.1.3.B.1.

For main critical point CP 10, in August 1st 2017 has ended the 3 years period for post-construction monitoring, and as such in September 2017 no monitoring activities for noise level have been carried out.

2.1.3.C. Soil quality monitoring

In this critical point, are no longer any monitoring activities for soil quality, due to post-construction monitoring period has ended in August 1st 2017.

2.1.3.D. Hydrophological monitoring

For main critical point CP10, in August 1st 2017 the post-construction monitoring period has ended.

2.1.3.E. Water and sediments quality monitoring

In this critical point are no longer any monitoring activities for water and sediments quality, due to post-construction monitoring period has ended in August 1st 2017.

2.1.3.F. Aquatic flora and fauna monitoring

During the reporting period, no monitoring activities for aquatic flora and fauna have been made.



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2.1.3.F.is. Sturgeons and barbell migration monitoring

For main critical point CP10, in August 1st 2017 the post-construction monitoring period has ended.

2.1.3.F.i. Other fish species monitoring

In September were processed the data obtained from scientific fishing in May and July and Interim Report 17 was drafted.

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 this Critical Point no longer been conducted any monitoring activities for avifauna, due to the post-construction monitoring period ended in August 1st 2017.

2.1.3.H. Natura 2000 sites monitoring

In this Critical Point no longer been conducted any monitoring activities for Natura 2000 sites, due to the post-construction monitoring period ended in August 1st 2017.

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 01/30.09.2017, related to air quality monitoring, reported for this secondary critical points are those presented in Table 2.1.4.1.A.1.



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

No.	Activities
1.	Organizing the measurements campaign (Table 1.2)
2.	Conducting the sampling campaign for air (air sampling bulletins - Annex 6.2.1)
3.	Contribution to Monthly Report 77
4.	Contribution to Interim Report 17

In Table 2.1.4.1.A.2. is presented the number of air samples collected/measurements “in situ” made during 01-30 September 2017.

Table 2.1.4.A.2. Air Samples Repartition

Critical Point Type	Critical Point (CP)	Samples collected for laboratory analysis	Număr de măsurători “in situ”
Secondary	03 A and 03 B	4	4

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

2.1.4.1.B. Noise level monitoring

The activities carried out during 01/30.09.2017, 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 monitorizarea zgomotului

No.	Activities
1.	Measurements campaign for noise level in zero naval traffic/naval traffic (bulletins for noise level measurement - Annex 6.2.2)
2.	Primary processing for the data obtained after measurements
3.	Contribution to Monthly Report 77
4.	Contribution to Interim Report 17

In this monitoring campaign for noise level, during 01/30.09.2017, measurements were made as presented in Table 2.1.4.1.B.2, below.

Table 2.1.4.1.B.2. Noise level monitoring

Critical Point Type	Critical point	No. of measurements	
		Zero naval traffic	Intense naval traffic
Secondary	03 A	2	0
	03 B	2	0



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

2.1.4.1.C. Soil quality monitoring

The activities carried out during 01/30 September 2017 in the reporting period, 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 27 for soil sampling (Table 1.2)
2.	Campaign 27 for soil sampling (soil sampling bulletins - Annex 6.2.3)
3.	Field observation - presence/absence lumbricides
4.	Laboratory analysis (preliminary determinations) for soil physical-chemical characterization

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

Table 2.1.4.1.C.2. Soil samples

Critical Point Type	Critical Point	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 labeled according to the encoding and labeling instructions. 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

Activities performed during this reporting period, regarding water and sediment quality monitoring, in this Critical Point are those presented in Table nr. 2.1.1.E.1.

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



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Table 2.1.4.1.E.1. Water and sediments samples

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

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

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, aquatic macrophytes and macroinvertebrates (Table 1.2)
2.	Conducting the sampling campaign for phytoplankton, aquatic macrophytes and macroinvertebrates (sampling bulletins for aquatic flora and fauna - Annex 6.2.6)
3.	Laboratory preparing and 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

Critical Point Type	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 6.2.6.

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



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Table 2.1.4.1.F.3. Macrophytes samples

Critical Point Type	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 labeled according to the encoding and labeling instructions. 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.3. Benthic macroinvertebrates samples

Critical Point Type	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 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 September, 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 September were processed the data from scientific fishing in May and July, and Interim Report 17 was drafted.

2.1.4.1.G. Terrestrial flora and fauna monitoring

2.1.4.1.G.1 Terrestrial flora

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



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2.1.4.1.G.2 Terrestrial fauna / Avifauna

Activities performed during this reporting period, regarding avifauna monitoring, are summarized in Table 2.1.4.1.G.2.1.

Table 2.1.4.1.G.2.1 Specific objective: Avifauna monitoring

No.	Activities
1.	Activities in field: <ul style="list-style-type: none"> - Aquatic and migratory avifauna observations from the boat - Aquatic and migratory avifauna observations from the shore
2.	Analysis and processing the field data (Annex 6.8)

2.1.4.1.H. Natura 2000 sites monitoring

In this reporting period were monitored Natura 2000 sites in critical points and dobrogean lakes areas, due to the importance of islets in birds' autumn migration.

Activities performed during this reporting period, regarding Natura 2000 sites monitoring, are summarized in Table 2.1.4.1.H.1.

Table 2.1.4.1.H.1 Specific objective: Natura 2000 sites monitoring

No.	Activities
1.	Avifauna assessments in Natura 2000 sites: <ul style="list-style-type: none"> - ROSPA0039 "Dunăre Ostroave", ROSCI0022 "Canaralele Dunării" - in CP03 area - in PC02-04 area: <ul style="list-style-type: none"> o ROSCI0071 „Dumbrăveni - Valea Urluia - Lacul Vederoasa” - in Baciului lake and Balta Vederoasa areas o ROSPA0007 „Balta Vederoasa” - in Balta Vederoasa and Baciului lake areas o ROSCI0172 „Pădurea and Valea Canaraua Fetii - Iortmac” - in Dunăreni, Iortmac and Oltina lakes areas o ROSPA0054 „Lacul Dunăreni” in Dunăreni lake area o ROSPA0056 „Lacul Oltina” - in Oltina and Iortmac lakes areas Field activities: <ul style="list-style-type: none"> - Observation for aquatic and migratory avifauna from the boat - Observation for aquatic and migratory avifauna from the shore
2.	Analysis and centralizing 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 /Ceacăru/Fermecatu

2.1.4.2.A. Air quality monitoring

Activities conducted during 01/30.09.2017 regarding air quality monitoring, related to 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/measurements “in situ” made during 01-30 September 2017.

Table 2.1.4.2.A.1. Air Samples Repartition

Critical Point Type	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 labeled according to the encoding and labeling instructions. For each sample/measurement, a bulletin has been completed, see Annex 6.2.1.

2.1.4.2.B. Noise level monitoring

Activities conducted during 01/30.09.2017 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, during 01/30.09.2017, measurements were made as presented in Table 2.1.4.2.B.1, below.

Table 2.1.4.2.B.1. Noise level monitoring

Critical Point Type	Critical point	No. of measurements	
		Zero naval traffic	Intense naval traffic
Secondary	04 A	2	0
	04 B	2	0

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

2.1.4.2.C. Soil quality monitoring

Activities performed during this 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.



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Table 2.1.4.2.C.1. Soil samples

Critical Point Type	Critical Point	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 labeled according to the encoding and labeling instructions. For each sample, a bulletin has been completed, see Annex Anexei 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

Activities performed during this reporting period, regarding water and sediments quality, in this critical point, are identical with those presented in Table nr. 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 sediments samples

Critical Point Type	Critical Point (CP)	Water samples	Sediment samples
Secondary	04A	10	4
Secondary	04B	10	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 (Anexa 6.2.4 și 6.2.5).

2.1.4.2.F. Aquatic flora and fauna monitoring

Activities performed during this reporting period, regarding aquatic flora and fauna (except for ichthyofauna) are summarized in Table 2.1.4.2.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, aquatic macrophytes and macroinvertebrates (Table 1.2)
2.	Conducting the sampling campaign for phytoplankton, aquatic macrophytes and macroinvertebrates (sampling bulletins for aquatic flora and fauna - Annex 6.2.6)



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3.	Laboratory preparing and analysis for phytoplankton and benthic macroinvertebrates samples
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In this campaign, from CP04 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

Critical Point Type	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				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 6.2.6.

From CP04 were collected *macrophytes* samples, as presented in Table 2.1.4.2.F.3.

Table 2.1.4.2.F.3. Macrophytes samples

Critical Point Type	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 labeled according to the encoding and labeling instructions. 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 CP04.

Table 2.1.4.2.F.3. Benthic macroinvertebrates samples

Critical Point Type	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	



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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.

2.1.4.2.F.is. Sturgeons and barbell migration monitoring

In September 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 September were processed the data obtained from scientific fishing in May and July and Interim Report 17 was drafted.

2.1.4.2.G. Terrestrial flora and fauna monitoring

2.1.4.2.G.1 Terrestrial flora

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

2.1.4.2.G.2 Terrestrial fauna/Avifauna

Activities performed during this reporting period, regarding avifauna monitoring, are summarized in Table 2.1.4.2.G.2.1.

Table 2.1.4.2.G.2.1 Specific objective: Avifauna monitoring

No.	Activities
1.	Activities in field: <ul style="list-style-type: none"> - Aquatic and migratory avifauna observations from the boat - Aquatic and migratory avifauna observations from the shore
2.	Analysis and centralizing the obtained data (Annex 6.8)

2.1.4.2.H. Natura 2000 monitoring sites

In this reporting period were monitored Natura 2000 sites in critical points and dobrogean lakes areas, due to the importance of islets in birds' autumn migration.

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



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

No.	Activities
1.	<p>Avifauna assessments in Natura 2000 sites:</p> <ul style="list-style-type: none"> - ROSPA0039 “Dunăre Ostroave”, ROSCI0022 “Canaralele Dunării” - in CP04 area - In PC02-04 area: <ul style="list-style-type: none"> o ROSCI0071 „Dumbrăveni - Valea Urluia - Lacul Vederoasa” - in Baciului lake and Balta Vederoasa areas o ROSPA0007 „Balta Vederoasa” - in Balta Vederoasa and Baciului lake areas o ROSCI0172 „Pădurea and Valea Canaraua Fetii - Iortmac” - in Dunăreni, Iortmac and Oltina lakes areas o ROSPA0054 „Lacul Dunăreni” in Dunăreni lake area o ROSPA0056 „Lacul Oltina” - in Oltina and Iortmac lakes areas <p>Field activities:</p> <ul style="list-style-type: none"> - Observation for aquatic and migratory avifauna from the boat - Observation for aquatic and migratory avifauna from the shore
2.	Analysis and processing for the field data (Annex 6.9)

2.1.4.2.1. 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

Activities conducted during 01/30.09.2017, regarding air quality monitoring, in 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/measurements “in situ” made during 01-30 September 2017.

Table 2.1.4.3.A.1. Air Samples Repartition

Critical Point Type	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 labeled according to the encoding and labeling instructions. For each sample/measurement, a bulletin has been completed, see Annex 6.2.1.

2.1.4.3.B. Noise level monitoring

Activities conducted during 01/30.09.2017, 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, during 01/30.09.2017, measurements were made as presented in Table 2.1.4.3.B.1, below.

Table 2.1.4.3.B.1. Noise level monitoring

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

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

2.1.4.3.C. Soil quality monitoring

Activities performed during this reporting period, regarding soil quality monitoring, in this critical point were presented in Table 2.1.4.1.C.1.

Number of soil samples collected from CP07 is presented in Table 2.1.4.3.C.1.

Table 2.1.4.3.C.1. Soil samples

Critical Point Type	Critical Point	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 labeled according to the encoding and labeling instructions. 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 this reporting period, regarding water and sediments quality, in this critical point, are identical with those presented in Table 2.1.1.E.1.

In this campaign, water and sediments samples were collected as presented in Table 2.1.4.3.E.1.

Table 2.1.4.3.E.1. Water and sediments samples

Critical Point Type	Critical Point (CP)	Water samples	Sediment samples
Secondary	07	10	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 (Anexa 6.2.4 și 6.2.5).

2.1.4.3.F. Aquatic flora and fauna monitoring

Activities performed during this 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 objectivea: Aquatic flora and fauna monitoring

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

In this campaign, from CP07 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

Critical Point Type	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 labeled according to the encoding and labeling instructions. 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 CP07 for *macrophytes* analysis.

Table 2.1.4.3.F.3. Macrophytes samples

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



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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.

In Table 2.1.4.3.F.4. are presented *benthic macroinvertebrates samples* collected from CP07.

Table 2.1.4.3.F.3. Benthic macroinvertebrates samples

Critical Point Type	Critical Point (CP)	Qualitative and quantitative analysis		
		Left bank	Right bank	
Secondary	07	upstream	1	1
	downstream	1	1	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 6.2.6.

2.1.4.3.F.is. Sturgeons and barbell migration monitoring

In September 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 September were processed the data obtained from scientific fishing in May and July, and Interim Report 17 was drafted.

2.1.4.3.G. Terrestrial flora and fauna monitoring

2.1.4.3.G.1 Terrestrial flora

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

2.1.4.3.G.2 Terrestrial fauna / Avifauna

Activities performed during this reporting period, regarding avifauna monitoring, are summarized in Table 2.1.4.3.G.2.1.

Table 2.1.4.3.G.2.1 Specific objective: Avifauna monitoring

No.	Activities
1.	Activities in field: <ul style="list-style-type: none"> - Aquatic and migratory avifauna observations from the boat - Aquatic and migratory avifauna observations from the shore
2.	Analysis and processing the field data (Annex 6.8)



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2.1.4.3.H. Natura 2000 sites monitoring

During this reporting period were monitored Natura 2000 sites in this critical point area.

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

Table 2.1.4.3.H.1 Specific objective: Natura 2000 sites monitoring

No.	Activities
1.	Avifauna assessment in Natura 2000 sites in CP07 area: - ROSPA0039 “Dunăre Ostroave”; ROSCI0022 “Canaralele Dunării” Activities in field: - Aquatic and migratory avifauna observations from the boat - Aquatic and migratory avifauna observations from the shore
2.	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 September 2017, INCDPM specialists have conducted, according to Specifications, bathymetric data acquisition in main critical points CP01 and CP02. Thus, for this activity have been performed:

- bathymetric measurements for morphology and sections profiling;
- bathymetric measurements for velocity and flow rates;
- longitudinal bathymetric measurements 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	7
3.	Chemist 2	Borș Adriana	5
4.	Ichthyologist 1	Cristea Victor	8
5.	Ichthyologist 2	Falka Istvan	6
6.	Hydrology	Poteraș George	8
7.	Hydraulic sedimentology	Ungureanu Gh Viorel	14
8.	Phytoplankton and aquatic macrophytes	Marinescu Florica	13
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	15
14.	Ecologist 1	Ambrus Laszlo	2
15.	Ecologist 2	Holban Elena	6
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 01-31 October 2017 are synthetically presented in the table 3.4.

Table 3.4. Activities for the period of 01.10-31.10.2017

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	NO	YES	YES	YES	YES	YES
2.	Processing and interpretation of field and laboratory data (where is necessary)	YES	YES	NO	YES	YES	YES	YES	YES
3.	Monthly report preparation	YES	YES	NO	YES	YES	YES	YES	YES



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4. TIME SCHEDULE AND BUDGET PROJECT

4.1. Time schedule for project implementation

ID	Task Name	Start	Finish	B							B							B			
				28 Aug '17			11 Sep '17			25 Sep '17			09 Oct '17			23 Oct '17					
				M	F	T	S	W	S	T	M	F	T	S	W	S	T	M	F	T	
1	Air monitoring: Contribution to Interim Report 17	Fri 01.09.17	Tue 31.10.17																		
2	77th Month	Fri 01.09.17	Fri 29.09.17																		
3	78th Month	Mon 02.10.17	Tue 31.10.17																		
4	Air monitoring: Measurements and sampling campaigns for air quality, in secondary critical points CP 03A, CP 03B, CP 04A, CP 04B, CP 07.	Fri 01.09.17	Fri 29.09.17																		
5	77th Month	Fri 01.09.17	Fri 29.09.17																		
6	Air monitoring: Processing and assessing the data and measurements for air quality, in main critical points CP01, CP02	Fri 01.09.17	Fri 29.09.17																		
7	77th Month	Fri 01.09.17	Fri 29.09.17																		
8	Air monitoring: Processing and assessing the data and measurements for air quality, in secondary critical points CP 03A, CP 03B, CP 04A,	Mon 02.10.17	Tue 31.10.17																		
9	78th Month	Mon 02.10.17	Tue 31.10.17																		
10	Noise monitoring: Contribution to Interim Report RI17	Fri 01.09.17	Tue 31.10.17																		
11	77th Month	Fri 01.09.17	Fri 29.09.17																		
12	78th Month	Mon 02.10.17	Tue 31.10.17																		
13	Noise monitoring: Performing the measuring and sampling campaign for noise monitoring in secondary critical points CP 03A, CP 03B, CP 04A, CP 04B, CP 07.	Fri 01.09.17	Fri 29.09.17																		
14	77th Month	Fri 01.09.17	Fri 29.09.17																		
15	Water quality monitoring - Water (physical-chemical analysis) - Physical-chemical analysis C65 (CP 01, CP 02, CP03, CP04, CP07)	Fri 01.09.17	Fri 29.09.17																		
16	77th Month	Fri 01.09.17	Fri 29.09.17																		
17	Water quality monitoring - Water (physical-chemical analysis) - Data processing for Interim Report 17 (CP 01, CP 02, CP10, CP03, CP04,	Mon 02.10.17	Tue 31.10.17																		
18	78th Month	Mon 02.10.17	Tue 31.10.17																		
19	Water quality monitoring - Sediments (heavy metals, organic micropollutants) - Physical-chemical analysis C65 (CP 01, CP 02, CP 10, CP03, CP04, CP07)	Fri 01.09.17	Fri 29.09.17																		
20	77th Month	Fri 01.09.17	Fri 29.09.17																		
21	Water quality monitoring - Sediments (heavy metals, organic micropollutants) - Data processing for Interim Report 17 (CP 01, CP 02, CP 10, CP03, CP04, CP07)	Mon 02.10.17	Tue 31.10.17																		
22	78th Month	Mon 02.10.17	Tue 31.10.17																		
23	Soil monitoring - Physical-chemical analysis C27 (CP03, CP04, CP07)	Fri 01.09.17	Fri 29.09.17																		
24	77th Month	Fri 01.09.17	Fri 29.09.17																		
25	Soil monitoring - data processing for Interim Report 17 (CP 01, CP 02, CP 10, CP03, CP04, CP07)	Mon 02.10.17	Tue 31.10.17																		



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ID	Task Name	Start	Finish	Gantt Chart														
				28 Aug '17			11 Sep '17			25 Sep '17			09 Oct '17			23 Oct '17		
				M	F	T	S	W	S	T	M	F	T	S	W	S	T	M
26	78th Month	Mon 02.10.17	Tue 31.10.17	[Green bar from 02.10.17 to 31.10.17]														
27	Aquatic flora monitoring CP 03A/03B/04A/04B/07 - phytoplankton - sampling, composition, abundance, biomass	Fri 01.09.17	Fri 29.09.17	[Green bar from 01.09.17 to 29.09.17]														
28	77th Month	Fri 01.09.17	Fri 29.09.17	[Green bar from 01.09.17 to 29.09.17]														
29	Aquatic flora monitoring CP 03A/03B/04A/04B/07 - aquatic macrophytes - sampling, composition, abundance, biomass	Fri 01.09.17	Fri 29.09.17	[Green bar from 01.09.17 to 29.09.17]														
30	77th Month	Fri 01.09.17	Fri 29.09.17	[Green bar from 01.09.17 to 29.09.17]														
31	Aquatic fauna monitoring CP 01/02/03A/03B/04A/04B/07 - aquatic macroinvertebrates - sampling, composition, abundance, biomass, saprobic index	Fri 01.09.17	Tue 31.10.17	[Green bar from 01.09.17 to 31.10.17]														
32	77th Month	Fri 01.09.17	Fri 29.09.17	[Green bar from 01.09.17 to 29.09.17]														
33	78th Month	Mon 02.10.17	Tue 31.10.17	[Green bar from 02.10.17 to 31.10.17]														
34	Hydromorphological monitoring in CP 01/CP 02 - level and turbidity measurements in hydrometric automatic station of INCDPM	Fri 01.09.17	Tue 31.10.17	[Green bar from 01.09.17 to 31.10.17]														
35	77th Month	Fri 01.09.17	Fri 29.09.17	[Green bar from 01.09.17 to 29.09.17]														
36	78th Month	Mon 02.10.17	Tue 31.10.17	[Green bar from 02.10.17 to 31.10.17]														
37	Hydromorphological monitoring in CP 01/CP 02 - Single-beam measurements - sections profiling	Fri 01.09.17	Tue 31.10.17	[Green bar from 01.09.17 to 31.10.17]														
38	77th Month	Fri 01.09.17	Fri 29.09.17	[Green bar from 01.09.17 to 29.09.17]														
39	78th Month	Mon 02.10.17	Tue 31.10.17	[Green bar from 02.10.17 to 31.10.17]														
40	Hydromorphological monitoring in CP 01/CP 02 - Flow rate monitoring (volume, velocity, level)	Fri 01.09.17	Tue 31.10.17	[Green bar from 01.09.17 to 31.10.17]														
41	77th Month	Fri 01.09.17	Fri 29.09.17	[Green bar from 01.09.17 to 29.09.17]														
42	78th Month	Mon 02.10.17	Tue 31.10.17	[Green bar from 02.10.17 to 31.10.17]														
43	Hydromorphological monitoring in CP 01/CP 02 - Bathymetric high-resolution measurements	Mon 02.10.17	Tue 31.10.17	[Green bar from 02.10.17 to 31.10.17]														
44	77th Month	Mon 02.10.17	Tue 31.10.17	[Green bar from 02.10.17 to 31.10.17]														
45	Ichthyofauna biodiversity monitoring CP 01/02/03/04/07 - trails and migration periods monitoring for sturgeon specimens with ultrasonic	Fri 01.09.17	Tue 31.10.17	[Green bar from 01.09.17 to 31.10.17]														
46	77th Month	Fri 01.09.17	Fri 29.09.17	[Green bar from 01.09.17 to 29.09.17]														
47	78th Month	Mon 02.10.17	Tue 31.10.17	[Green bar from 02.10.17 to 31.10.17]														
48	Ichthyofauna biodiversity monitoring CP 01 - Data downloading from the monitoring systems for sturgeons migration	Fri 01.09.17	Tue 31.10.17	[Green bar from 01.09.17 to 31.10.17]														
49	77th Month	Fri 01.09.17	Fri 29.09.17	[Green bar from 01.09.17 to 29.09.17]														
50	78th Month	Mon 02.10.17	Tue 31.10.17	[Green bar from 02.10.17 to 31.10.17]														
51	Ichthyofauna biodiversity monitoring CP 01 - Scientific fishing and marking with ultrasonic tags for sturgeons specimens	Fri 01.09.17	Tue 31.10.17	[Green bar from 01.09.17 to 31.10.17]														



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Ministerul Mediului și Climei
și Apărării Teritoriale



Ministerul Agriculturii și Dezvoltării Rurale



Ministerul Infrastructurii și Transporturilor



TRANSEUROPEAN TRANSPORT INFRASTRUCTURE AUTHORITY

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 77: 1 - 30 September 2017

ID	Task Name	Start	Finish	Gantt Chart													
				B				B				B					
				28 Aug '17		11 Sep '17		25 Sep '17		09 Oct '17		23 Oct '17					
M	F	T	S	M	F	T	S	M	F	T	S	M	F	T			
52	77th Month	Fri 01.09.17	Fri 29.09.17	[Green bar from Fri 01.09.17 to Fri 29.09.17]													
53	78th Month	Mon 02.10.17	Tue 31.10.17	[Green bar from Mon 02.10.17 to Tue 31.10.17]													
54	Ichtyofauna biodiversity monitoring CP 01 - Sturgeons active monitoring with VR100	Fri 01.09.17	Tue 31.10.17	[Green bar from Fri 01.09.17 to Tue 31.10.17]													
55	77th Month	Fri 01.09.17	Fri 29.09.17	[Green bar from Fri 01.09.17 to Fri 29.09.17]													
56	78th Month	Sun 01.10.17	Tue 31.10.17	[Green bar from Sun 01.10.17 to Tue 31.10.17]													
57	Monitoring for avifauna covered by Birds Directive - CP 01/02/03/04/0	Fri 01.09.17	Tue 31.10.17	[Green bar from Fri 01.09.17 to Tue 31.10.17]													
58	77th Month	Fri 01.09.17	Fri 29.09.17	[Green bar from Fri 01.09.17 to Fri 29.09.17]													
59	78th Month	Mon 02.10.17	Tue 31.10.17	[Green bar from Mon 02.10.17 to Tue 31.10.17]													
60	Avifauna monitoring in Natura 2000 sites existent in CP 01/02/03/04/07 areas - autumn campaign	Fri 01.09.17	Tue 31.10.17	[Green bar from Fri 01.09.17 to Tue 31.10.17]													
61	77th Month	Fri 01.09.17	Fri 29.09.17	[Green bar from Fri 01.09.17 to Fri 29.09.17]													
62	78th Month	Mon 02.10.17	Tue 31.10.17	[Green bar from Mon 02.10.17 to Tue 31.10.17]													
63	Monthly reports	Fri 01.09.17	Tue 31.10.17	[Green bar from Fri 01.09.17 to Tue 31.10.17]													
64	77th Month	Fri 01.09.17	Fri 29.09.17	[Green bar from Fri 01.09.17 to Fri 29.09.17]													
65	78th Month	Mon 02.10.17	Tue 31.10.17	[Green bar from Mon 02.10.17 to Tue 31.10.17]													



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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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4.2. Budget and expenses incurred during the reporting period

Justifying calculation for 01 - 30 September 2017

I. EXPERTS EXPENSES				
No.	Experts	No. of working days		Maximum total value of the fees
			Post - Construction (36 months)	
			Fee (Euro on working day)	
1	Project leader	5	240	1.200,00 EUR
2	Chemist 1	7	200	1.400,00 EUR
3	Chemist 2	5	200	1.000,00 EUR
4	Ichthyologist 1	8	330	2.640,00 EUR
5	Ichthyologist 2	6	200	1.200,00 EUR
6	Hydrology	8	200	1.600,00 EUR
7	Hydraulic- sedimentlogy	14	200	2.800,00 EUR
8	Aquatic phytoplankton and macropytes	13	130	1.690,00 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	15	200	3.000,00 EUR
14	Ecologist 1	2	140	280,00 EUR
15	Ecologist 2	6	140	840,00 EUR
16	Evaluator	5	330	1.650,00 EUR
SUBTOTAL EXPERTS' FEES				20.300,00 EUR
II EXPENSES with JUSTIFICATION				
1	Ichthyology- telemetry (sturgeons and barbel transmitters, batteries, expensis on stugeons' capturing)			1.446,08 EUR
2	Abiotic and biotic data for the establishment of the framework			
3	Analysis			19.329,87 EUR
SUBTOTAL EXPENSES with JUSTIFICATION				20.775,95 EUR
III. MATHEMTICAL MODELING				
1	Software acquisition+hardware+ necessary licenses			0,00 EUR
2	Acquisition of bathymetric data, necessary for the mathematical modeling			143.972,40 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				143.972,40 EUR
TOTAL without V.A.T.				185.048,35 EUR



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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 77: 1 - 30 September 2017

4.3. Budget and expenses for the next period

Estimated calculation for 01 - 31 October 2017

I. EXPERTS EXPENSES				
No.	Experts	No. of working days		Maximum total value of the fees
		Post - Construction (36 ments)	Fee (Euro on working day)	
1	Project leader	5	240	1.200,00 EUR
2	Chemist 1	9	200	1.800,00 EUR
3	Chemist 2	5	200	1.000,00 EUR
4	Ichthyologist 1	8	330	2.640,00 EUR
5	Ichthyologist 2	6	200	1.200,00 EUR
6	Hydrology	8	200	1.600,00 EUR
7	Hydraulic- sedimentlogy	14	200	2.800,00 EUR
8	Aquatic phytoplankton and macropytes	13	130	1.690,00 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	15	200	3.000,00 EUR
14	Ecologist 1	2	140	280,00 EUR
15	Ecologist 2	6	140	840,00 EUR
16	Evaluator	5	330	1.650,00 EUR
SUBTOTAL EXPERTS' FEES				20.700,00 EUR
II EXPENSES with JUSTIFICATION				
1	Ichthyology- telemetry (sturgeons and barbel transmitters, batteries, expensis on stugeons' capturing)			1.446,08 EUR
2	Abiotic and biotic data for the establishment of the framework			
3	Analysis			0,00 EUR
SUBTOTAL EXPENSES with JUSTIFICATION				1.446,08 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.				72.146,08 EUR



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Agentia Nationala de Protectia Mediului



Ministerul Mediului si Climei



5. CONCLUSIONS, RECOMMENDATIONS, WARNINGS

- 5.1 This Monthly Report reflects monitoring activities from September 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 September 2017, hydromorphological monitoring activity was mainly based on processing the data from previous months measurements campaigns, namely: ADCP measurements (flow rates and velocities) in main critical points area: CP01 and CP02.

Flow rates in September 2017 were low in the first part of the month and average in the second one, compared to hystorical data for this period of the year.



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Naționala Agenția de Protecția Mediului
județul Brașov



Naționala Autoritate de Dezvoltare
Sustenabilă 2007-2013



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6. ANNEXES

6.1 Relevant correspondence

6.2 Recording bulletins for sampling/measurements

6.2.1: AIR sampling sheets

6.2.2: NOISE sampling sheets

6.2.3: SOIL sampling sheets

6.2.4: WATER sampling sheets

6.2.5: SEDIMENTS sampling sheets

6.2.6: 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 1 - 31 August 2017

6.6.1: Reports for analytical results AIR

6.7 Ichthyofauna monitoring

6.6.1: Centralizer for sturgeons' captures

6.6.2: Sturgeons' captures sheets

6.6.3: Determination of sturgeons' genetic variability and development of the methodology

6.8 Avifauna monitoring

6.9 Natura 2000 sites monitoring