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TRANS
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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 66: 1 - 31 October 2016

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. 66

01 - 31 October 2016



FINAL VERSION



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CARRIED OUT BY:

1. PhD eng. DEÁK György - CS I - project leader
2. Univ. Prof. PhD eng. Iulian Gabriel BÎRSAN
3. PhD eng. Mihai LESNIC - CS I
4. PhD eng. Dan COCIORVA - CS II
5. PhD eng. George POTERAȘ - CS I
6. PhD eng. Ioan BOSOANCĂ
7. biol. SZABO Jozsef
8. PhD eng. Gina GHIȚĂ - CS II
9. Phd chem. Adriana BORȘ - CS II
10. PhD eng. Victor CRISTEA
11. PhD biol. Florica MARINESCU - CS III
12. Cecilia ȘERBAN
13. Luiza FLOREA
14. FRINK Jozsef Pal
15. Marian TUDOR
16. PhD eng. Mihaela ILIE - CS III
17. prof. univ. eng. dipl. Helmut HABERSACK
18. PhD Falka Istvan
19. PhD ZAHARIA Tania
20. ecologist AMBRUS Laszlo
21. prof. PhD eng. Gh Viorel UNGUREANU
22. Magdalena CHIRIAC - CS I
23. eng. Marius RAISCHI - CS III
24. PhD eng. Lucian LASLO - CS III
25. PhD chem. Petra IONESCU - CS III
26. ecologist MIHOLCSA Tamas
27. PhD eng. Alin Marius BÂDILIȚĂ - CSIII
28. eng. Bianca PETCULESCU - CS III
29. PhD eng. Ana Maria ANGHEL - CSIII
30. chem. Alexandru IVANOV - CSIII
31. PhD physicist Cristina SÎRBU - CS III



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32. eng. Georgeta Tudor, CS
33. eng. chim. Ileana MÎȚIU - CS I
34. eng. Monica Niculina RADU - CS I
35. ecologist Iuliana MĂRCUȘ - CS III
36. PhD eng. Carmen TOCIU - CS III
37. chem. Carmen MUNTEANU - CS III
38. ecologist Mariana MINCU - CS III
39. PhD eng. Mihaela MÎȚIU - CSIII
40. eng. Marius OLTEANU, CSIII
41. geograph Bogdan URITESCU - CS
42. eng. Constantin CÎRSTINOIU - CS
43. geograph Nicu CIOBOTARU - CS
44. ecologist Tiberius DĂNĂLACHE, CS
45. eng. Ștefan ZAMFIR, CS
46. eng. Gabriel BADEA, CS
47. eng. Alexandru CRISTEA, CS
48. eng. Simona RAISCHI - CS
49. biol. Ioana SAVIN - ACS
50. ecologist Ecaterina MARCU - ACS
51. biologist Cristina CIMPOERU - ACS
52. ecologist Cornelia LUNGU - ACS
53. eng. Mădălin SILION, ACS
54. techn. Sergiu SĂNDICĂ
55. techn. Corneliu VASILE
56. techn. Elena BARBU
57. techn. Paula CATANĂ
58. techn. Georgeta MĂNESCU



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1. INTRODUCTION

1.1. Brief presentation of the objectives monitored in the construction phase

I. This report presents the monitoring objectives for the period 01-31 October 2016.

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.

Besides a proper organization and development of the field campaign, 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 October 2016 for post-construction period are presented in Table 1.2.

Table 1.2. Objectives monitored during the period of 01.10-31.10.2016

| Objectives monitored | Sampling period / ongoing activities | Campaign | Critical Points | | | | | | | | | |
|----------------------|--------------------------------------|--|----------------------|-----|-----|---------------------------|-----|-----|-----|-----|-----|-----|
| | | | Main Critical Points | | | Secondary Critical Points | | | | | | |
| | | | 01 | 02 | 10 | 03A | 03B | 04A | 04B | 07 | | |
| A. | AIR | - | - | NO | NO | NO | NO | NO | NO | NO | NO | NO |
| B. | NOISE | - | - | NO | NO | NO | NO | NO | NO | NO | NO | NO |
| C. | SOIL | - | - | NO | NO | NO | NO | NO | NO | NO | NO | NO |
| D. | HYDROMORPHOLOGY | 05, 06, 10-12,- 17, 18, 24-26.10.2016 | C66 | YES | YES | YES | NO | NO | NO | NO | NO | NO |
| E. | WATER QUALITY | - | - | NO | NO | NO | NO | NO | NO | NO | NO | NO |
| | SEDIMENTS | - | - | NO | NO | NO | NO | NO | NO | NO | NO | NO |
| F. | AQUATIC FLORA | - | - | NO | NO | NO | NO | NO | NO | NO | NO | NO |
| | AQUATIC FAUNA | - | - | NO | NO | NO | NO | NO | NO | NO | NO | NO |
| | F.is. STURGEONS | 03, 09, 10, 11, 12, 17, 23, 24, 31.10.2016 | C26 | YES | YES | YES | YES | YES | YES | YES | YES | YES |
| | F.is. BARBELL | - | - | NO | NO | NO | NO | NO | NO | NO | NO | NO |
| | F.i. OTHER FISH SPECIES | - | - | NO | NO | YES | NO | NO | NO | NO | NO | NO |
| G. | TERRESTRIAL FLORA | - | - | NO | NO | NO | NO | NO | NO | NO | NO | NO |
| | TERRESTRIAL FAUNA/ AVIFAUNĂ | 03-15.10.2016 | Autumn migration | YES | YES | YES | YES | YES | YES | YES | YES | YES |
| H. | NATURA 2000 SITES | 10-13.10.2016 | Avifauna monitoring | YES | YES | YES | YES | YES | YES | YES | YES | YES |
| I. | BUILDING SITE | - | - | NO | 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"> - 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 VELD 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, PCF, PCB 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 | - planktonic nets - Patalas sampler - dredges 20cmx50 cm - Square wooden frame, with surface of 1m ² - GPS | - reverse microscope ZEISS - OPTIKA B-600T microscope - KRUSS microscope - Canon A570 IS camera for microscope |
| | AQUATIC FAUNA | - zooplanktonic nets - zoobenthic nets - Petersen sampler - benthos grabbing dredges - benthos sampling probe - GPS | - Stereomicroscope Olympus - Binocular Zeiss - Microscope ZEISS - Canon A570 IS camera for microscope - magnifying glass |
| | F.is. STURGEONS AND BARBELL | - Fixed monitoring system DKTB - Floating monitoring system type DKMR-01T - Complex monitoring, alarming and control system type DK-PRB-01U - Monitoring system with ultrasonic transmitter type 40 - Monitoring system with ultrasonic transmitter type 60 - Mobile receiver for sturgeons telemetry Vemco VR 100 - GPS | - Reception station of WR2W - VR100 mobile receptor - Multiparameter YSI - Endoscope for sturgeon gender determining WELLD WED 3000V - Radar Lowrance Elite 9 CHIRP - 4 pieces |
| | F.i. OTHER FISH SPECIES | - High power electrical fishing device Hans Grassl EL 65 II GI - Low power electrical fishing device Hans Grassl EL 60 II HI - Ihtyometer - Electronic scale - GPS - binocular microscope - stereo microscope | |
| G. | TERRESTRIAL FLORA | Binoculars, GPS, notebook, standard forms, camera | |
| | TERRESTRIAL FAUNA/ AVIFAUNĂ | Binocular, lunette, camera, GPS | |
| H. | NATURA 2000 SITES | Binocular, lunette, camera, GPS | |
| I. | BULDING SITE ACTIVITY | - DESAGA pump - Autolaboratory - Sound Level Meter and Microphone, Brüel & Kjær - dust sampler LECKEL | |



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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 01/31.10.2016 refers 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 66 |
| 2. | Contribution to Interim Report 15 |

According to post-construction monitoring objectives, in October 2016 for air quality monitoring in this main critical point CP 01 is not provided a sampling campaign. 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 01/30.10.2016 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 66 |
| 2. | Contribution to Interim Report 15 |

According to post-construction monitoring objectives, in October 2016 for noise level monitoring in this main critical point CP 01 is not provided a measurements campaign. 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

During this period have not been made soil sampling in this critical point.



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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 01/31.10.2016, 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. | Physical-chemical analysis in laboratory (preliminary determinations) for water samples collected in September 2016 (C61) |
| 2. | Physical-chemical analysis in laboratory (preliminary determinations) for sediment samples collected in September 2016 (C61) |

In this campaign have not been collected water and sediments samples.

2.1.1.F. Aquatic flora and fauna monitoring

In the reported period have not been collected samples.

2.1.1.F.is. Sturgeons and barbell migration monitoring

In October were marked with ultrasonic and anti-poaching tags, 7 beluga specimens on Borcea branch. The specimen with code 12S8, which was tagged in 23.10.2016 and released at km 43 on Borcea branch at 12:00, was recaptured two more times. First time action was happened at 16:00 in the day of initial tagging and releasing, and the second recapture was in 24.10.2016. Capture and recapture sheets are annexed to this report.

For sturgeons tagged during the month, it was performed also an active pursuit with VR100



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device to determine the behavior in the first period post-tagging.

During the month, have been downloaded all monitoring systems from this critical point, but have not been recorded any fish passing over the bottom sill on Bala branch.

Table 2.1.1.F.is.1. Specific objective: Sturgeons and barbell migration monitoring

| No. | Activities |
|-----|---|
| 1. | Data downloading and maintenance actions for the monitoring systems |
| 2. | Marking with ultrasonic tag for 7 specimens of beluga species, on Borcea branch |
| 3. | Active tracking with VR 100 of sturgeons tagged in October |
| 4. | Monitoring of the migration paths |

2.1.1.F.i. Other fish species monitoring

In October are not provided any monitoring activities for fish species other than sturgeons.

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

Activities conducted in 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. | Field activities: <ul style="list-style-type: none"> - Observations for aquatic and migratory avifauna from the boat - Observations for aquatic and migratory avifauna from the shore |
| 2. | Analysis and processing of the field data |

2.1.1.H. Natura 2000 sites monitoring

In this 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.



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

| No. | Activities |
|-----|--|
| 1. | Avifauna assessment in Natura 2000 sites in CP01 area: <ul style="list-style-type: none"> - ROSPA0039 “Dunăre Ostroave” - ROSCI0022 “Canaralele Dunării” Field activities: <ul style="list-style-type: none"> - Observations for aquatic and migratory avifauna from the shore - Observations for aquatic and migratory avifauna from the boat |
| 2. | Analysis and processing of the field data |

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 01/31.10.2016 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 October 2016 for air quality monitoring in this main critical point CP02 is not provided a sampling campaign. 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 presented in Table 2.1.1.B.1.

According to post-construction monitoring objectives, in October 2016 for noise level monitoring in this main critical point CP 02 is not provided a measurements campaign. 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 has not been made any soil sampling.

2.1.2.D. Hydromorphological monitoring

The activities from this reporting period are summarized in table 2.1.2.D.1.



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Overall 3 main activities have been carried out:

- Single-beam bathymetric measurements of high resolution;
- Flow and velocities measurements on the monitoring sections;
- Turbidity and level continuous measurements in the 2 hydrometric automatic stations.

Table 2.1.2.D.1 Specific objective: hydromorphological monitoring

| No. | Activities |
|-----|---|
| 1. | Single-beam bathymetric measurements of high resolution |
| 2. | Flow and velocities measurements on the monitoring sections |
| 3. | Turbidity and level continuous measurements in the 2 automatic hydrometric stations |

In October 2016, were conducted - mainly - ADCP measurements (flow rates/velocities) provided in Specifications. Results will be presented in the Interim Report for this month.

2.1.2.E. Water and sediments monitoring

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

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

2.1.2.F. Aquatic flora and fauna monitoring

During this period have not been made sampling.

2.1.2.F.is. Sturgeons and barbell migration monitoring

In CP02, monitoring of sturgeons migration was made with the monitoring systems placed on Old Danube.

2.1.2.F.i. Other fish species monitoring

In October are not provided any monitoring activities for fish species other than sturgeons.

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.



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2.1.2.G.2 Terrestrial fauna/ Avifauna

Activities conducted 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"> - Observations for aquatic and migratory avifauna from the boat - Observations for aquatic and migratory avifauna from the shore |
| 2. | Analysis and processing of the field data |

2.1.2.H. Natura 2000 sites monitoring

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

The activities carried out during this reporting period, regarding Natura 2000 sites monitoring, are summarized in Table 2.1.2.H.1.

Table 2.1.2.H.1. Specific objective: Natura 2000 sites monitoring

| No. | Activities |
|-----|---|
| 1. | Avifauna assessments in Natura 2000 sites: <ul style="list-style-type: none"> - ROSPA0039 "Dunăre Ostroave" - in CP02 area - ROSCI0022 "Canaralele Dunării" in CP02 area - In zona PC02-04: <ul style="list-style-type: none"> o ROSCI0071 „Dumbrăveni - Valea Urluia - Lacul Vederosa” - in Baciului and Balta Vederosa lakes areas o ROSPA0007 „Balta Vederosa” - in Balta Vederosa 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"> - Observations for aquatic and migratory avifauna from the boat - Observations for aquatic and migratory avifauna from the shore |
| 2. | Analysis and processing of the field data |

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 01/31.10.2016, regarding air quality monitoring, in this critical point are those presented in Table 2.1.1.A.1.

For main critical point CP10, in October 2016 have not been made monitoring activities for air quality, as 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, related to this critical point are those presented in Table 2.1.1.B.1.

For main critical point CP10, in October 2016 have not been made monitoring activities for noise level, as 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 soil samples have not been collected.

2.1.3.D. Hydrophological monitoring

Activities performed during this reporting period, are summarized in Table 2.1.3.D.1.

Overall, have been performed 3 main activities:

- Single-beam bathymetric measurements for sections profiling;
- Flow and velocity measurements on the monitoring sections;
- Have continued activities of continuous measurements for turbidity and level in the 3 hydrometrical automatic stations.

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. | Continuous measurements for turbidity and level in the 3 hydrometrical automatic stations |

2.1.3.E. Water and sediments quality monitoring

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



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

Table 2.1.3.E.1. Water and sediments samples

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

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

2.1.3.F. Aquatic flora and fauna monitoring

During the reported period, sampling have not been made.

2.1.3.F.is. Sturgeons and barbell migration monitoring

Monitoring of sturgeons migration was made with monitoring systems on Caleia, Cravia branches and navigable Danube.

2.1.3.F.i. Other fish species monitoring

In October are not provided any monitoring activities for fish species other than sturgeons.

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

Activities conducted in this reporting period, regarding avifauna monitoring, are summarized in Table 2.1.3.G.2.1.

Table 2.1.3.G.2.1. Specific objective: Avifauna monitoring

| No. | Activities |
|-----|---|
| 1. | Field activities: - Observations for aquatic and migratory avifauna from the shore |
| 2. | Analysis and processing of the field data |



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2.1.3.H. Natura 2000 sites monitoring

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

The activities carried out during this reporting period, regarding Natura 2000 sites monitoring, are summarized in Table 2.1.3.H.1.

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

| No. | Activities |
|-----|--|
| 1. | Avifauna assessment in Natura 2000 sites in CP10 area: <ul style="list-style-type: none"> - ROSCI0006 „Balta Mică a Brăilei” - ROSPA0005 „Balta Mică a Brăilei” - ROSCI0307 „Lacul Sărat - Brăila” Field activities: <ul style="list-style-type: none"> - Aquatic and migratory avifauna observations from the shore |
| 2. | Analysis and processing for the field data |

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 the CP 03 (upstream and downstream Seica)

2.1.4.1.A. Air quality monitoring

The activities carried out during 01/31.10.2016 refers to air quality monitoring for each secondary critical points are presented in Table 2.1.4.1.A.1.

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

| No. | Activities |
|-----|--|
| 1. | Data processing and assessment for air samples collected in September (reports for analytical results) |

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

2.1.4.1.B. Noise level monitoring

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



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2.1.4.1.C. Soil quality monitoring

The activities carried out during 01/31.10.2016 regarding soil quality monitoring in this critical point are summarized Table 2.1.4.1.C.1.

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

| No. | Activities |
|-----|--|
| 1. | Efectuarea analizelor fizico-chimice de laborator (determinări preliminare) pentru probele de sol prelevate în luna septembrie (C23) |

During this period have not been made soil sampling in this critical point.

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

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

2.1.4.1.F. Aquatic flora and fauna monitoring

During this period have not been made sampling.

2.1.4.1.F.is. Sturgeons and barbell migration monitoring

Monitoring of sturgeons migration have been conducted on this sector by the monitoring systems placed between km 348 and km 240, on Old Danube.

2.1.4.1.F.i. Other fish species monitoring

No field activities or data processing have been made in this critical point.

2.1.4.1.G. Terrestrial flora and fauna monitoring

2.1.4.1.G.1 Terrestrial flora

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

2.1.4.1.G.2 Terrestrial fauna / Avifauna

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



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Table 2.1.4.1.G.2.1. Specific objective: Avifauna monitoring

| No. | Activities |
|-----|---|
| 1. | Field activities: <ul style="list-style-type: none"> - Aquatic and migratory avifauna observations from the shore - Aquatic and migratory avifauna observations from the boat |
| 2. | Analysis and processing of the field data |

2.1.4.1.H. Natura 2000 sites monitoring

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

The activities carried out 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 assessment in Natura 2000 sites: <ul style="list-style-type: none"> - ROSPA0039 „Dunăre Ostroave” - in CP03 area - ROSCI0022 „Canaralele Dunării” - in CP03 area - in PC02-04 area: <ul style="list-style-type: none"> o ROSCI0071 „Dumbrăveni - Valea Urluia - Lacul Vederoasa” - in lake Baciului and Balta Vederoasa areas o ROSPA0007 „Balta Vederoasa” - in Balta Vederoasa and Baciului lakes areas o ROSCI0172 „Pădurea and Valea Canaraua Fetii - Iortmac” - in lakes Dunăreni, Iortmac and Oltina areas o ROSPA0054 „Lacul Dunăreni” in Dunăreni lake area o ROSPA0056 „Lacul Oltina” - in lakes Oltina and Iortmac areas Field activities: <ul style="list-style-type: none"> - Observations for aquatic and migratory avifauna from the shore - Observations for aquatic and migratory avifauna from the boat |
| 2. | Analysis and processing for the field data |

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. Critical point 04 monitoring/Ceacâru/Fermecatu

2.1.4.2.A. Air quality monitoring

The activities carried out during 01/31 October 2016 regarding air quality monitoring for each secondary critical points are presented in Table 2.1.4.1.A.1.

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



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2.1.4.2.B. Noise level monitoring

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

2.1.4.2.C. Soil quality monitoring

The activities carried out during 01/31 October 2016 regarding soil quality monitoring in this critical point are summarized in Table 2.1.4.1.C.1.

During this period have not been made soil sampling in this critical point.

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

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

2.1.4.2.F. Aquatic flora and fauna monitoring

During this period, sampling have not been made.

2.1.4.2.F.is. Sturgeons and barbell migration monitoring

Monitoring of sturgeons migration was performed on this sector by the monitoring systems placed between km 347 and km 240 on Old Danube.

2.1.4.2.F.i. Other fish species monitoring

In October are not provided any monitoring activities for fish species other than sturgeons.

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

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



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Table 2.1.4.2.G.2.1. Specific objective: Avifauna monitoring

| No. | Activities |
|-----|---|
| 1. | Field activities: <ul style="list-style-type: none"> - Observations for aquatic and migratory avifauna from the boat - Observations for aquatic and migratory avifauna from the shore |
| 2. | Analysis and processing for the field data |

2.1.4.2.H. Natura 2000 monitoring sites

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

The activities carried out during this reporting period, regarding Natura 2000 sites monitoring, are summarized in Table 2.1.4.2.H.1.

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

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

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 for this period of time because the hydrotechnical works have not been started.

2.1.4.3. Critical Point CP 07 / Fasolele monitoring

2.1.4.3.A. Air quality monitoring

Activities performed during 01/31.10.2016, regarding air quality monitoring, for this secondary critical point are those presented in Table 2.1.4.1.A.1.

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



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2.1.4.3.B. Noise level monitoring

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

2.1.4.3.C. Soil quality monitoring

Activities performed during 01/31 October 2016, regarding soil quality monitoring, in this critical point, were summarized in Table 2.1.4.1.C.1.

During this period have not been made soil sampling in this critical point.

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

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

2.1.4.3.F. Aquatic flora and fauna monitoring

During the reported period have not been made sampling.

2.1.4.3.F.is. Sturgeons and barbell migration monitoring

Sturgeons migration monitoring were performed on this sector by the monitoring systems placed between km 348 and km 240 on Old Danube.

2.1.4.3.F.i. Other fish species monitoring

In October are not provided any monitoring activities for fish species other than sturgeons.

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

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



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Table 2.1.4.3.G.2.1. Specific objective: Avifauna monitoring

| No. | Activities |
|-----|---|
| 1. | Field activities: - Aquatic and migratory avifauna observations from the shore |
| 2. | Analysis and processing for field data |

2.1.4.3.H. Natura 2000 sites monitoring

In this reporting period have been 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 2.1.4.3.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” Field activities regarding autumn migration: - Observations for aquatic and migratory avifauna from the shore |
| 2. | Analysis and processing of the field data |

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 September, INCDPM specialists have achieved, according to Specifications, bathymetric data acquisition in main critical points CP01, CP02 and CP10 areas. Thus, for this activity have been performed:

- bathymetric measurements for morphology and for 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 team experts

| No. | Experts | Names of experts | Number of working days post-construction |
|-----|---------------------------------------|---------------------|--|
| 1. | Project manager | Deák György | 10 |
| 2. | Chemist 1 | Ghiță Gina | 6 |
| 3. | Chemist 2 | Borș Adriana | 5 |
| 4. | Ichthyologist 1 | Cristea Victor | 10 |
| 5. | Ichthyologist 2 | Falka Istvan | 0 |
| 6. | Hydrology | Poteraș George | 8 |
| 7. | Hydraulic sedimentology | Ungureanu Gh Viorel | 12 |
| 8. | Phytoplankton and aquatic macrophytes | Marinescu Florica | 0 |
| 9. | Zooplankton | Adina Popescu | 0 |
| 10. | Terrestrial invertebrates | Șerban Cecilia | 0 |
| 11. | Aquatic macroinvertebrates | Florea Luiza | 0 |
| 12. | Terrestrial flora and vegetation | Frink Jozsef Pal | 0 |
| 13. | Ornithologist 1 | Jozsef Szabo | 18 |
| 14. | Ecologist 1 | Ambrus Laszlo | 3 |
| 15. | Ecologist 2 | Zaharia Tania | 5 |
| 16. | Assessor | Tudor Marian | 6 |

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 2016 are synthetically presented in the table 3.3.

Table 3.3. Activities for the period of 01-31.10.2016

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



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4. TIME SCHEDULE AND BUDGET PROJECT

4.1. Time schedule for project implementation



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4.2. Budget and expenses incurred during the reporting period

Justifying calculation for 01 - 31 October 2016

| I. CHELTUIELI CU EXPERȚII : | | | | |
|--|---|------------------------------|----------------------------------|--------------------------------------|
| Nr. crt. | Experti | Nr. zile | Onorariu (Euro pe zi lucrătoare) | Valoarea totala maxima a onorariilor |
| | | Post - Constructie (36 luni) | | |
| 1 | Conducator proiect | 10 | 240 | 2.400,00 EUR |
| 2 | Chimist 1 | 6 | 200 | 1.200,00 EUR |
| 3 | Chimist 2 | 5 | 200 | 1.000,00 EUR |
| 4 | lhtiolog 1 | 10 | 330 | 3.300,00 EUR |
| 5 | lhtiolog 2 | 0 | 200 | 0,00 EUR |
| 6 | Hidrologie | 8 | 200 | 1.600,00 EUR |
| 7 | Hidraulic sedimentologic | 12 | 200 | 2.400,00 EUR |
| 8 | Fitoplancton si macrofite acvatice | 0 | 130 | 0,00 EUR |
| 9 | Zooplancton | 0 | 130 | 0,00 EUR |
| 10 | Invertebrate terestre | 0 | 125 | 0,00 EUR |
| 11 | Macronevertebrate acvatice | 0 | 125 | 0,00 EUR |
| 12 | Flora si vegetatia terestra | 0 | 125 | 0,00 EUR |
| 13 | Ornitolog 1 | 18 | 200 | 3.600,00 EUR |
| 14 | Ecolog 1 | 3 | 140 | 420,00 EUR |
| 15 | Ecolog 2 | 5 | 140 | 700,00 EUR |
| 16 | Evaluator | 6 | 330 | 1.980,00 EUR |
| SUBTOTAL ONORARII EXPERTI | | | | 18.600,00 EUR |
| II. CHELTUIELI CU JUSTIFICARE: | | | | |
| 1 | lhiologie-telemetrie (transmitatoare sturioni, transmitoare mreana, baterii, cheltuieli privind captura sturioni) | | | 12.899,71 EUR |
| 2 | Date biotice si abiotice pentru stabilirea cadrului de baza | | | 0,00 EUR |
| 3 | Analize | | | 0,00 EUR |
| SUBTOTAL CHELTUIELI CU JUSTIFICARE: | | | | 12.899,71 EUR |
| III. MODELARE MATEMATICA | | | | |
| 1 | Achiziția pachetului de software + hardware + licențele necesare | | | 0,00 EUR |
| 2 | Achiziția datelor batimetrice necesare modelării matematice | | | 19.342,09 EUR |
| 3 | Instruire 2 specialiști în modelare numerică | | | 0,00 EUR |
| 4 | Onorariu expert modelare numerica | | | 0,00 EUR |
| 5 | Elaborarea model matematic 3D si implementare in monitorizare 3D | | | 0,00 EUR |
| SUBTOTAL MODELARE NUMERICĂ: | | | | 19.342,09 EUR |
| TOTAL fara T.V.A. | | | | 50.841,80 EUR |



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4.3. Budget and expenses for the next period

Estimated calculation for 01 - 30 November 2016

| I. CHELTUIELI CU EXPERTII : | | | | |
|--|--|------------------------------|----------------------------------|--------------------------------------|
| Nr. crt. | Expertii | Nr. zile | | Valoarea totala maxima a onorariilor |
| | | Post - Constructie (36 luni) | Onorariu (Euro pe zi lucrătoare) | |
| 1 | Conducator proiect | 6 | 240 | 1.440,00 EUR |
| 2 | Chimist 1 | 5 | 200 | 1.000,00 EUR |
| 3 | Chimist 2 | 0 | 200 | 0,00 EUR |
| 4 | Ihtiolog 1 | 10 | 330 | 3.300,00 EUR |
| 5 | Ihtiolog 2 | 0 | 200 | 0,00 EUR |
| 6 | Hidrologie | 8 | 200 | 1.600,00 EUR |
| 7 | Hidraulic sedimentologic | 10 | 200 | 2.000,00 EUR |
| 8 | Fitoplancton si macrofite acvatice | 6 | 130 | 780,00 EUR |
| 9 | Zooplancton | 0 | 130 | 0,00 EUR |
| 10 | Nevertebrate terestre | 0 | 125 | 0,00 EUR |
| 11 | Macronevertebrate acvatice | 10 | 125 | 1.250,00 EUR |
| 12 | Flora si vegetatia terestra | 0 | 125 | 0,00 EUR |
| 13 | Ornitolog 1 | 0 | 200 | 0,00 EUR |
| 14 | Ecolog 1 | 5 | 140 | 700,00 EUR |
| 15 | Ecolog 2 | 0 | 140 | 0,00 EUR |
| 16 | Evaluator | 5 | 330 | 1.650,00 EUR |
| SUBTOTAL ONORARII EXPERTI | | | | 13.720,00 EUR |
| II. CHELTUIELI CU JUSTIFICARE: | | | | |
| 1 | Ihtiologie-telemetrie (transmitatoare sturioni, transmitoare mreana, baterii, cheltuieli privind captura sturioni) | | | 24.500,00 EUR |
| 2 | Date biotice si abiotice pentru stabilirea cadrului de baza | | | 0,00 EUR |
| 3 | Analize | | | 0,00 EUR |
| SUBTOTAL CHELTUIELI CU JUSTIFICARE: | | | | 24.500,00 EUR |
| III. MODELARE MATEMATICA | | | | |
| 1 | Achiziția pachetului de software + hardware + licențele necesare | | | 0,00 EUR |
| 2 | Achiziția datelor batimetrice necesare modelării matematice | | | 40.000,00 EUR |
| 3 | Instruire 2 specialiști în modelare numerică | | | 0,00 EUR |
| 4 | Onorariu expert modelare numerica | | | 0,00 EUR |
| 5 | Elaborarea model matematic 3D si implementare in monitorizare 3D | | | 0,00 EUR |
| SUBTOTAL MODELARE NUMERICĂ: | | | | 40.000,00 EUR |
| TOTAL fara T.V.A. | | | | 78.220,00 EUR |



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5. CONCLUSIONS, RECOMMENDATIONS, WARNINGS

- 5.1 This Monthly Report reflects monitoring activities from October 2016 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, with the frequency related with the post-construction stage, up to end 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 October 2016, hydromorphological monitoring activity mainly based on ADCP measurements (flow rates and velocities) in main critical points area: CP01, CP02 and CP10, as well as from single-beam measurements for sections profiling in the 3 main critical points, in conditions with low flow rates for this period of the year.



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6. ANNEXES

6.1 Relevant correspondence

6.2 Ichthyofauna monitoring

6.2.1: Sturgeons capture centralizer

6.2.2: Capture sheets

6.3 Experts' activity reports

6.4 Images of activities

6.5 Hydromorphology monitoring

6.6 Reports of analytical results during 1 - 30 September 2016

6.6.1: Reports of analytical results during for AIR

6.6.2: Reports of analytical results during for SOIL

6.6.3: Reports of analytical results during for WATER

6.6.4: Reports of analytical results during SEDIMENTS

6.7 Avifauna monitoring

6.8 Natura 2000 sites monitoring