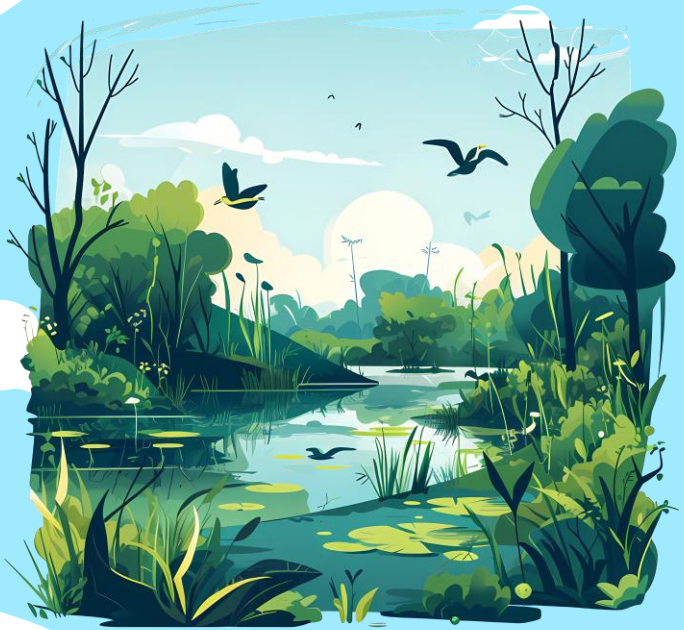
DANUBE DELTA NATIONAL INSTITUTE FOR
RSERCH AND DEVELOPMENT - TULCEA

NUCLEUS Program ”Danube Delta” 2022 - 2030



Dr. Gabriel LUPU
NUCLEUS Program Director

National Workshop for presenting the results obtained by
National Research and Development Institutes in 2021–2024
Timișoara, 03 - 04 September 2025

THE HISTORY OF THE INSTITUTION

1926

Establishment of the Tulcea Hydrobiological Station, which will become part of the institute in 1970.

1970

Establishment of the Research and Design Institute for the Danube Delta (according to the DCM of the Socialist Republic of Romania no. 528 / 1970)

1999

The year in which DDIRD became the National Institute for Research and Development (according to GD no. 409/1999)

RESEARCH ACTIVITIES

Departments and Laboratories

BIODIVERSITY CONSERVATION AND SUSTAINABLE USE OF NATURAL RESOURCES

Plants, plant resources and habitats;
Ichthyofauna and fishery resources;
Ornithology and hunting;
Reptiles and amphibians;
Entomology;
Human communities and ecotourism.

DANUBE DELTA - TECHNOLOGICAL INFORMATION CENTER

Socio-Economic Sciences, Tourism;
Information and Technology Transfer;
Organization of scientific events;
Graphics, Design.

TECHNOLOGICAL DEVELOPMENT, TRANSFER AND SPATIAL PLANNING

Spatial planning and technological development;
Topographic studies;
Environmental assessment;
Geotechnical studies.

LABORATORIES AND RESEARCH STATION

Chemistry laboratory;
Hydrobiology laboratory;
Genetics and Molecular Ecology Laboratory;
Enisala, Maliuc and Chilia Veche Research Stations.

ECOLOGICAL RESTORATION AND SPECIES RECOVERY

Sturgeon Research Group;
Restoration of habitats.

INFORMATIONAL SYSTEM AND GEOMATICS

Geographical Informational Systems;
Remote Sensing;
Environmental Hydrological and Land Survey.

CENTER FOR THE STUDY OF TRANSBORDER AND EMERGENT DISEASES AND ZOONOSES

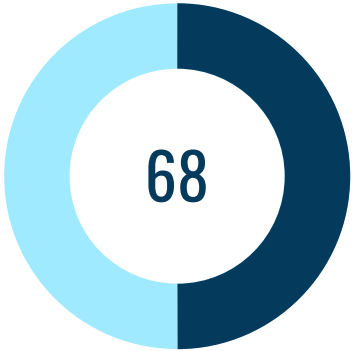
Ornithology, Game Resources, Zoonosys, Ecology, Mammalogy;
Veterinary Medicine, Parasitology, Equine Ecology.



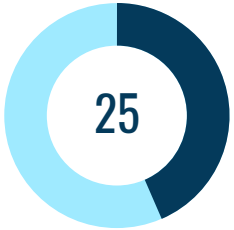



HUMAN RESOURCES

TOTAL EMPLOYEES 136, OF WHICH:



RESEARCH STAFF



DOCTORS IN SCIENCES

PhD Candidate

SCIENTIFIC TITLES

RESEARCH ASSISTANTS

SCIENTIFIC RESEARCHERS

SCIENTIFIC RESEARCHERS III

SCIENTIFIC RESEARCHERS II

SCIENTIFIC RESEARCHERS I

ENGINEER TECHNICAL DEVELOPMENT

ENGINEER TECHNICAL DEVELOPMENT II

ENGINEER TECHNICAL DEVELOPMENT I

"Danube Delta 2022" NUCLEUS Program
DD 2022

THE PERIOD OF IMPLEMENTATION 01.2019 – 12.2022

"Danube Delta 2022" NUCLEUS Program took into account the DDNI's own RDI Strategy for the period 2019-2022 and aimed to stimulate and support research, development and innovation activities in the field of sustainable development, ecology and environmental protection, to substantiate management in the Danube Delta Biosphere Reserve and in other wetlands of national and international interest for biodiversity conservation and sustainable development.

Objectives of the "Danube Delta 2022" NUCLEUS Program

Objective 1

Conservation of biodiversity and ecosystems in the Danube Delta Biosphere Reserve

Objective 3

Sustainable development of human communities and risk factors in the Danube Delta Biosphere Reserve

Objective 2

Ecological restoration and recovery of species in the Danube Delta Biosphere Reserve

Objective 4

Information Management in Biodiversity Research, Ecological Restoration and Sustainable Development in the Danube Delta Biosphere Reserve

NUCLEUS Projects that are part of the "Danube Delta 2022" NUCLEUS Programme:

- **NP 1** – Development of methods to identify seasonal changes in aquatic fauna using eDNA as a biodiversity monitoring tool(BiomeDNA).
- **NP 2** – Assessment of the ecological status of aquatic ecosystems on the territory of the Danube Delta Biosphere Reserve.
- **NP 3** – Research on the status and conservation of biodiversity, habitats, sustainable exploitation of natural resources, impact of non-native species and socio-economic implications of the Danube Delta Biosphere Reserve.
- **NP 4** – Substantiation of the ecological reconstruction measures of the lakes in the Danube Delta based on the study of the dynamics of aquatic macrophyte habitats.
- **NP 5** – Research on the state of ecologically reconstructed areas, anthropically degraded areas and recovery of sturgeon species in the Danube Delta Biosphere Reserve.
- **NP 6** – Research on infectious diseases and parasitosis in wild and domestic animals in the Danube Delta Biosphere Reserve and surroundings.
- **NP 7** – Research on the traceability of pharmaceutical residues and chemical carcinogens in order to prevent risk factors on aquatic ecosystems and exploitable natural resources in the Danube Delta Biosphere Reserve.
- **NP 8** – Modelling and designing natural systemic solutions to limit the influences of risk factors in integrated and sustainable spatial planning in the Danube Delta.
- **NP 9** – Development of biodiversity data processing methods to ensure information processing needs in wetland research.

The period of implementation of the NUCLEUS Program: 01.2023 – 12.2026

Main Domain 6. - Environment and Eco-Technologies

Secondary Domain 6.1
Technologies for Environmental Management, Monitoring, and Remediation

Secondary Domain 6.2
Technologies for the Circular Economy

The "Danube Delta 2030" NUCLEUS Program is part of the DDNI's own RDI Strategy for the period 2022-2030 and aims to support the development plan of the Danube Delta Research and Development Institute, to substantiate the management in the Danube Delta Biosphere Reserve and to accumulate scientific information and expertise for the implementation of strategies.

Objectives of the "Danube Delta 2030" NUCLEUS Program”

Objective 1

Conservation of biodiversity and ecosystems in the Danube Delta Biosphere Reserve

Objective 3

Sustainable development of human communities and risk factors in the Danube Delta Biosphere Reserve

Objective 2

Ecological restoration and recovery of species in the Danube Delta Biosphere Reserve

Objective 4

Information Management in Biodiversity Research, Ecological Restoration and Sustainable Development in the Danube Delta Biosphere Reserve

NP Projects - component of the NUCLEUS Program "Danube Delta 2030"

- **NP 1** – Assessment of the ecological status of the ecosystems in the Danube Delta Biosphere Reserve, in the context of climate change and the fulfillment of the 2030 decarbonization targets.
- **NP 2** – Molecular approaches - from DNA barcoding to DNA metabarcoding - for the study of aquatic species in the Danube Delta.
- **NP 3** – Research on the conservation of biodiversity, habitats, invasive (non-native) species, sustainable exploitation of natural resources and socio-economic implications of the Danube Delta Biosphere Reserve, in the context of climate change.
- **NP 4** – Research on the contribution of ecological restoration activities in the management of environmental risks caused by global climate change in the Danube Delta Biosphere Reserve.
- **NP 5** – Research on the development and implementation of suitable breeding technologies for endangered and declining fish species in the Danube Delta Biosphere Reserve.
- **NP 6** – Vector-borne diseases and epidemiological aspects in wild animal populations in delta ecosystems.
- **NP 7** – Research on new classes of chemical contaminants resulting from the development of new generations of goods and products.
- **NP 8** – Research on the natural, tourist, cultural and spiritual heritage of the Danube Delta Biosphere Reserve, in the context of sustainable development and global changes. Problems, challenges, perspectives.
- **NP 9** – Research on the evaluation and analysis of the rate of clogging of the channels subjected to engineering interventions to improve the hydrological conditions on the territory of the Danube Delta Biosphere Reserve.
- **NP 10** – Research on the digitalization of the monitoring process of the specific elements of the Danube Delta Biosphere Reserve.

NP 1

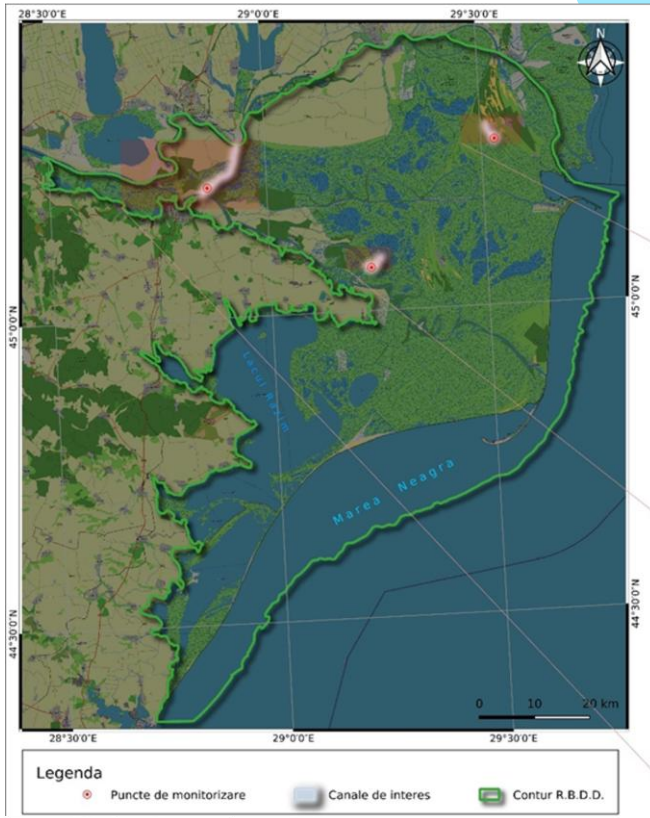
Assessment of the ecological status of the ecosystems in the Danube Delta Biosphere Reserve, in the context of climate change and the fulfillment of the 2030 decarbonization targets.

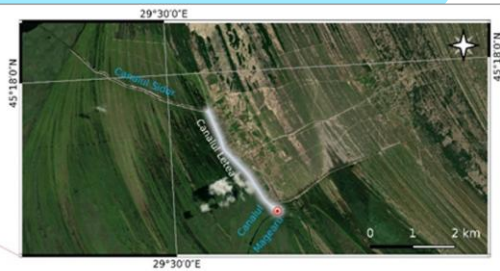
Implementation: 4 phases/year

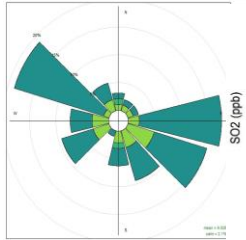
Testing of a anthropic impact assessment system based on smart sensors.

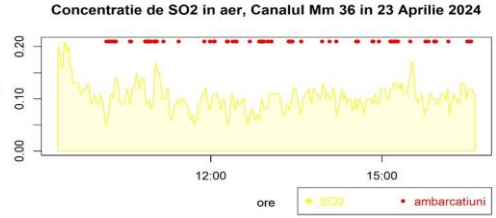
Physico-chemical parameters measured in water;

Parameters measured in air.

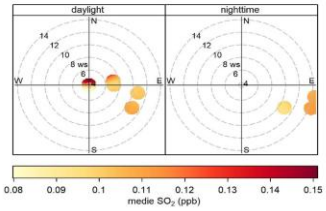


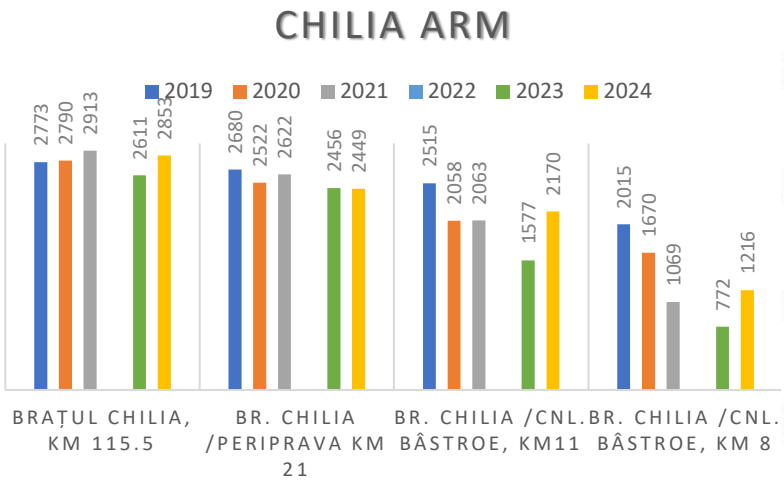


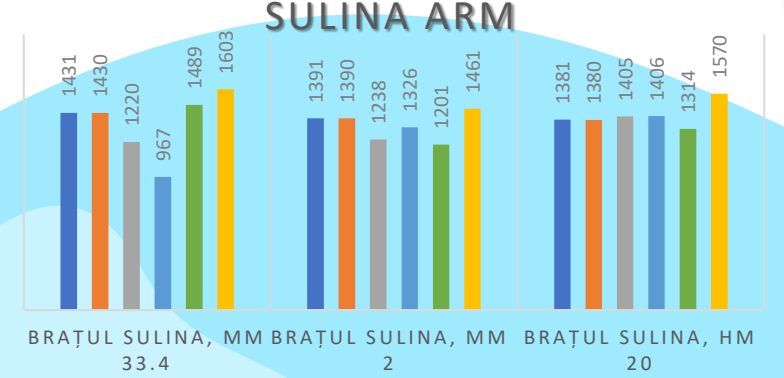




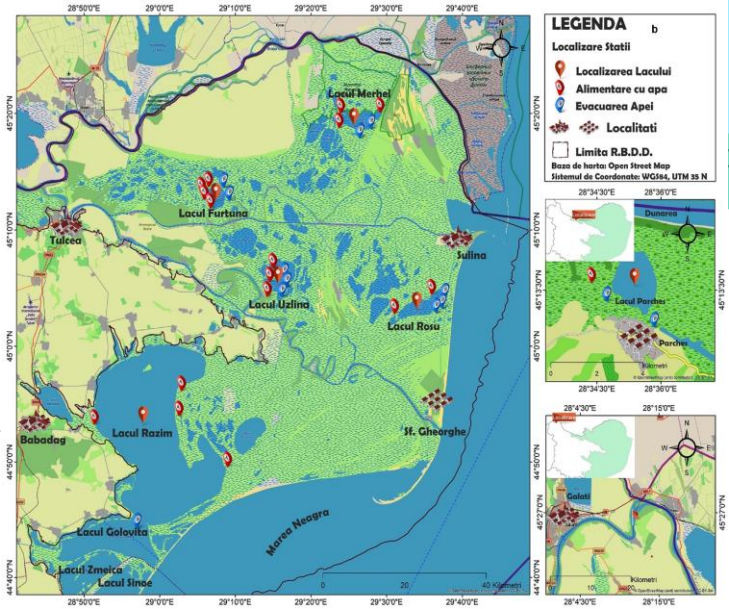
Dispersie SO_2 in aer, Canal Mm 36, 23 Aprilie 2024, zi si noapte







Measured Liquid Flow (m3/s) – March 2019, 2020, 2021, 2022, 2023 și 2024



Stații	Perioada prelevare	N-NH_4 mg N/L	N-NO_2 mg N/L
Amonte Galați	martie 2024	0.235	0.012
	iulie 2024	0.141	0.010
	sept. 2024	0.173	0.014
Zona de vărsare Siret	martie 2024	0.443	0.029
	iulie 2024	0.143	0.011
	sept. 2024	0.168	0.020
Aval oraș Galați	martie 2024	0.133	0.012
	iulie 2024	0.049	0.009
	sept. 2024	0.140	0.013
Cotul Pisicii	iulie 2024	0.060	0.009
	sept. 2024	0.151	0.013
Prut	martie 2024	0.118	0.013
	iulie 2024	0.086	0.010
	sept. 2024	0.186	0.031
Aval Reni	martie 2024	0.171	0.013
	sept. 2024	0.151	0.015
Ceatal Chilia-Dunăre fluviu	iulie 2024	0.052	0.009
	sept. 2024	0.151	0.016
Br. Tulcea M 42.5 (zona Pătlăgeanca – aval de șantier)	martie 2024	0.159	0.015
	iulie 2024	0.104	0.009
	sept. 2024	0.154	0.016
Stație Faleza oraș Tulcea(in dreptul H Delta)	Martie 2024	0.054	0.007
	Iulie 2024	0.231	0.030
	Sept. 2024	0.051	0.143
Izmail aval	Martie 2024	0.154	0.014
	Iulie 2024	0.103	0.008
	Martie 2024	0.135	0.015
Periprava	Iulie 2024	0.082	0.008
	Sept. 2024	0.215	0.022
Bâstroe amonte	Martie 2024	0.126	0.015
	Iulie 2024	0.057	0.087
	Martie 2024	0.121	0.014
Bâstroe aval	Iulie 2024	0.067	0.009
	Sept. 2024	0.247	0.026
Br. Sulina M 33.4 (Stația meteo)	Martie 2024	0.102	0.013
	Sept. 2024	0.232	0.017
	Martie 2024	0.079	0.014

NP 2

Molecular approaches - from DNA barcoding to DNA metabarcoding - for the study of aquatic species in the Danube Delta Implementation:

2 phases/year

Molecular approaches - from DNA barcoding to DNA metabarcoding - for the study of aquatic species in the Danube Delta Biosphere Reserve.
The project aims to conduct a complex study on the methods of assessing the ecological status of aquatic ecosystems in the Danube Delta. It aims to develop and evaluate new methods for identifying species of interest in the study area (DDBR), which complement or replace traditional methods.

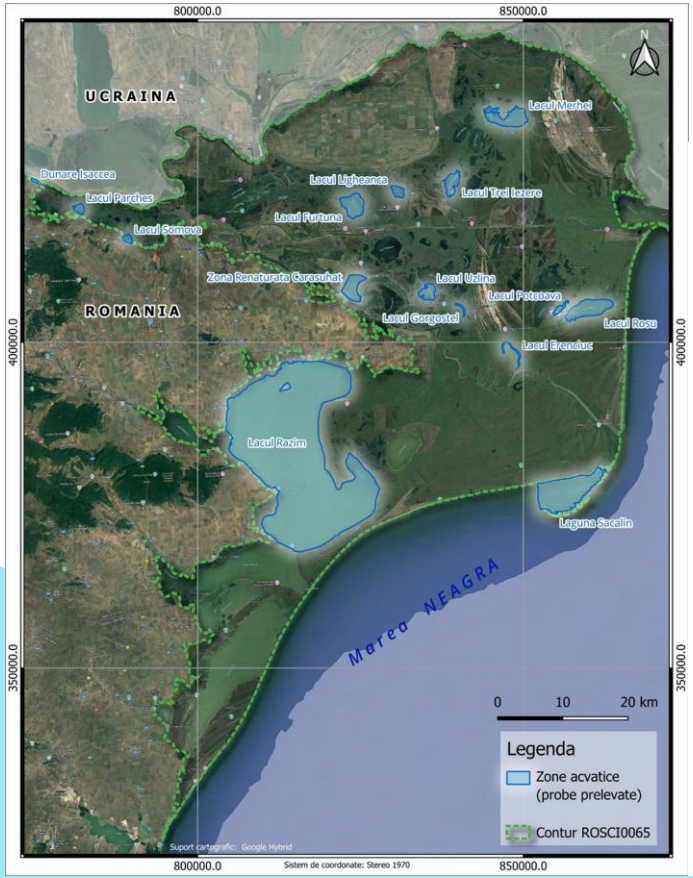
The objectives of the project are:

- Systematization of existing data from the literature in order to update information on the tools used in biomonitoring.
- Development of a suitable methodology for species identification by interspersing traditional methods with molecular ones (DNA barcoding).
- Testing and evaluating work protocols for each stage of the analysis process, in order to develop a reliable and replicable eDNA analysis method (DNA metabarcoding) and consolidate the information bases for species by supplementing them with bioinformatics data, so that molecular approaches become an integral part of the biomonitoring process.
- Use/improvement of research infrastructure to provide integrated packages of services applicable in species management.

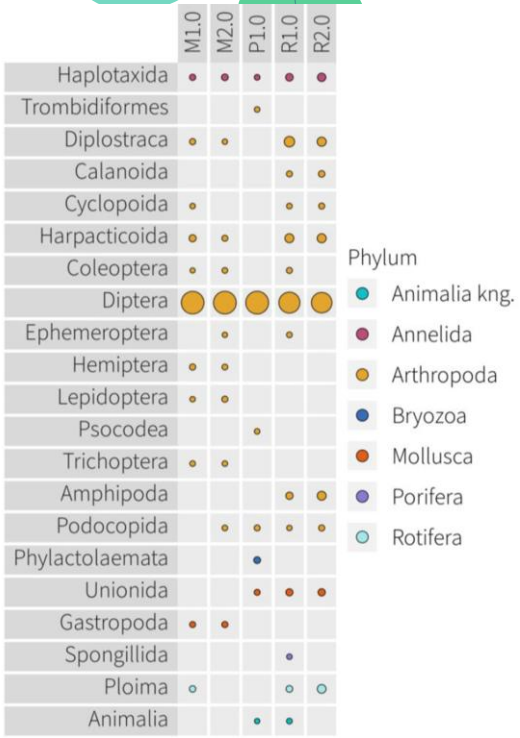
Representative images of the methods used for eDNA sampling

The stage of implementation:

- Screening of the literature on molecular methods used in the study of aquatic species
- Elaboration of the study methodology and the working plan
- Testing and validation of working protocols for the study of species starting from samples from controlled aquatic systems
- Analysis of ecological data and description of study areas
- Identification of aquatic species in the study areas by DNA barcoding method
- Quantification of aquatic fauna in the study areas using the eDNA method
- Critical analysis of molecular methods for the study of aquatic species in the DDBR
- Data analysis, presentation of the final project results and their dissemination



Geographic distribution of aquatic areas included in the study



Taxonomic assignment of sequences obtained by NGS analysis of samples

NP 3

Research on the conservation of biodiversity, habitats, invasive (non-native) species, sustainable exploitation of natural resources and socio-economic implications in the Danube Delta Biosphere Reserve, in the context of climate change.

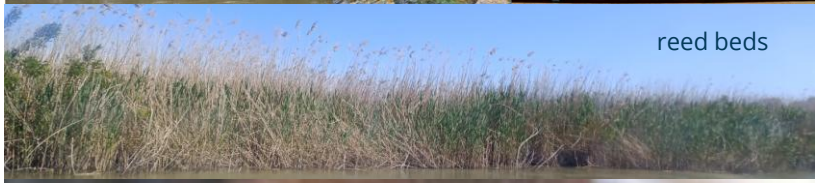
Implementation: 4 phases/year

General objective:

Conservation of biodiversity and habitats, management of invasive (non-native) species, sustainable exploitation of natural resources, and socio-economic implications in the Danube Delta Biosphere Reserve, in the context of climate change.

Specific objectives:

- Reed beds – fire ecology
- Vegetal resources – servicii ecosistemice
- Invertebrate – MP substantiation - DDBR
- Ihtiofauna – MP substantiation - DDBR
- Fishing Resources – fishing quota development
- Mammals – MP substantiation - DDBR
- Invasive Species – risk management
- Socio-Economic Systems
- Ecological Tourism

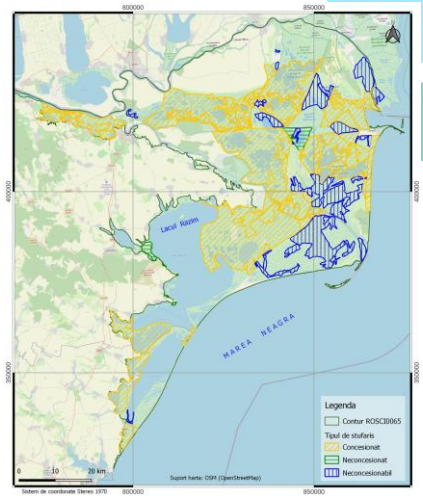

reed beds

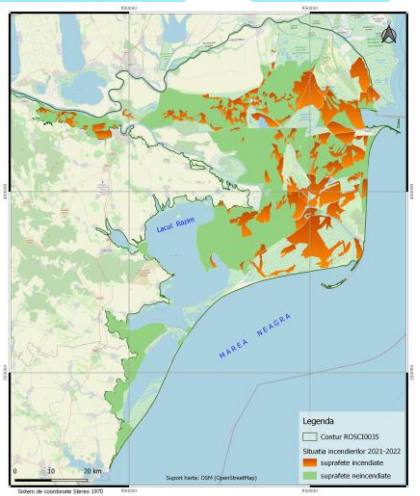

Biodiversity

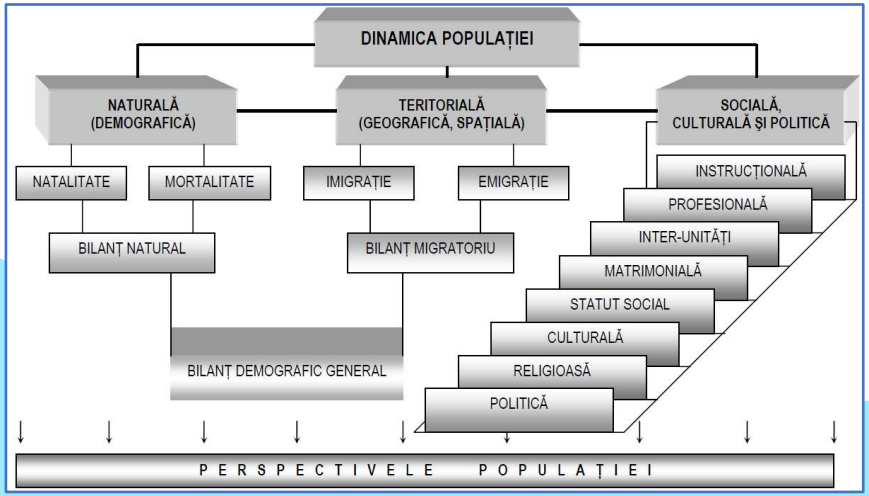
Targets and performance indicators - data analysis and presentation of results for the year: 2024

- Report on the status and conservation of biodiversity, habitats, invasive (non-native) species, sustainable exploitation of natural resources and socio-economic implications in the DDBR;
- Contributions to the development of the report on the state of the environment for 2024, submitted to the DDBRA;
- Development of data sets that will be the subject of results dissemination – publication of scientific articles, book chapters or books, participation in dedicated scientific events.

Ecotourism







NP 4

Research on the contribution of ecological restoration activities in managing environmental risks caused by global climate change in the Danube Delta Biosphere Reserve.

Implementation: 2 phases/year

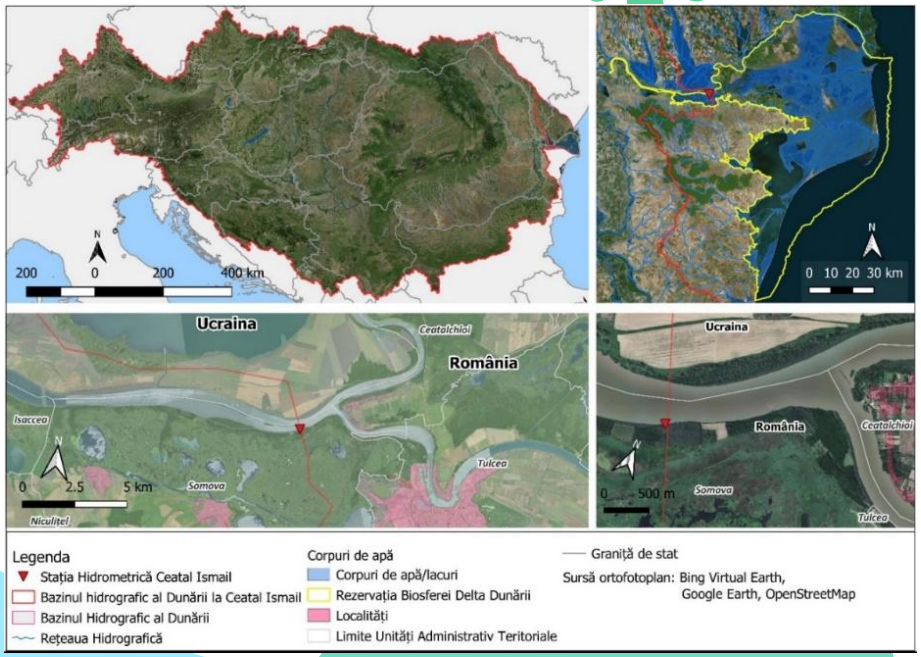
Hydrological modelling of flows with a return probability of 0.1%, 1% and 10% for the current scenario and for future time horizons taking into account climate change

The impact of climate change on the regime of maximums with different return periods was assessed through several stages:

- the Danube River sector was selected - the river segment with the highest flows;
- a database consisting of over 32 distinct sets (simulations with 4 climate models and 8 hydrological models) was established, analysed for the reference period (1971-2005) and for two climate scenarios RCP 4.5 and RCP 8.5;
- analysis of two distinct time horizons (2031-2060 and 2071-2100);
- the analysis methods used to determine the return periods of flows in various insurances, used in the calculation of extreme values for certain probabilities in hydrological practice, were selected.

The impact of climate change on maximum flows with certain return periods:

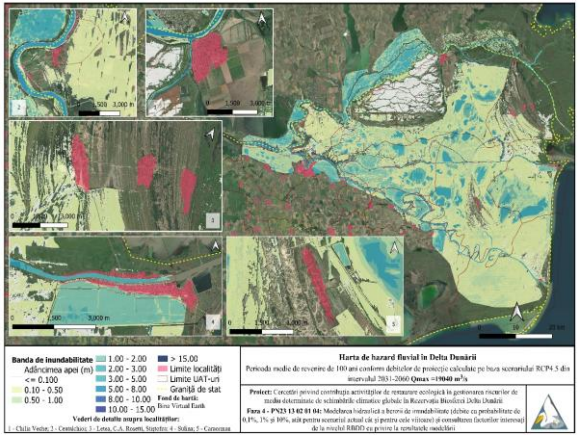
- The RCP 4.5 scenario indicates increases of about 17% for the 10-year return period, over 25% for flows with a 100-year return period and about 35% for flows that occur once every 1000 years, if we consider an average of the two distributions for the period 2031-2060. The projections for the period 2071-2100 indicate more pronounced increases for the three values of interest, with about 20% for flows with a 10-year return period, 31% for those with a 100-year return period and 60% for flows with a 1000-year insurance;
- The RCP 8.5 scenario indicates for the medium future (2031-2060) increases of 20%, 40% and up to 70% for the T10, T100 and T1000 periods, while for the 2071-2100 projection increases of 35%, 41% and 43% are expected for the T10, T100 and T1000 return periods. An extremely large increase in 1000-year flows is observed for the 2031-2060 interval of the RCP 8.5 projection..



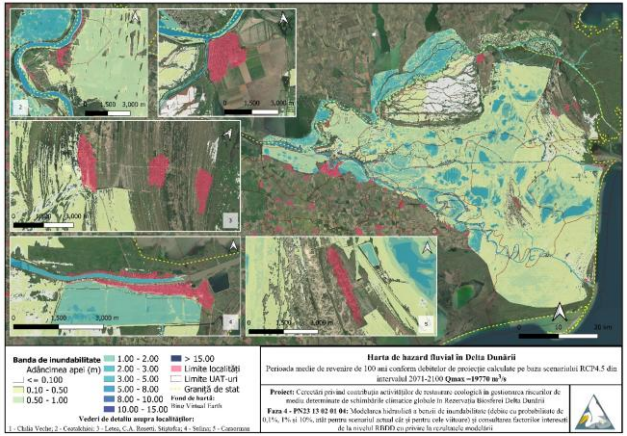
Location of the study section at different scales of analysis

Hydraulic modelling of the floodplain and consultation with stakeholders at the DDBR level on the modelling results

- According to the analysis of floodplains for the 100-year return period, it is estimated that:
  - Increases in areas covered by water from 2100 km² in the reference period to approximately 2540 km² (RCP 4.5 – 2031-2060), and in the maximum impact period for the same scenario an increase to 2788 km² is observed.
  - For the RCP 8.5 scenario, a more pronounced flooding trend is estimated, starting from an area of 2730 km² (2031-2060) to an area of 2788 km² (2071-2100).

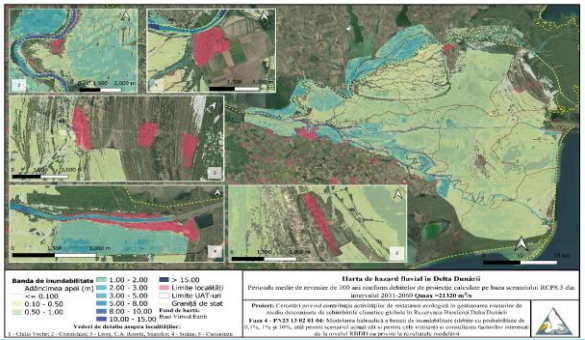


River hazard map in the Danube Delta for the 100-year return period determined using the RCP 4.5 scenario for the period 2031-2060

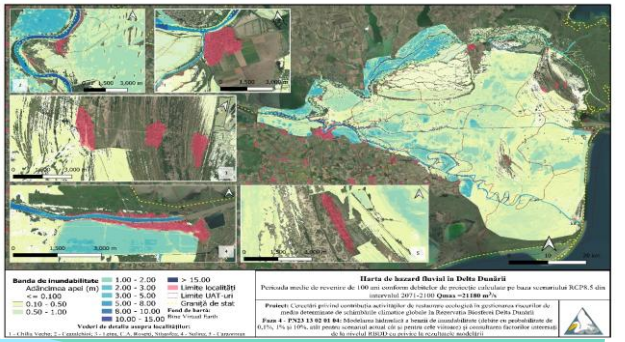


River hazard map in the Danube Delta for the 100-year return period determined using the RCP 4.5 scenario for the period 2071-2100

- Given that current return periods are already characterized by a significant expansion of floodplains, the impact of climate change on floodability in the Danube Delta will be significant, especially for return periods of 100 and 1000 years.
- Floods that are currently considered to have a low probability of occurrence, such as those with a 100-year return period, could become events with a much higher frequency, even less than 10 years, under both climate scenarios analysed (RCP4.5 and RCP8.5). As a result, very large floods could occur almost annually.
- In the case of floods that currently have a return period of 1000 years, their frequency could be reduced to less than once every 50 years (compared to the current situation), which indicates a significant increase in flood risk in the Danube Delta.



River hazard map in the Danube Delta for the 100-year return period determined using the RCP 8.5 scenario for the period 2031-2060



River hazard map in the Danube Delta for the 100-year return period determined using the RCP 4.5 scenario for the period 2031-2060

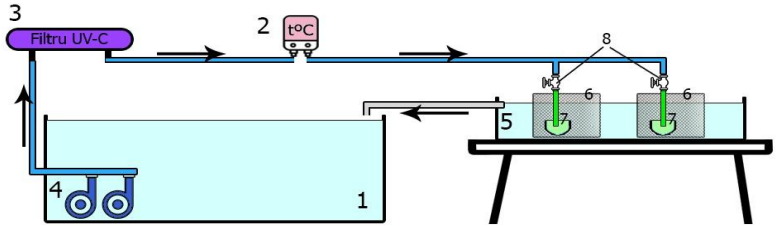
NP 5

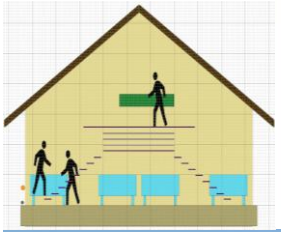
Research on the development and implementation of suitable reproductive technologies for endangered and declining fish species in the Danube Delta Biosphere Reserve.

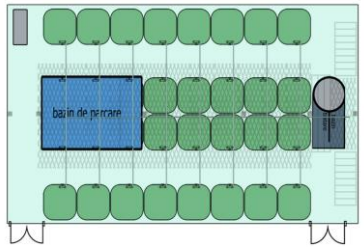
Implementation: 4 phases/year

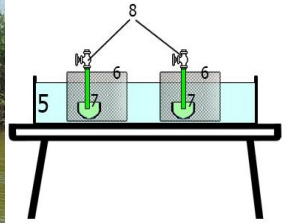
Targets and performance indicators - for 2024:

- Design, construction and commissioning of pilot breeding infrastructures;
- Adjusting and calibrating the functional parameters of the pilot plant that will be used in future actions to support and revitalize endangered and declining species in the Danube Delta Biosphere Reserve;









MINISTERUL CERCETĂRII, INOVĂRII ȘI DIGITALIZĂRII
INSTITUTUL NAȚIONAL DE CERCETARE–DEZVOLTARE
„DELTA DUNĂRII”– TULCEA
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Denumirea proiectului:

Cercetări privind dezvoltarea și implementarea unor tehnologii de reproducere pretabile pentru speciile de pești periclitate sau în declin din Rezervația Biosferei Delta Dunării

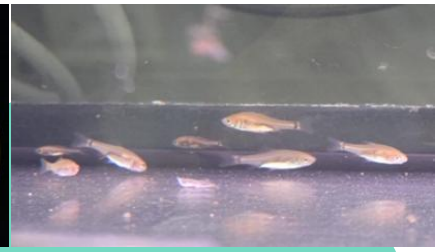
Program Nucleu„Delta Dunării 2030”, cod PN PN 23 13
Contract 35N/2023
Proiect PN 23 13 0202
Faza 23 13 02 02 08

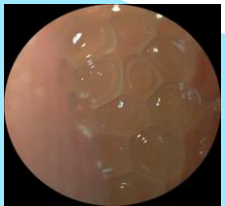
Tulcea Noiembrie, 2024

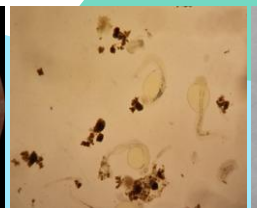
Targets and performance indicators - for 2024:

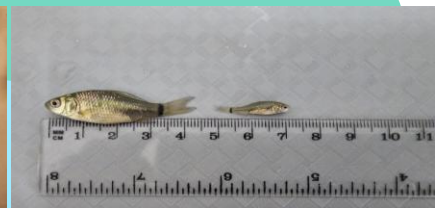
- Production and release of the first biological material produced for 2 endangered fish species with conservation value from the Danube Delta Biosphere Reserve
- Analysis of natural reproduction of Danube sturgeons

✓ Report on the analysis of the natural reproduction of Danube sturgeons - a support tool in identifying conservation solutions for critically endangered species









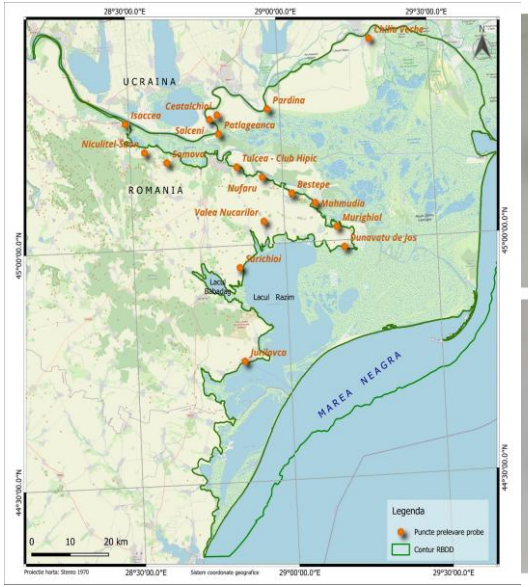
NP 6

Vector-borne diseases and epidemiological aspects in wild animal populations in deltaic ecosystems.

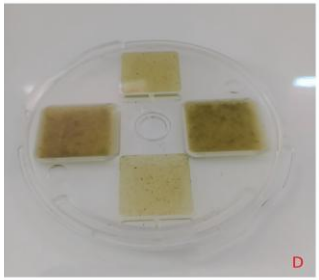
Implementation: 3 phases/year

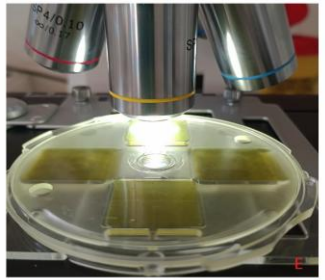
The project aims to assess the parasite load in certain regions in the vicinity of localities and assess the impact on animal and human populations in the context of ecological interactions specific to the Danube Delta. One of the main objectives is to study diseases that are not included in the national strategic program for control and prevention.

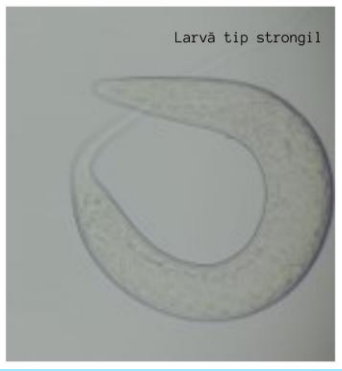
The purpose of the project - is to create norms and measures for the control and prevention of communicable diseases on pastures in the vicinity of localities in the Danube Delta and its surroundings. The description of the interactions of ecological factors in the deltaic biocenoses, as well as the impact on the animal and human population, represent data-instrument in epidemiological modeling.



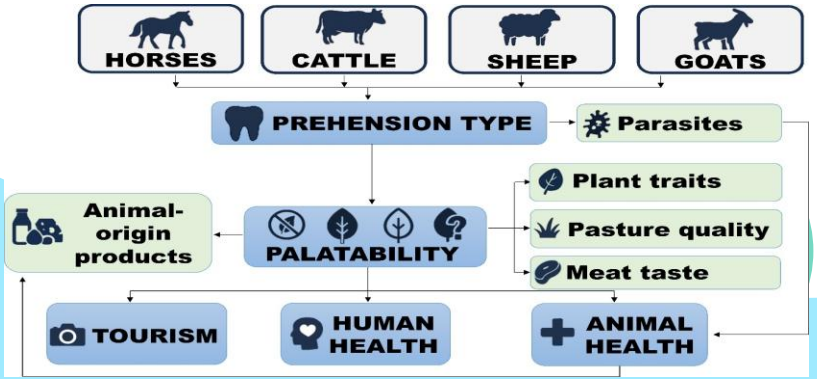
Laboratory determinations (Flotac method)







The relationship between prehension type, palatability and impact on human, animal health and tourism



Overall objective of the project:

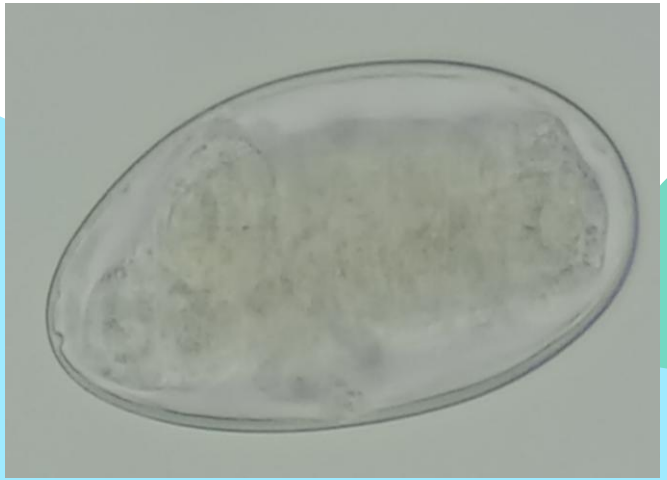
Database that can be used in epidemiological modelling through specialized programs in order to manage possible pandemics or epidemics on the territory of the Republic of Moldova and its surroundings.




Biological sample collection



Dermacentor reticulatus



Strongyloid egg

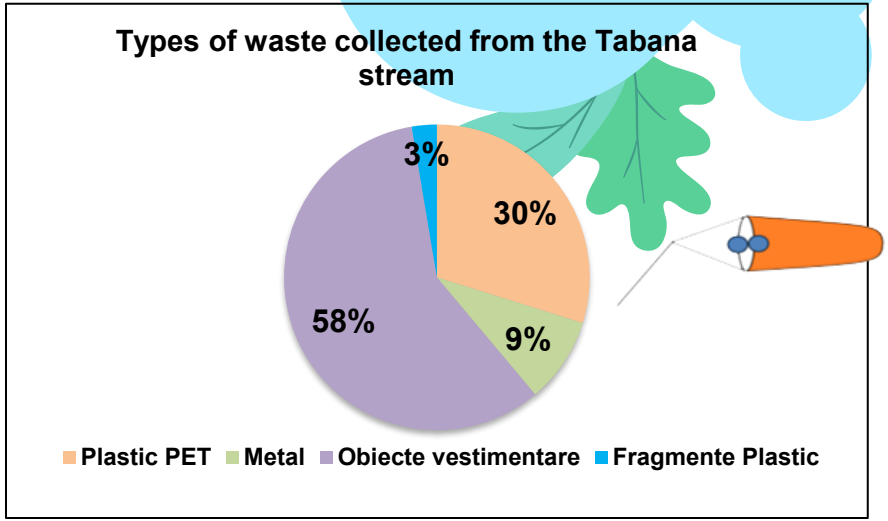
NP 7

Research on new classes of chemical contaminants resulting from the development of new generations of goods and products.

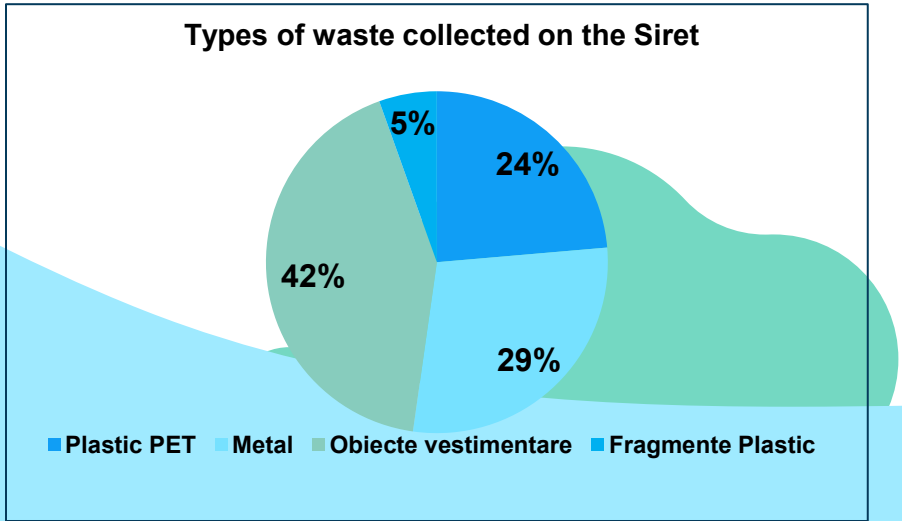
Implementation: 2 phases/year

Targets and performance indicators - for 2024:

- Designing an innovative device suitable for lentic aquatic ecosystems to reduce plastic load;
- Device construction and testing in a pilot station identified to be affected by micro/macroplastic contamination;



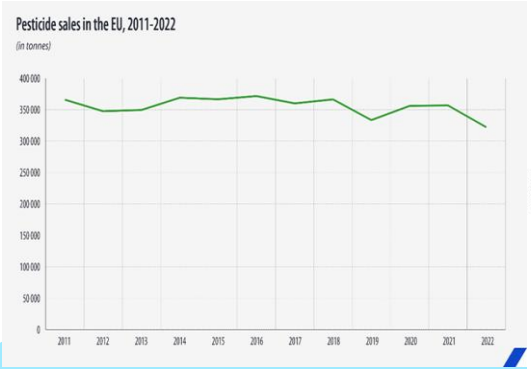
Device suitable for lentic aquatic ecosystems to reduce plastic load

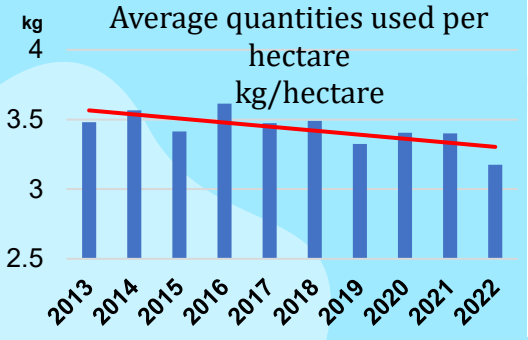


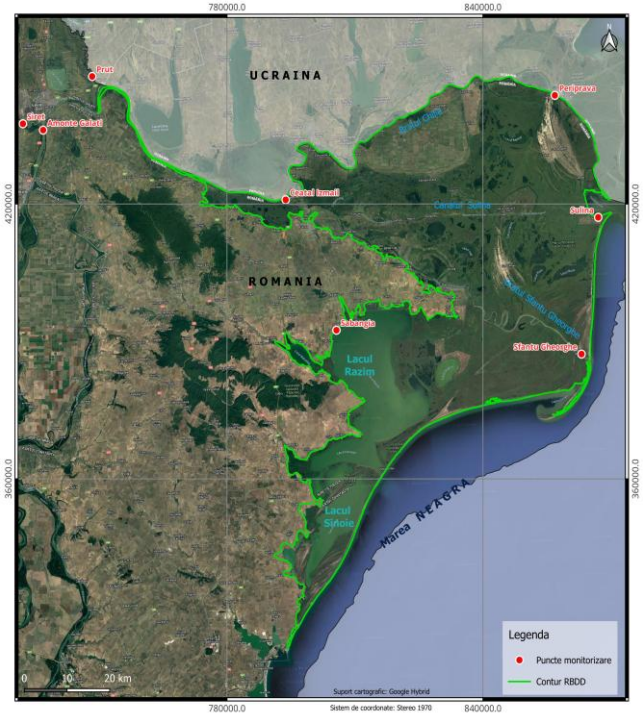
Targets and performance indicators - for 2024:

- Identification of highly toxic active compounds used in new generations of pesticides

Tons of pesticides used at European level 2011-2022







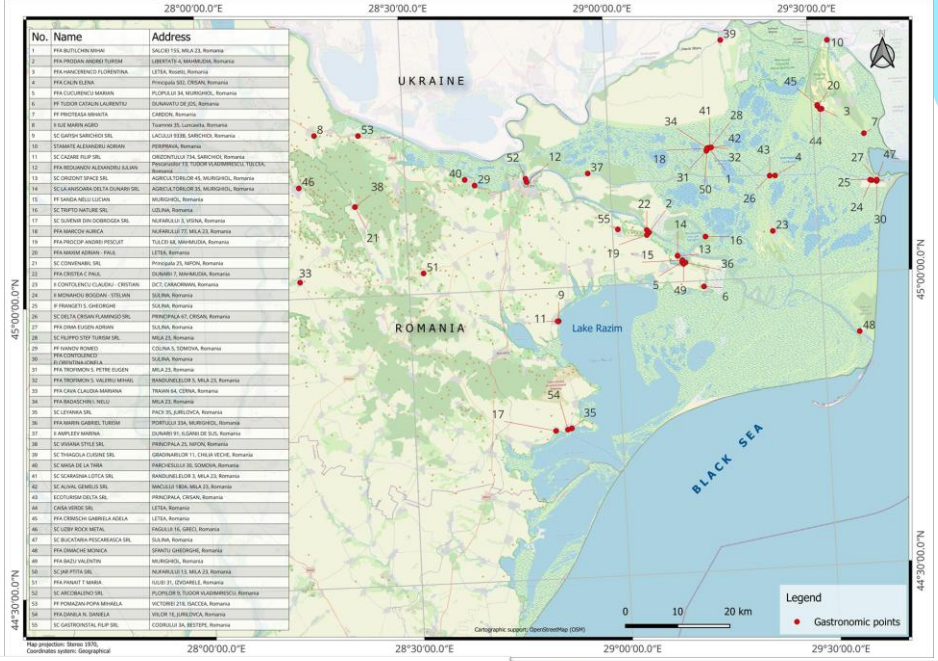
Tara	Fungicide și bactericide		Erbicide		Insecticide și acaricide		Moluscocide		Regulatori de creștere a plantelor		Alte produse	
	2011	2022	2011	2022	2011	2022	2011	2022	2011	2022	2011	2022
Italia	43574	29183	8327	4614	2494	38893	97	21	390	519	15443	6194
Turcia(1)	:	19413	:	13274	:	11975	:	276	:	1886	:	6051
Spania	31330	32094	13835	12186	8045	9618	(c)	(c)	(c)	(c)	19450	2138
Franța	24496	27933	29252	29913	2190	6291	331	330	2532	2064	2461	1343
Germania	10473	11521	17955	16812	11832	17045	255	134	3123	2419	219	238
Polonia	6081	7080	12408	12139	991	622	(c)	(c)	1593	1818	689	(c)
România	3455	3117	6771	4099	815	468	1	6	335	119	49	148
Bulgaria	(c)	1541	(c)	2513	(c)	312	:	(c)	(c)	13	:	(c)
Cehia	1627	1419	3473	2769	291	101	13	15	1183	890	462	348
Grecia	1700	1332	1449	1483	1095	749	8	2	21	167	1708	258
Croația	:	604	:	718	:	91	:	2	:	82	:	10
Cipru	895	693	170	160	159	83	2	1	3	2	6	71
Ungaria	(c)	2890	(c)	4618	(c)	571	(c)	2	(c)	143	(c)	355
Austria	1544	2427	1505	1237	248	2258	33	9	59	67	58	72
Slovenia	797	628	264	146	39	38	1	1	1	6	20	6
Slovacia	(c)	499	1080	1157	75	77	0	1	113	180	(c)	66

NP 8

Research on the natural, tourist, cultural and spiritual heritage of the Danube Delta Biosphere Reserve, in the context of sustainable development and global change. Problems, challenges, perspectives.

Implementation: 2 phases/year

General objective – through a multidisciplinary approach, the revitalization of the tourist, natural, cultural and spiritual heritage of the Danube Delta Biosphere Reserve is envisaged, an extremely important aspect considering that the Danube Delta is a Biosphere Reserve, a wetland where it is imperative to promote solutions that combine biodiversity conservation practices and methods with the development and sustainable exploitation of resources in the context of sustainable development and new global changes

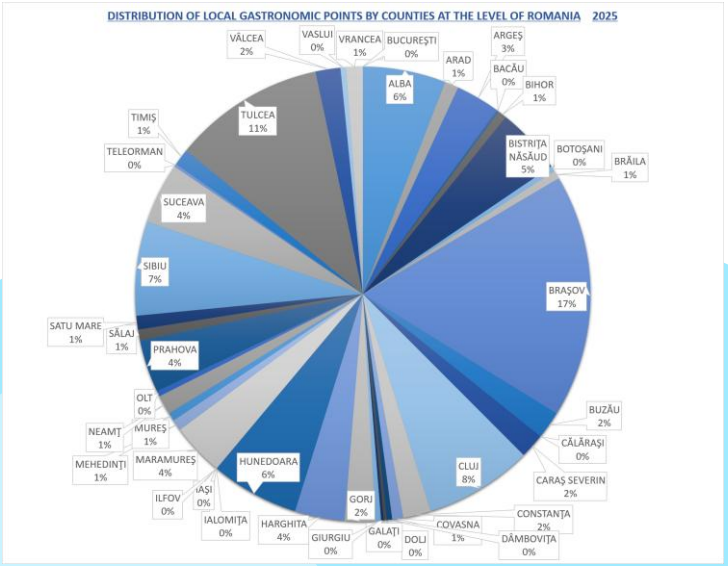


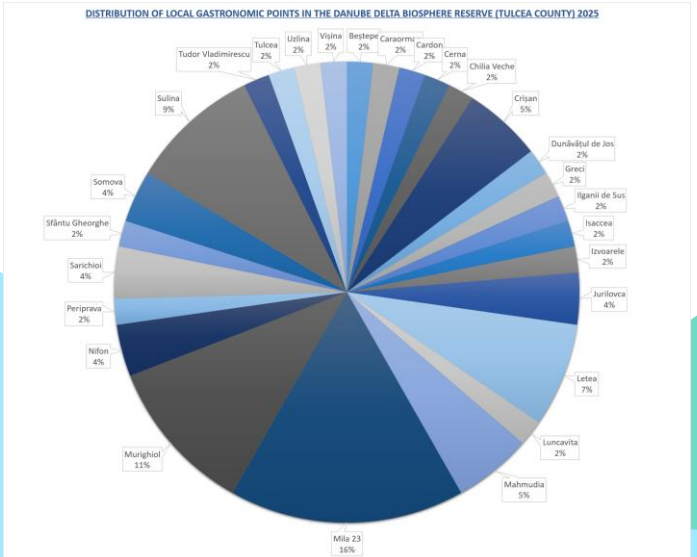
No.	Name	Address
1	PFA BUTLCHIN MIHAI	SALCIEI 155, MILA 23, Romania
2	PFA PRODAN ANDREI TUDOR	LIBERTATII 4, MAHMUDIA, Romania
3	PFA HANCERENCO FLORENTINA	LETEA, Rosetti, Romania
4	PFA CALIN ELENA	Principala 602, CRISAN, Romania
5	PFA CUCURENCU MARIAN	PLOPULUI 34, MURIGHIOL, Romania
6	PF TUDOR CATALIN LAURENTIU	DUNAVATU DE JOS, Romania
7	PF PROTEASA MIHAITA	CARDON, Romania
8	II ILIE MARIN AUDO	Tramvai 35, Lumcanta, Romania
9	SC GAITSH SARICHIOI SRL	LACULUI 933B, SARICHIOI, Romania
10	STAMATE ALEXANDRU ADRIAN	PERIPRAVA, Romania
11	SC CAZARE FILIP SRL	ORZONTULUI 754, SARICHIOI, Romania
12	PFA REGUNOV ALEXANDRU IULIAN	Principala nr 73, TUDOR VLADIMIRESCU, TELCEA, Romania
13	SC ORIZONT SPACE SRL	AGRICULTORILOR 45, MURIGHIOL, Romania
14	SC LILIANSOARA DELTA DUNARII SRL	AGRICULTORILOR 35, MURIGHIOL, Romania
15	PF SANDA NELU LUCIAN	MURIGHIOL, Romania
16	SC TRIPTO NATURE SRL	UZLINA, Romania
17	SC SUMINA DIN DOBROGEA SRL	NURAROLUI 3, VISINA, Romania
18	PFA MARCOV AURICA	NURAROLUI 77, MILA 23, Romania
19	PFA PROCOP ANDREI PESCUIT	TULCEI 68, MAHMUDIA, Romania
20	PFA MAXIM ADRIAN - PAUL	LETEA, Romania
21	SC CONFENARU SRL	Principala 25, MAHON, Romania
22	PFA CRISTEA C PAUL	DUNARII 7, MAHMUDIA, Romania
23	II CONTOLENCU CLAUDIU - CRISTIAN	DCT, CARAORMAN, Romania
24	II MONAHOU BOGDAN - STELIAN	SULINA, Romania
25	II* FRANGETI S. GHEORGHE	SULINA, Romania
26	SC DELTA CRISAN FLAMINGO SRL	PRINCIPALA 67, CRISAN, Romania
27	PFA DIMA EUGEN ADRIAN	SULINA, Romania
28	SC FILIPPO STEF TURISM SRL	MILA 23, Romania
29	PF IVANOV ROMEO	COSUNA 5, SOMOVA, Romania
30	PFA CONTOLENCO	SULINA, Romania
31	PFA TROFIMOV S. PETRE EUGEN	MILA 23, Romania
32	PFA TROFIMOV S. VALERIU MIHAIL	RAIDUNELEOR 5, MILA 23, Romania
33	PFA CAVA CLAUDIA-MARIANA	TRAIAN 64, CERNA, Romania
34	PFA BADASCHIN I. NELU	MILA 23, Romania
35	SC LEVANKA SRL	PACII 35, JURILOVCA, Romania
36	PFA MARIN GABRIEL TURISM	PORTULUI 334, MURIGHIOL, Romania
37	II AMPLEEV MARINA	DUNARII 97, SLOBNII DE SUS, Romania
38	SC VIVANA STYLE SRL	PRINCIPALA 25, MAHON, Romania
39	SC THAGOLA CUISINE SRL	GRADINARILOR 11, CHILIA VECHE, Romania
40	SC MASA DE LA TARA	PARCHESULUI 30, SOMOVA, Romania
41	SC SCARAGNA-LOTCA SRL	RAIDUNELEOR 3, MILA 23, Romania
42	SC ALVAL GEMELO SRL	MACILULUI 18/A, MILA 23, Romania
43	ECOTURISM DELTA SRL	PRINCIPALA, CRISAN, Romania
44	CASA VERDE SRL	LETEA, Romania
45	PFA CREMSCHI GABRIELA ADELA	LETEA, Romania
46	SC LUDY ROCK METAL	PAGULUI 56, GRECI, Romania
47	SC BUCATARIA PESCAREASCA SRL	SULINA, Romania
48	PFA DIMACHE MONICA	SFANTU GHEORGHE, Romania
49	PFA BAZU VALENTIN	MURIGHIOL, Romania
50	SC DNP PITA SRL	NURAROLUI 13, MILA 23, Romania
51	PFA PANAIT T MARIA	IULIUS 31, IZVOARELE, Romania
52	SC ARCOBALENO SRL	PLOPILOR 9, TUDOR VLADIMIRESCU, Romania
53	PF POMAZAN-POPA MIHAELA	VICTORIEI 218, ISACCEA, Romania
54	PFA DANILA N. DANIELA	VALCAN 16, JURILOVCA, Romania
55	SC GASTRONISTIAL FILIP SRL	COSIRULUI 3A, BESTEPE, Romania

Map of local gastronomic points in DDBR and nearby areas

Results obtained - 2024:

- Research on the role of Local Gastronomic Points in the Danube Delta Biosphere Reserve in promoting cultural identity, preserving culinary traditions, supporting the local economy and strengthening a sustainable tourism model. Local Gastronomic Points are structures that contribute not only to the valorisation of culinary traditions specific to the area, but also to maintaining the balance between human activities and biodiversity conservation, by integrating the principles of sustainable development into the regional tourism offer.





NP 9

Research on the evaluation and analysis of the clogging rate of channels subjected to engineering interventions to improve hydrological conditions on the territory of the Danube Delta Biosphere Reserve.

Implementation: 2 phases/year

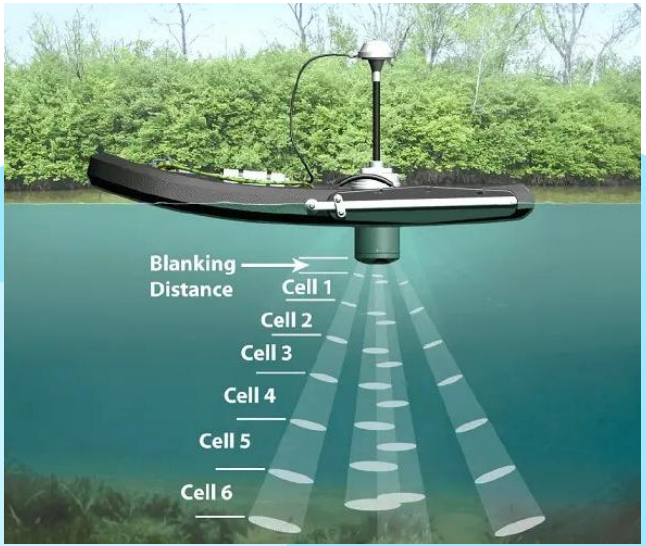
The main objective – assessment and analysis of the clogging rate of the channels subject to engineering interventions to improve hydrological conditions on the territory of the Danube Delta Biosphere Reserve in order to develop clogging scenarios. The scenarios illustrate the clogging rate of the analyzed channels through maps that will be produced in specialized programs.

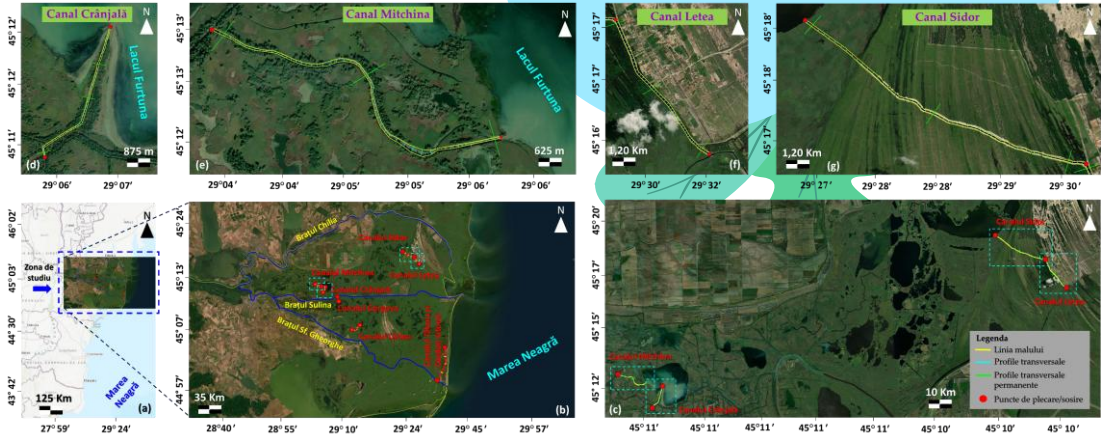
Phase III: Analysis of the clogging rate

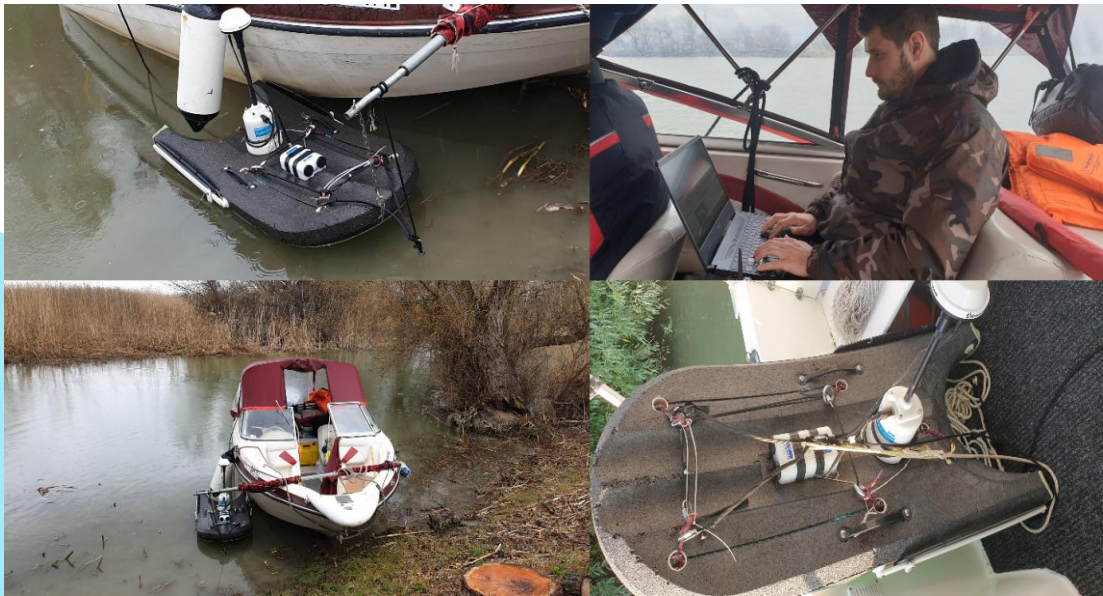
- Spring season: high Danube levels;

Phase IV: Analysis of the clogging rate

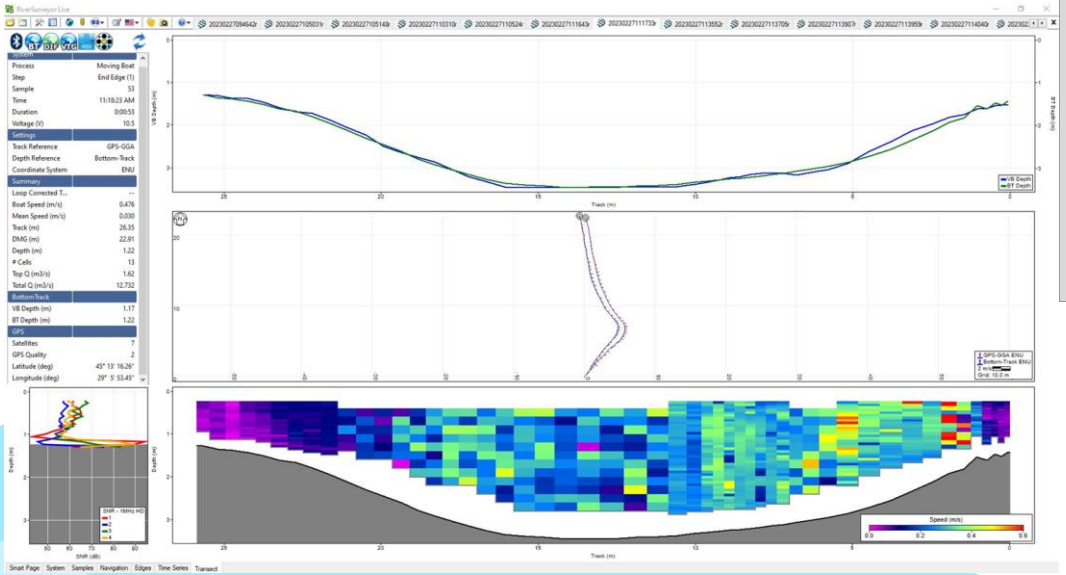
- Autumn season: low Danube levels.



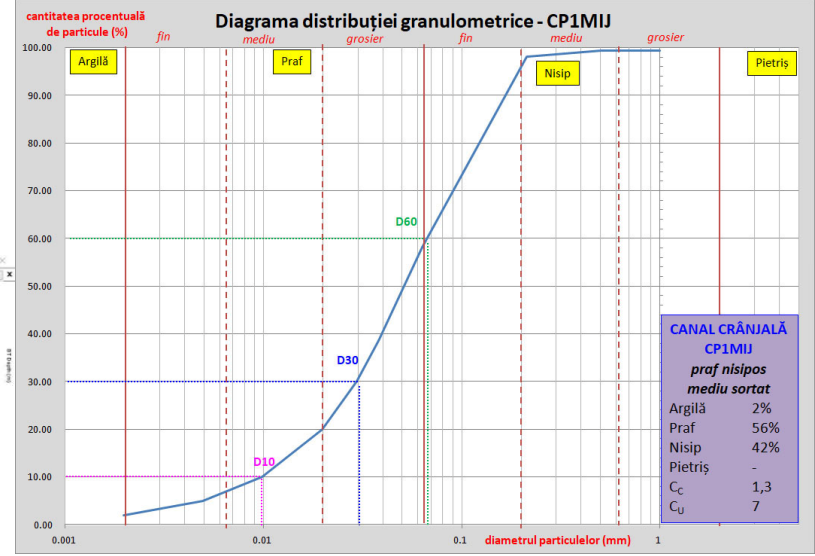




The targeted channels: Mitchina Channel, Crânjala Channel, Letea Channel, Sidor Channel, Uzlina Channel, Gorgova Channel and Cordon Litoral Channel



Section 1 created with the RIVER SURVEYOR ADCP profile trajectory, measured parameters (total flow, boat speed, average speed, measured distance, channel depth)



Granulometric curve for the substrate sample from profile 1 (2024, Spring at high water)

Complete results of the granulometric analyses for the studied Channels

Locație	Denumire Probă	Conținut argilă (%)	Conținut praf (%)	Conținut nisip (%)	Conținut pietriș (%)	Coeficient de curbură (C_c)	Coeficient de uniformitate (C_u)	Granulometrie
NIVELURI RIDICATE ALE APEI								
CANAL CRÂNJALĂ	CP1MIJ	2	56	42	-	1,3	7	praf nisipos mediu sortat
	CP2MIJ	2	46	52	-	1,1	8	praf nisipos mediu sortat
	CP3MIJ	2	62	36	-	1,4	6,7	praf nisipos mediu sortat
CANAL MITCHINA	MP1MIJ	4	82	14	-	1,5	6	praf mediu sortat
	MP2MIJ	2	46	52	-	1,1	7,8	praf nisipos mediu sortat
	MP3MIJ	3,5	82	14,5	-	1,5	6	praf mediu sortat
CANAL LETEA	LP1MIJ	2	25	73	-	1,7	6,6	nisip prăfos mediu sortat
	LP2MIJ	<1	14	85	-	1,9	5,5	nisip fin slab sortat
	LP3MIJ	<1	9	90	-	1	2,3	nisip fin uniform sortat
CANAL SIDOR	SP1MIJ	<0,5	<0.5	97	2,5	1	2,3	nisip fin-mediu uniform sortat
	SP2MIJ	±0	1,5	92,5	6	1	3,5	nisip mediu-fin slab sortat
	SP3MIJ	±0	<2	92.5	5,5	1,3	3,3	nisip mediu-fin slab sortat
NIVELURI SCĂZUTE ALE APEI								
CANAL CRÂNJALĂ	CP1MIJ2	2	24	74	-	1,5	5,7	nisip prăfos slab sortat
	CP2MIJ2	2	45	53	-	0,9	8,8	praf nisipos mediu sortat
	CP3MIJ2	2	42	56	-	1,2	6,5	praf nisipos mediu sortat
CANAL MITCHINA	MP1MIJ2	2	49	49	-	1,3	6,8	praf nisipos mediu sortat
	MP2MIJ2	5	81	14	-	1,5	6	praf mediu sortat
	MP3MIJ2	4	82	14	-	1,5	6	praf mediu sortat
CANAL LETEA	LP1MIJ2	<1	12	87	-	1,1	2,8	nisip fin uniform sortat
	LP2MIJ2	2	17	81	-	1,6	4,9	nisip prăfos slab sortat
	LP3MIJ2	<0.5	5	95	-	1	2,1	nisip fin uniform sortat
CANAL SIDOR	SP1MIJ2	<1	6	93	-	1	2,3	nisip fin-mediu uniform sortat
	SP2MIJ2	±0	1,5	96,5	2	0,9	3,1	nisip fin-mediu slab sortat
	SP3MIJ2	<1	4	95	-	1,5	3,7	nisip fin-mediu slab sortat

NP 10

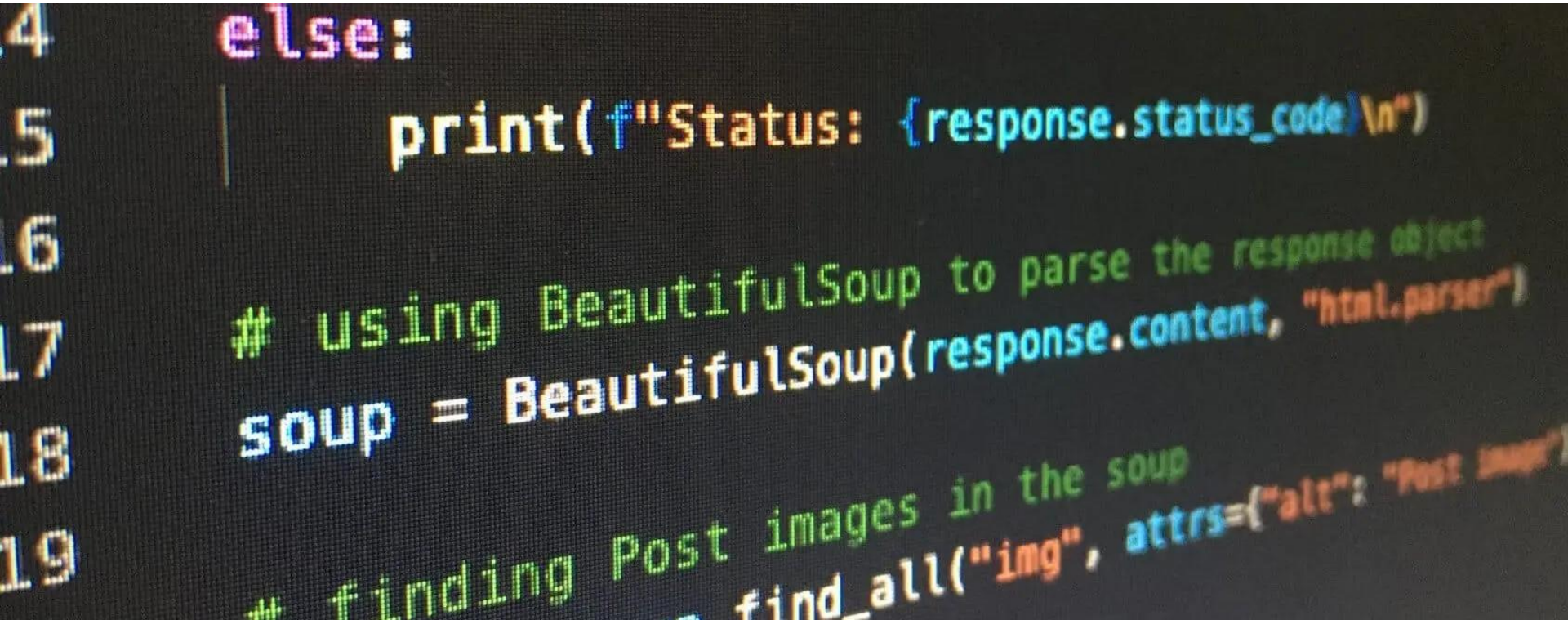
Research on the digitalization of the monitoring process of specific elements in the Danube Delta Biosphere Reserve.

Implementation: 3 phases/year

The overall objective: Objective 4 - Information management in biodiversity research, ecological restoration and sustainable development in the Danube Delta Biosphere Reserve as established in the Core Program proposal.

The specific objectives:

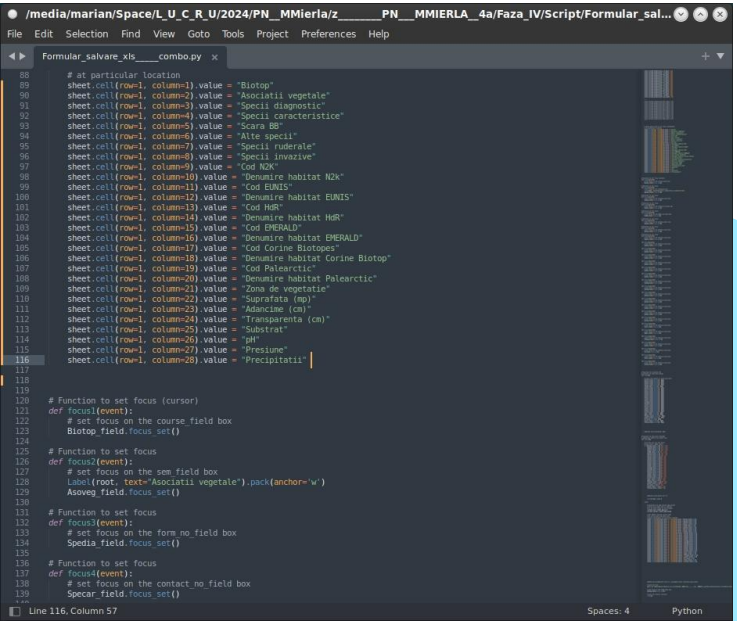
- development of a mobile software application for entering data about habitat:
- development of a mobile software application for entering data about plant;
- development of a mobile software application for entering data about fish;
- development of a mobile software application for entering data about mammals;
- development of a mobile software application for entering data about insects.

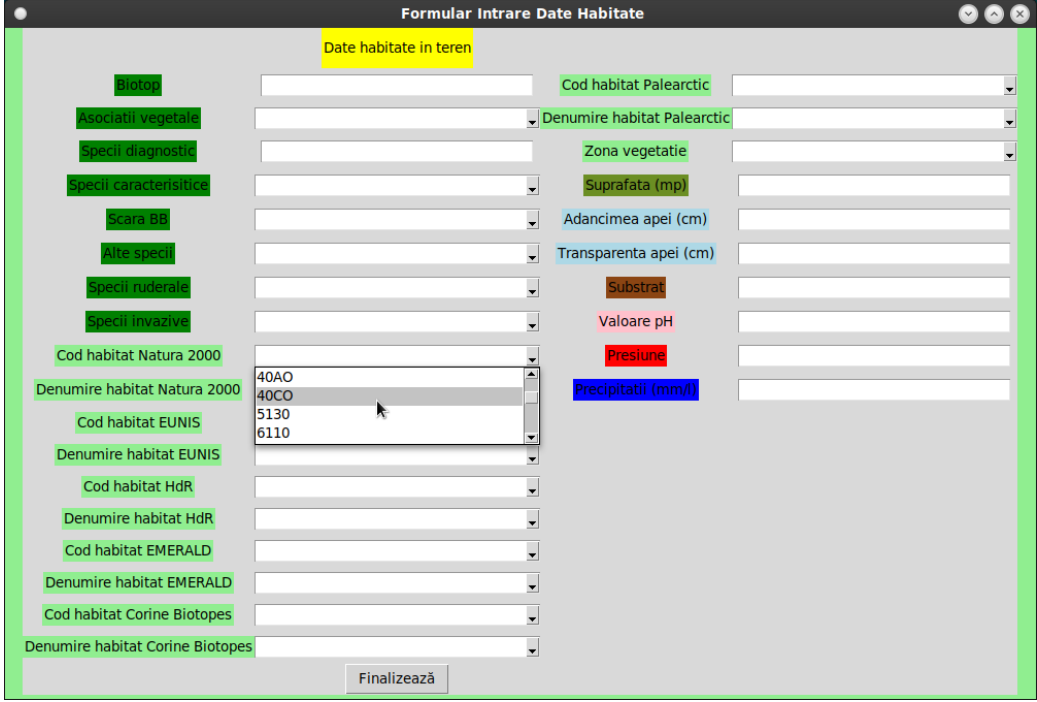


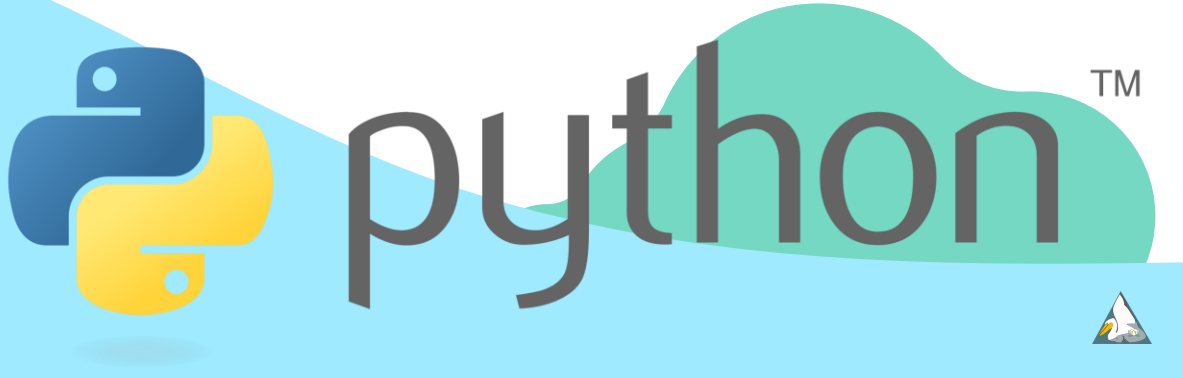
Taking field information into digital format is part of information management in biodiversity research, in that the numerous data will be stored in a standardized digital format, easy to access and manage.

The partial result consists of creating a characteristic digital form with fields of interest for the habitat specialist who will go and collect data in the field. This electronic form is almost complete, it can very easily be developed in the near future to complete the application with all the required data.

The application can still be improved to reach the maximum level of design and functionality.







PERFORMANCE INDICATORS

8 ISI / 11 BDI
Scientific papers

1 chapter
Books / book chapters

13
Scientific communications

18
Relevant studies at national/field level

1
PhD thesis

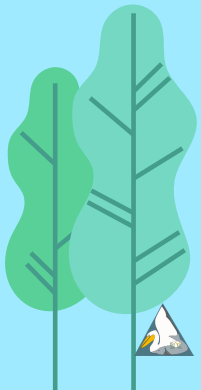
7 Databases
IT products

2 Map Sets
Maps

3
Plans

2
Scheme

19 Datasets
Databases



ANNUAL AGENDA

Congress

Round tables

Seminars

4 DELTA

Scientific Symposium 4 DELTA (launched in 2017)

Deltas & Wetlands

International Scientific Symposium (launched in 1992)

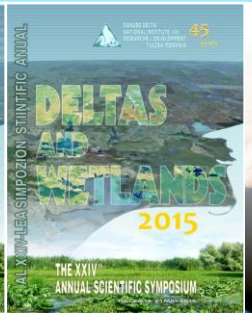
Scientific communications

Scientific communication sessions (launched in 2012)

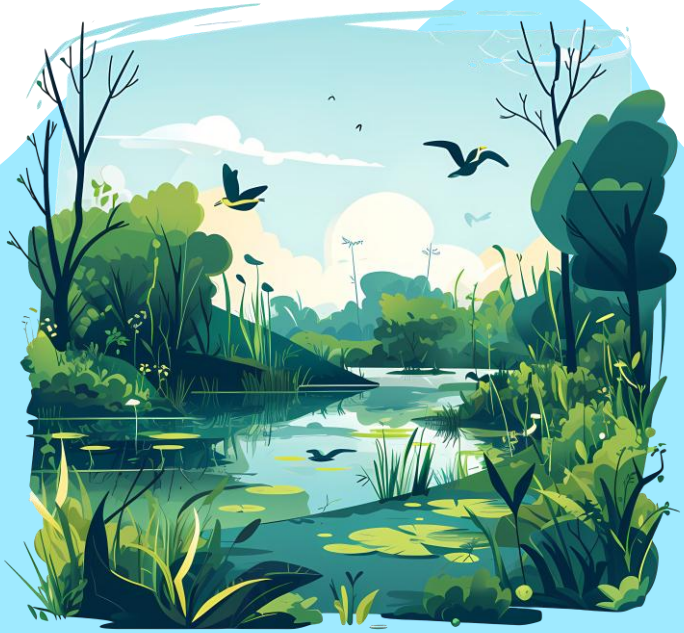
Exhibition

Multimedia presentations

Tele-Conference



DANUBE DELTA NATIONAL INSTITUTE FOR RESEARCH AND DEVELOPMENT - TULCEA



Thank you!

Do you have any questions?

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