



Bayerisches Staatsministerium für
Umwelt und Verbraucherschutz



Implementation of the DIAS strategy – main results since 2014 and future activities of DIAS

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Invasive alien species in the Danube Region – IAS of regional
concern, 4–5 March 2026, Tata, Hungary



Overview

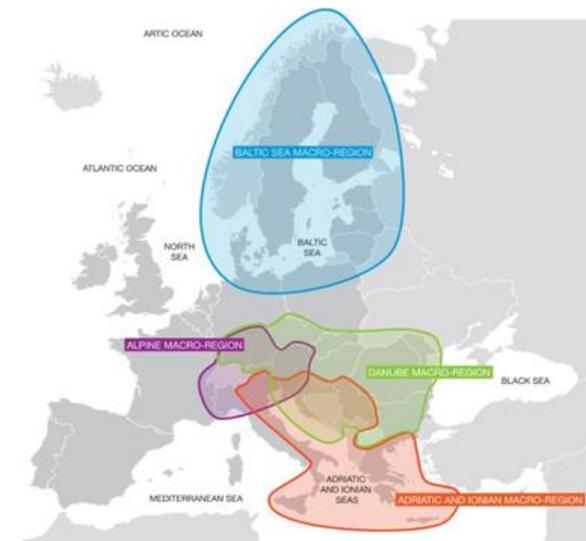
1. EUSDR Priority Area 06 – Preserving biodiversity, landscapes and the quality of air and soil
2. Danube Region Invasive Alien Species Network (DIAS) Task Force – establishment, mission, structure
3. DIAS strategy and work plan
4. DIAS activities
 - 4.1. Networking and cooperation
 - 4.2. Projects
 - 4.3. Main contributions
5. DIAS next steps and forthcoming events



1. EUSDR Priority Area 06 – Preserving biodiversity, landscapes and the quality of air and soil

EUSDR at a glance

- The EU Strategy for the Danube Region (EUSDR) is a macro-regional strategy (MRS) adopted by the European Commission in December 2010 and endorsed by the European Council in 2011. 14 Countries participating.
- Further MRS: Baltic Sea, Adriatic-Ionian Region, Alpine Region
- EU macro-regional strategies (“MRS”) are political frameworks initiated by EU and non-EU countries located in a defined geographical area. These frameworks address common challenges and opportunities through setting shared, long-term objectives.
- MRS address issues requiring several countries to cooperate based on a cross-sectoral and multi-level governance approach. The MRS sharpen the identity of their areas while increasing responsibility and active involvement of citizens.
- The EUSDR seeks to create synergies and coordination between existing policies and initiatives taking place across the Danube Region.
- The Strategy is not about funding, it is about cooperation!



<https://ec.europa.eu/newsroom/regio/items/610870/en>



Map source: <https://danube-region.eu/content/uploads/Maps/EUSDR-Map-scaled.png>

The Danube Region

14 Countries
more than 110 Mio. inhabitants.

The EU Strategy for the Danube Region (EUSDR) refers to the entire Danube Region and addresses four thematic pillars:

1. Connecting the Region
2. Protecting the Environment
3. Building Prosperity
4. Strengthening the Region

„Macro-regional Strategy“ (MRS) for cooperation in common and region-specific thematic fields

EU Strategy for the Danube Region

Four Pillars – 11 Priority Areas



Coordination of implementation by (at least) two **Priority Area Coordinators (PACs)** from two countries for each of the Priority Areas.

Graphic by www.danube-region.eu

EUSDR - Priority Area 06 of the EUSDR at a glance

- Coordinated by Germany (Bavaria) and Croatia, both acting as Priority Area Coordinator (PAC)
- Thematic focus: Biodiversity, Landscapes, Air and Soils
- Steering Group with representatives from line ministries of all Danube States
- Highly stakeholder-driven, based on 6 Task Forces



EUSDR PA6 - Targets from Action Plan

PA 06 Target	Related Topic	Focus	Associated Task Force
T1: Improve management of Natura 2000 sites and other protected areas through transnational cooperation and capacity building	Biodiversity	Management of protected areas	Danubeparks Masterplan Bavarian Danube
T2: Strengthen the efforts to halt the deterioration in the status of species (e.g. Danube sturgeon species) and habitats occurring in the Danube region and covered by EU nature legislation.	Biodiversity	Endangered umbrella species	Danube Sturgeon Task Force (DSTF) Danubeparks
T3: Reduce the introductions and spread of Invasive Alien Species (IAS) in the Danube Region	Biodiversity	IAS as serious threats	Danube Region Invasive Alien Species Network (DIAS)
T4: Maintain and restore Green and Blue Infrastructure elements through integrated spatial development and conservation planning	Landscapes Ecological Connectivity	green and blue infrastructure and integrated spatial planning	Danubeparks Masterplan Bavarian Danube Danube Landscapes Task Force
T5: To improve and/or maintain the soil quality in the Danube Region	Soil	Soil-related ecosystem services, sustainable development	SONDAR
T6: To decrease air pollution in the Danube Region	Air	Air pollution in the region	Task Force Air Quality (TFAQ)

Task Forces of Priority Area 06

- Task Forces are the implementation level of PA 06 and formally linked to governance of PA 06 / EUSDR. They are open and have a transnational focus on the Danube Region.
- Task Forces comprise actors from Civil Society (NGOs, Stakeholders), Academia and Public Authorities. Different viewpoints on the specific topic.
- International composition, around 20-40 members of single Task Forces
- Establishment of strategies and work plans, out of which specific measures are derived and implemented through projects.
- Task Force chairs are Observers of the PA 06 Steering Group and report regularly of their activities to Steering Group.



Task Forces of Priority Area 06

Established	Objectives	Chair
Danube Sturgeon Task Force (DSTF) www.dstf.info		
2012	Sturgeon Conservation in the Danube River; Reintroduction and protection of Danube sturgeon species, implementation of the own strategy "Sturgeon 2020"	Independent Expert, formerly of DG ENV (BE)
Danube Region Invasive Alien Species Network (DIAS)		
2014	Strategy for Monitoring and eradication of aquatic IAS	Institute of Biodiversity and Ecosystem Research, Bulgarian Academy of Sciences (BG)
Danubeparks - Network of protected areas (Danubeparks) www.Danubeparks.eu		
2011	Network of protected areas along the Danube; Ecological connectivity	DANUBEPARKS secretariat in Croatia Kopačevo (HR)
Soil Strategy Network in the Danube Region (SONDAR)		
2011-2012	Soil protection network in the Danube region, linked to ELSA (European Land and Soil Alliance)	Government of Lower Austria (AT)

Task Forces of Priority Area 06

Established	Objectives	Chair
Working Group Masterplan Bavarian Danube (WGMPD)		
2012	Concept and projects to preserve and strengthen biodiversity along the Bavarian Danube	Landratsamt Neuburg-Schrobenhausen, Bund Naturschutz Bayern and Landesbund für Vogelschutz, Bavaria) (DE)
Danube Landscape Task Force (DL:TF)		
2021	Sustainable development of cultural landscapes in the Danube Region	Independent Landscape Planner (AT) and Department of Biology and Ecology, University of Novi Sad (SRB)



Certificate

DANUBE STRATEGY FLAGSHIP

This certificate is proudly awarded to

Priority Area 6 Task Forces – Stakeholder Involvement, multi-level governance, joint implementation

Danube Strategy Flagships are projects or processes that contribute to the implementation of the EU Strategy for the Danube Region (EUSDR), have a clear macro-regional dimension and a multi-level governance approach. They are of high importance for the Danube Region's economic, social and territorial cohesion and for improving the quality of life in the Danube Region.

Danube Strategy Flagships strengthen internal and external communication of the Strategy and the visibility of the topics, initiatives and prospects in the Danube Region. They illustrate the progress achieved in implementing the EUSDR and demonstrate exemplarily significant improvement in the Region that is induced by cooperation.

EUSDR National Coordinators and Priority Area Coordinators with the respective Steering Groups, in their capacity as representatives and key implementers of the EUSDR, as well as the Danube Strategy Point, are committed to contribute to and promote Danube Strategy Flagships in accordance with the Guidance Paper for identifying and listing Danube Strategy Flagships.

Date: 14 September 2022



EUSDR Priority Area(s): PA 6 Biodiversity, Landscapes and Air
& Soil Quality



2. DIAS Task Force – establishment, mission, structure



Danube Region Invasive Alien Species Network (DIAS) Kick-Off Meeting

9-10 October 2014, Sofia, Bulgaria

To facilitate the transnational and international communication and cooperation on issues related to invasive alien species in the Danube Region





Budapest, 2015, 2016, 3 March 2026



Sofia, 2016

Interreg Programme
Danube Region



Co-funded by
the European Union



Sofia, 2018

Meeting in Virtual format, 2023



DIAS Mission statement

DIAS promotes an improved coordination among all actors in the thematic field of invasive alien species within the Danube Region. Politically independent, it brings together scientists, authorities and stakeholders and

- Supports sharing of knowledge,
- Formulates a strategy and work plan to efficiently tackle the issue of IAS in the Danube Region,
- Considers and cooperates with existing European and global IAS networks and organisations,
- Develops individual but coordinated projects in the single regions and
- Promotes the transfer of knowhow and expertise to actors on all administrative levels

in a transnational context in order to contribute to a sustainable and liveable future of the Danube Region.



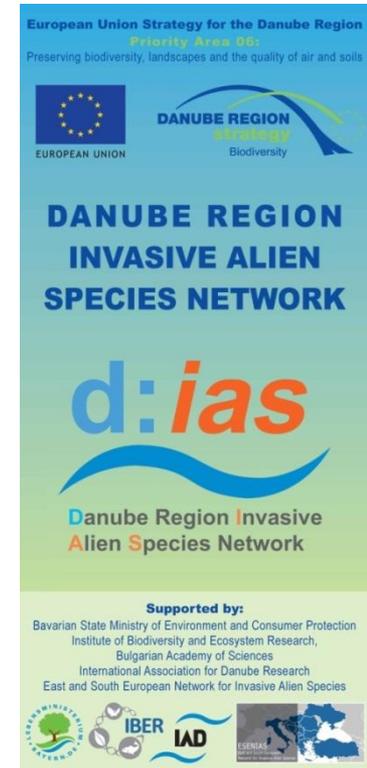
Regional structure



Upper Danube River - Germany, Austria

Middle Danube River - Czech Republic, Slovak Republic, Hungary, Slovenia, Croatia, Bosnia and Herzegovina, Montenegro

Lower Danube River - Serbia, Bulgaria, Romania, R. Moldova, Ukraine, Türkiye and the adjacent Black Sea Region



3. DIAS Strategy and Work plan

Danube Region Invasive Alien Species Strategy

to prevent and manage risks from IAS in the Danube Region

Aim

The Strategy promotes co-ordinated actions and joint efforts of authorities, scientists and stakeholders at the national and multinational level in order to prevent and control the introduction and spread of IAS and reduce their impact on biodiversity, ecosystem services, human health and economy in the Danube Region.

Timeframe

The strategic aims should be achieved until 2030.

DIAS Strategy scope

The scope of the co-operation is set on different levels to match the complexity of the topic/diversity of taxonomic and ecological groups, and heterogeneity of the region. The Strategy covers:

- The Danube Region and the adjacent region of the Black Sea, focussing on the main channel, the adjacent standing water bodies (lakes, marshes, canal systems, cut side arms, temporary waters), the Danube Delta and selected pilot river basins
- Aquatic and terrestrial environments
- Alien and translocated species
- All taxonomic groups (plants, fungi, animals, microorganisms)

DIAS Strategy structure and contents

Key topic 1: IAS - Species and interactions/impact in the DRB

Key topic 2. Pathways of introduction and spread in the DRB

Key topic 3. Information system and knowledge dissemination

Key topic 4. Risk assessment and prioritisation

Key topic 5. Early detection and rapid eradication

Key topic 6. Management of established IAS and restoration

Key topic 7. Awareness raising, communication and policy

Each key topic is defined by:

- Rationale
- Aims
- Key actions (measures and recommendations)
- Region-specific requirements
- Relevant actors
- Links to EUSDR priority areas

4. DIAS Activities

4.1. Networking and cooperation

European Commission's JRC and European Alien Species Information Network (EASIN)

International Commission for the Protection of the Danube River (ICPDR)

International Association for Danube Research (IAD) Expert Group 'Invasive Alien Species' (2017)

East and South European Network for Invasive Alien Species (ESENIAS)



4.2. Projects



ESENIAS-TOOLS

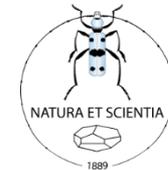
East and South European Network for Invasive Alien Species – A tool to support the management of alien species in Bulgaria (2015-2017)

Funding: Financial Mechanism of the European Economic Area 2009-2014

Participants: 11 partners from Bulgaria, Greece, Croatia, Serbia, Romania, Türkiye, Iceland, FYR Macedonia

Aim: Networking and development of IAS tools within the frame of ESENIAS to support the management of alien species in Bulgaria and in the region

Task: Collaboration and joint activities with DIAS



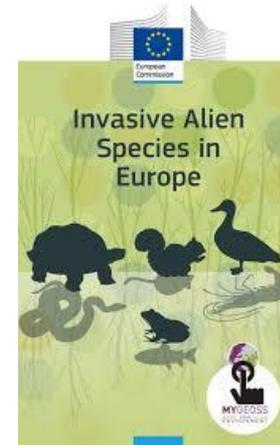
Danube – IAS Corridor

Potential threats to environmental and economic sustainability in the Danube and Black Sea Region: Danube River as invasive alien species corridor; within the frame of IAD, ESENIAS, PA 06 EUSDR (2012 – ongoing)

Partners: IBER-BAS, Bulgarian Academy of Sciences (leading partner), DIAS participants

Project objectives:

- To collect data on alien and IAS and the pathways of their introduction and spread in the Danube Region, and
- To develop and apply transnational actions and tools to prevent, reduce and manage the risk from alien and IAS in the Danube Region



Danube-IASapp

Pilot-study (data collection) on invasive alien species in the Danube Region with a smartphone application developed by the JRC (2016–2017)

Funding: EC JRC

Participants: Bulgaria, Romania, Serbia

Aim: To test and validate the application of the **Invasive Alien Species in Europe app** in the Danube Region



The results of this project contributed to the improvement of some functionalities, the process of data validation, and update of the smartphone app for the Danube Region





COST Action CA17122 Increasing understanding of alien species through citizen science (2018–2022)

State and perspectives of citizen science for invasive alien species in Bulgaria (2019–2022)

University of Forestry – Sofia

Increasing understanding of alien species (AS) through citizen science' (Alien CSI): Approaches to citizen science, data management and standards in Bulgaria (2019–2022)

Institute of Biodiversity and Ecosystem Research, Bulgarian Academy of Sciences

Funding: National Science Fund of Bulgaria





Funded by
the European Union



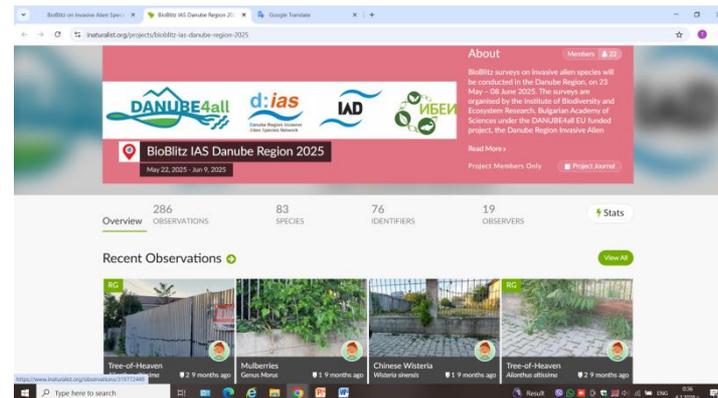
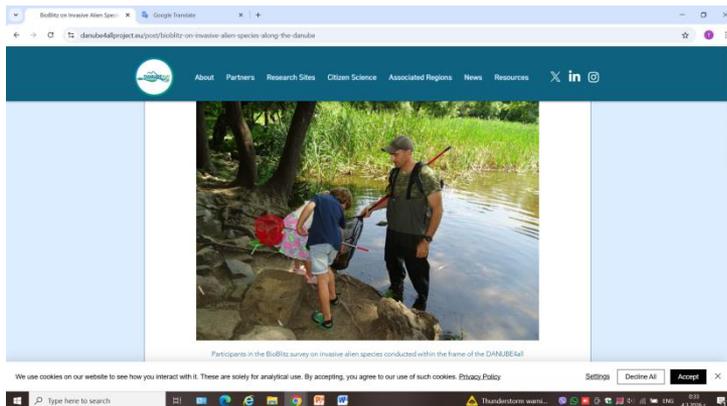
DANUBE4all

Restoration of the Danube River Basin waters for ecosystems and people from mountains to coast (2023–2027)

Funding: EU Horizon Europe Research and Innovation Programme, Grant agreement no. 101093985

Project coordination: BOKU University of Natural Resources and Life Sciences, Vienna, Austria

WPs tasks: Review of IAS of Danube River Basin concern; IAS monitoring and citizen science





Project POIM2014 + 120008 – Appropriate management of invasive species in Romania, in accordance with EU Regulation 1143/2014 on the prevention and management of the introduction and spread of invasive alien species (2018–2022)

<https://invazive.ccmesi.ro/>

Strengthening the national management system of invasive alien species in Romania – new steps forward to implement EU requirements, Cod SMIS 337191 (started in 2026)

Coordination: Ministry of Environment, Water and Forests of Romania through the Biodiversity Directorate (coordinator) and the University of Bucharest (partner)

General aim: To develop the scientific and administrative tools necessary for the effective management of invasive species in Romania





МИНИСТЕРСТВО
НА ОБРАЗОВАНИЕТО
И НАУКАТА

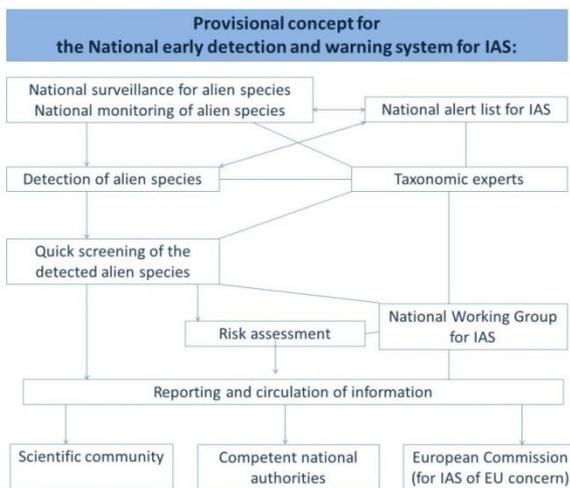


ННП „ОПАЗВАНЕ НА ОКОЛНАТА СРЕДА И НАМАЛЯВАНЕ НА РИСКА
ОТ НЕБЛАГОПРИЯТНИ ЯВЛЕНИЯ И ПРИРОДНИ БЕДСТВИЯ“



National Science Programme ‘Protecting the environment and reducing the risk of adverse events and natural disasters’, Working Programme I.7. Biodiversity, ecosystem functions and quality of living environment, Task 4. Development of national system for early detection and warning of invasive alien species (2018–2022)

Funding: Ministry of Education and Science of Bulgaria



Monitoring of distribution of the invasive alien species of Union concern in Bulgaria, Contract No. 4561/01.03.2024 (2024–2026)

Funding: Environment Executive Agency of Bulgaria

Results: 19 methods and protocols for monitoring and assessment of impact of IAS of Union concern in Bulgaria were developed. More than 1000 sites were monitored and new data on plant and animal IAS have been collected.



4.3. DIAS Main contributions



- **Data collection and development of the list of IAS of the Danube River Basin (DRB) concern**

- Recent review of IAS in the DRB and Western Black Sea Coast (Trichkova et al. 2025)
 - Guidance document on IAS relevant to the DRB, including a black list of IAS and tools for risk assessment and evaluation of impact (Paunović & Csányi 2018)
 - Results of JDS4 (2019) and JDS5 (2025)
 - Extended list with IAS of concern to the DRB for the update of the smartphone application 'Invasive Alien Species in Europe' developed in collaboration with EC JRC and ICPDR – 64 aquatic species (29 fish and 44 invertebrates) (Trichkova et al. 2021)
 - Recent scientific reports and project results

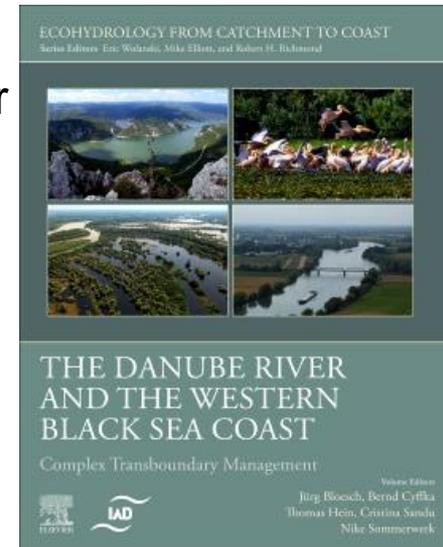


Review of aquatic IAS in the DRB and Western Black Sea Coast (WBSC), including species lists, time of introduction, pathways of introduction and spread, impact, and management options.



Scope:

- Alien freshwater species to Europe introduced to the DRB
- Ponto-Caspian species – native to the Lower Danube River and Black Sea Basins, but introduced by human assistance to Middle and Upper DRB in Western Europe
- Excludes all other translocated species
- Invertebrates and fish (freshwater); representatives of all taxonomic groups (marine)
- Established IAS of highest concern to the DRB
- Some IAS from the alert list
- IAS occurring in the main channel of the Danube River (Upper, Middle and Lower Danube sections), Danube Delta, main Danube tributaries, canal systems, and adjacent lakes and marshes



48 Freshwater IAS

- 32 Invertebrates (the highest number of species – Decapoda and Mollusca)
- 16 fish species (the highest number – Cyprinidae)

36 IAS of Ponto-Caspian origin

- 30 Invertebrates
- 6 fish species (Gobiidae)

219 Marine IAS in the Western Black Sea Coast

- Fungi, algae, invertebrates, fish

156 – Ukraine

83 – Romania

80 – Bulgaria



Asian date mussel *Arcuatula senhousia* (Mytilidae)

- **Joint Danube Surveys 4 (2019) and 5 (2025) – monitoring of IAS and assessment of the IAS impact on the ecological status of the Danube River and adjacent water bodies in the Danube River Basin**



Photo archive: Bela Csanyi

JDS5 in Bulgaria

Oriental river prawn *Macrobrachium nipponense*

2023 – first reported from the Danube River, Ruse, Bulgaria (rkm 495)

2014 – along the entire Bulgarian stretch, reached Novo Selo (rkm 833)

August 2025 - in the Danube River, but also in the tributaries and lakes, all sizes and very abundant



Mussels from family Mytilidae (*Mytilus galloprovincialis*), August 2025
From Vetren (rkm 398) upstream to Ruse Prista (rkm 501) – shell length
from 2 to 36 mm



Jaguar cichlid *Parachromis managuensis*

- Caught by gill nets in the Danube River at Gomotartsi Village (rkm 816) in August 2025
- Mature female (TL 254 mm) in potential spawning condition, with developed gonads and an estimated high fecundity
- Originates from Central America and adapted to tropical climate and high-water temperatures
- First discovered in Europe, in the outlet channels of Hévízi Lake, a natural thermal lake (26–41°C) in Hungary; now widespread across the Kis-Balaton Water Protection System



FIRST RECORD OF JAGUAR CICHLID *PARACHROMIS MANAGUENSIS* (GÜNTHER, 1867) (ACTINOPTERYGII: CICHLIDAE) FROM THE DANUBE RIVER, BULGARIA: PATHWAYS OF INTRODUCTION AND SPREAD

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INTRODUCTION

The jaguar cichlid (*Parachromis managuensis*) is a species from the Cichlidae family, native to Central America. It is a highly adaptable and aggressive species, known for its ability to thrive in various environments, including freshwater and brackish water. This species was first introduced to Europe in the 1960s and has since spread across several countries, including Hungary, where it has become a dominant species in the Kis-Balaton Water Protection System.

MATERIALS AND METHODS

The first record of the jaguar cichlid in Bulgaria was made in 2025, when a mature female (TL 254 mm) was caught in the Danube River at Gomotartsi Village (rkm 816). The specimen was preserved in formalin and its morphology was described. The species was identified using morphological characteristics and compared with specimens from other countries. The origin of the species was traced back to Central America, where it was first introduced to Europe in the 1960s. The pathways of introduction and spread were investigated using historical records and interviews with local fishermen.

RESULTS

The jaguar cichlid was found in the Danube River at Gomotartsi Village (rkm 816) in August 2025. The specimen was a mature female (TL 254 mm) with developed gonads and an estimated high fecundity. The species was identified using morphological characteristics and compared with specimens from other countries. The origin of the species was traced back to Central America, where it was first introduced to Europe in the 1960s. The pathways of introduction and spread were investigated using historical records and interviews with local fishermen.

DISCUSSION

The jaguar cichlid is a highly adaptable and aggressive species, known for its ability to thrive in various environments, including freshwater and brackish water. This species was first introduced to Europe in the 1960s and has since spread across several countries, including Hungary, where it has become a dominant species in the Kis-Balaton Water Protection System.

CONCLUSIONS

The jaguar cichlid was first recorded in Bulgaria in 2025, when a mature female (TL 254 mm) was caught in the Danube River at Gomotartsi Village (rkm 816). The species was identified using morphological characteristics and compared with specimens from other countries. The origin of the species was traced back to Central America, where it was first introduced to Europe in the 1960s. The pathways of introduction and spread were investigated using historical records and interviews with local fishermen.

REFERENCES

Götherman, A. (1997). *Parachromis managuensis* (Cichlidae, Actinopterygii) in the Danube River, Hungary. *Acta Ichthyologica et Piscicultura*, 47(1), 1-10.

Stoycheva, Z., Todorova, R., Ivanov, P., Golevska-Goleva, I., Todorov, M., Kuzmanova, V., Stankova, T. (2025). First record of the jaguar cichlid (*Parachromis managuensis*) from the Danube River, Bulgaria. *Journal of Fish Biology*, 106(1), 1-10.

Stoycheva, Z., Todorova, R., Ivanov, P., Golevska-Goleva, I., Todorov, M., Kuzmanova, V., Stankova, T. (2025). First record of the jaguar cichlid (*Parachromis managuensis*) from the Danube River, Bulgaria. *Journal of Fish Biology*, 106(1), 1-10.

ACKNOWLEDGMENTS

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- **Contribution to IAS Regulation (EU) 1143/2014 reporting (2019 and 2025)**

According to Article 24(1) of the IAS Regulation (EU) No 1143/2014, the EU Member States are obliged to report by 1st June 2019, and every six years thereafter, the distribution of the invasive alien species of European Union and regional concern

- **First reporting (2019)** - List of IAS of Union concern comprised 49 species, of which 48 were included in the reporting, covering the period 2015–2018

- **Second reporting (2025)** - List of IAS of Union concern comprised 88 species, of which 87 were included in the reporting, covering the period 2019–2024

Currently, the list contains 114 IAS of Union concern, of which 65 animals and 49 plants. Of them, at least 26 animal IAS are found in the DRB (6 aquatic invertebrates, 2 terrestrial invertebrates, 5 fish, 1 reptile, 1 bird, and 11 mammals).

- Citizen science and IAS in the DRB**

Within the DIAS project **Danube-IASapp** the **Invasive Alien Species in Europe app** was tested and updated for the Danube Region

The species list was extended with 64 IAS of regional concern (Danube River Basin) - 44 invertebrates and 20 fish

The app was translated in Bulgarian, Serbian, Romanian and other languages of the Danube countries



The updated
Invasive Alien Species in Europe app
was tested during the JDS4 (2019)

Used during the JDS5 (2025)



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Pilot Application of 'Invasive Alien Species in Europe' Smartphone App in the Danube Region

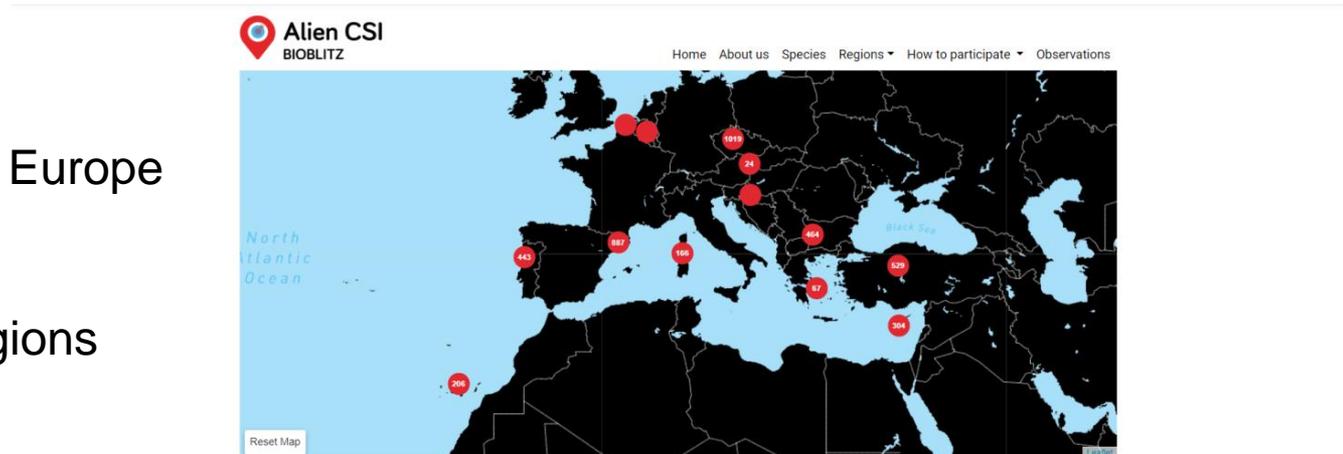
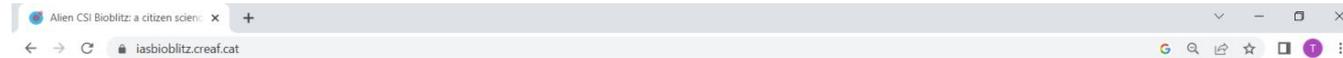
by Teodora Trichkova^{1,*}, Momir Paunović^{2,*}, Dan Cogălniceanu^{3,*}, Sven Schade⁴, Milcho Todorov¹, Rumen Tomov⁵, Florina Stănescu^{3,6}, Ivan Botev¹, Celia López-Cañizares⁷, Eugenio Gervasini⁴, Zdravko Hubenov⁸, Kostadin Ignatov⁹, Marian Kenderov⁹, Nikola Marinković², Irena Mitton¹⁰, Cristina Preda³, Fabiano Antonio Spinelli¹¹, Konstantinos Tsiamis⁴ and Ana Cristina Cardoso^{4,*}

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BioBlitz surveys on IAS in the Danube and Black Sea Region

COST Action CA 17122 'Increasing understanding of alien species (AS) through citizen science' (Alien CSI) (2018–2022)



3-day event across Europe
20-22 May 2022

11 countries/ 13 regions



Series of BioBlitz surveys on IAS conducted in Bulgaria in 2022 and 2023

In 2024 and 2025 several Danube countries were involved in the surveys

The aim of the surveys was to collect data on IAS of concern to the Union and Danube River Basin by taking photos and recording observations with mobile phone applications, and thus, to raise awareness about the IAS issues



Можете да помагате за предотвратяване на въвеждането и разпространяването на инвазивни чужди видове като регистрирате наблюденията си на чужди видове растения и животни с помощта на приложението за мобилни телефони „Инвазивни чужди видове в Европа“ / Invasive Alien Species in Europe App

За Android



За iOS



За контакти:
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Снимки: Теодора Тричкова, Любомир Андреев
Полиграфическа реализация: НЕО Арт - София



COST Акция CA17122
„Повишаване на познанията за чуждите видове с помощта на гражданската наука“ (Alien CSI)
www.alien-csi.eu

Пректи в България, финансирани от Фонд „Научни изследвания“

„Състояние и перспективи на гражданската наука за инвазивните чужди видове в България“ – Лесотехнически университет
www.livazintvidove.ltu.bg

„Повишаване на познанията за чуждите видове с помощта на гражданската наука“ (Alien CSI) – Институт по биоразнообразие и екосистемни изследвания БАН
www.esenias.org

Alien CSI
BIOBLITZ
Биоблиц изследване на инвазивни чужди видове
Bulgaria.IAS@gmail.com



В партньорство с: iNaturalist





BioBlitz on IAS in the Danube Region 2024



The screenshot shows the iNaturalist project page for "BioBlitz IAS Danube Region 2024". The page includes a header with navigation options, a main banner with logos and project details, and a summary section with statistics.

Overview	430 OBSERVATIONS	152 SPECIES	84 IDENTIFIERS	12 OBSERVERS	Stats
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Recent Observations: View All

Bulgaria, Romania and Serbia

КРАТЪК ОПРЕДЕЛИТЕЛ
на
инвазивните
чужди видове животни
от значение за
Европейския съюз и България

BioBlitz 2024

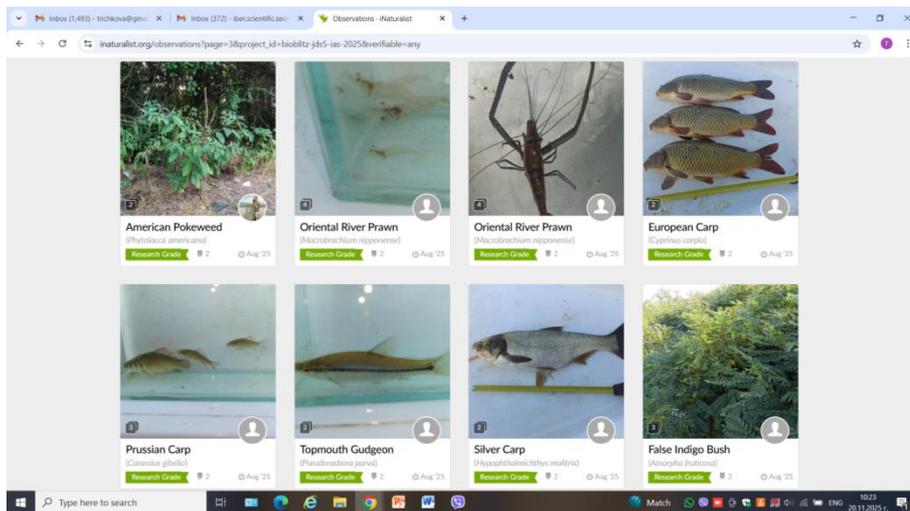
Registrations: 466



A total of 466 observations of plant and animal species were registered in Bulgaria, Romania and Serbia (<https://www.inaturalist.org/projects/bioblitz-ias-danube-region-2024>)

43 observations were on fish, including 10 species

Four fish species are invasive species alien to Europe, three of them (*Ameiurus melas*, *Gambusia holbrooki*, *Lepomis gibbosus*) are IAS of Union concern



BioBlitz 2024



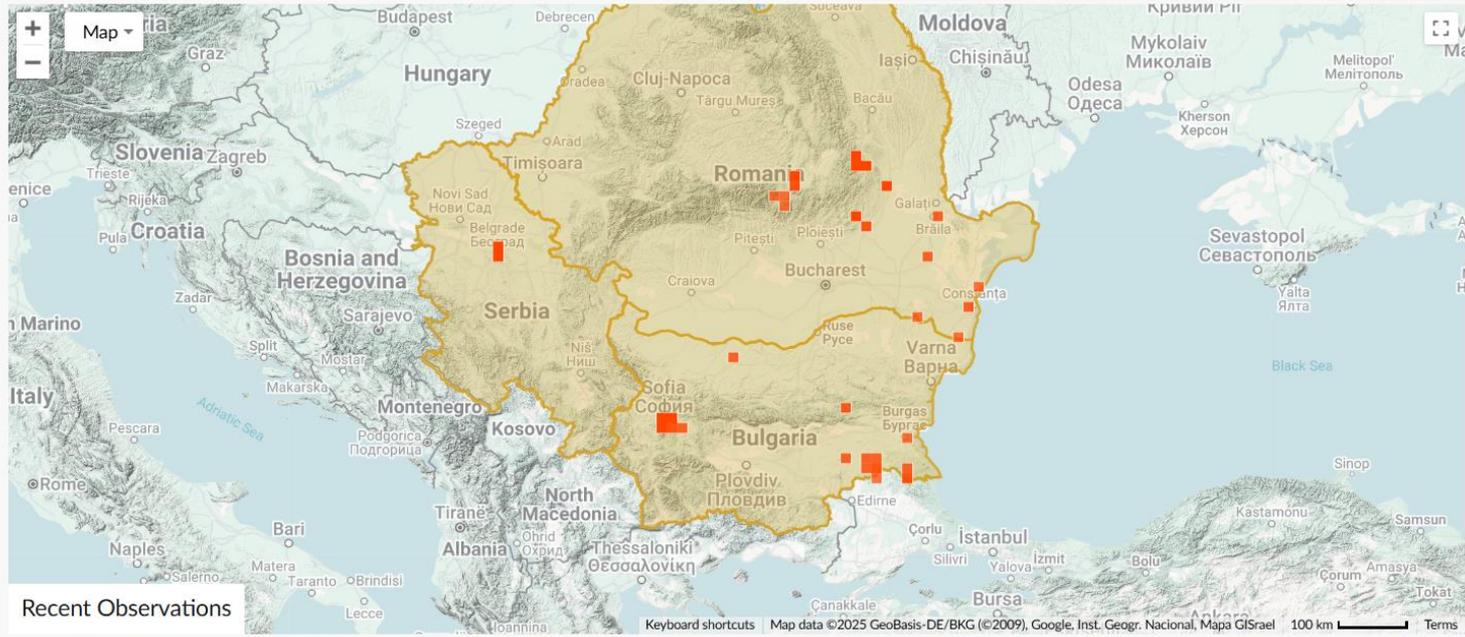
BioBlitz IAS Danube Region 2024

inaturalist.org/projects/bioblitz-ias-danube-region-2024

2024 · 2:14 PM UTC

Establishment Any

Map of Observations



Windows taskbar with search bar, task view, and various application icons. System tray shows weather (0°C Mostly cloudy), time (1:29), and date (10.4.2025).



BioBlitz 2025



In **Bulgaria and Romania** the BioBlitz surveys on IAS were joined by volunteers (scientists, students, NGO activists, environmentalists, etc.) as individual participants or as part of a BioBlitz event guided by experts (Yuzhen Park, Sofia, 08.06.2025).



BioBlitz 2025



A total of 230 observations of 70 taxa were recorded in the Danube River Basin in Bulgaria and Romania. Totally 33 alien species (12 plants and 21 animals) have been reported, among them 6 IAS of Union concern and 6 aquatic IAS of Danube River Basin concern.

The screenshot shows a web browser window with the URL 'inaturalist.org/projects/bioblitz-ias-danube-region-2025'. The main content is a map of the Danube River Basin, highlighting Romania and Bulgaria with red squares indicating observation locations. Major cities like Budapest, Bucharest, and Sofia are labeled. To the right of the map is a photograph of four people in waders sampling a stream with nets and buckets. Below the map is a 'Recent Observations' section with a horizontal carousel of seven images: a green plant with red berries, a green plant with purple flowers, a green leaf, a green leaf with a white insect, a green leaf with a white insect, a black beetle on a rock, and a green leaf.

Inappropriate content? [Flag As Inappropriate](#)

- **Awareness raising and capacity building on IAS in the Danube Region**

Training course 'Impact of invasive alien species on biodiversity and ecosystem services in extreme environments'

03-04 April 2017, Sofia, Bulgaria



Joint ESENIAS and DIAS Scientific Conferences

March 2017, Sofia, Bulgaria

September 2018, Bucharest, Romania

September 2019, Ohrid, Republic of North Macedonia



Joint ESENIAS and DIAS Scientific Conferences

December 2021, Virtual format, Antalya, Türkiye

November 2022, Demre, Antalya, Türkiye

October 2023, Varna, Bulgaria

November 2024, Menemen, Izmir, Türkiye

September – October, Bucharest, Romania





6th Croatian Symposium on Invasive Species - with international participation 24-25 November 2025. Hotel Dubrovnik, Zagreb, Croatia

Organised by:

- Croatian Ecological Society
- Department of Biology, Faculty of Science, University of Zagreb





DaWetRest



45th IAD Conference 'Innovative solutions and cooperation to protect and restore biodiversity and ecosystems in the Danube River Basin', 9–12 April 2025, Sofia, Bulgaria

International Association of Danube Research (IAD) Expert Group 'Invasive Alien Species'

- Keynote lecture and dedicated session on IAS in the Danube River Basin



ESENIAS & DIAS Publications

4th ESENIAS Workshop

İSTİLÂCI YABANCI TÜRLER ÇALIŞTAYI

International Workshop on IAS in Agricultural and Non-Agricultural Areas in ESENIAS Region

16-17 December 2013
İZMİR ÇANAKKALE TÜRKİYE ÇA / ÇANAKKALE TÜRKİYE ÇANAK
İZMİR ÇANAKKALE TÜRKİYE ÇA / ÇANAKKALE TÜRKİYE ÇANAK
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İZMİR ÇANAKKALE TÜRKİYE ÇANAK
İZMİR ÇANAKKALE TÜRKİYE ÇANAKKALE

IBER
ESENIAS
ISSG

7th ESENIAS Workshop with Scientific Conference

Networking and Regional Cooperation Towards Invasive Alien Species Prevention and Management in Europe

28-30 March 2017
SOFIA, BULGARIA

Book of Abstracts

Sofia, Bulgaria
2017

Joint ESENIAS and DIAS Scientific Conference and 8th ESENIAS Workshop

Management and sharing of IAS data to support knowledge-based decision making at regional level

26-28 September 2018
BUCHAREST, ROMANIA

Book of Abstracts

BUCHAREST, ROMANIA
2018

University "St. Kliment Ohridski" Bitola
PSI Hydrobiological Institute Ohrid

A special edition of the "REVIEW" dedicated to:

Joint ESENIAS and DIAS Scientific Conference and 9th ESENIAS Workshop

Species, ecosystems and areas of conservation concern under threat from the invasive alien species

03-06 September 2019

Book of Abstracts

Ohrid, Republic of North Macedonia
2019

Supplementum 9 2017

ACTA ZOOLOGICA BULGARICA

Supplementum 9

EAST AND SOUTH EUROPEAN NETWORK FOR INVASIVE ALIEN SPECIES (ESENIAS)

SCIENTIFIC REPORTS 3

7th ESENIAS Workshop with Scientific Conference

Networking and Regional Cooperation Towards Invasive Alien Species Prevention and Management in Europe

28-30 March 2017
SOFIA, BULGARIA

Institute of Biodiversity and Ecosystem Research
Bulgarian Academy of Sciences

2017

72 (4) December 2020

ACTA ZOOLOGICA BULGARICA

72 (4)

East and South European Network for Invasive Alien Species (ESENIAS)
Danube Region Invasive Alien Species Network (DIAS)

Scientific Reports 4: Joint ESENIAS and DIAS Scientific Conference and 9th ESENIAS Workshop
Concern under Threat from the Invasive Alien Species

3-6 September 2019,
Ohrid, Republic of North Macedonia

Institute of Biodiversity and Ecosystem Research

BULGARIAN ACADEMY OF SCIENCES
INSTITUTE OF BIODIVERSITY AND ECOSYSTEM RESEARCH

PHYTOLOGIA BALKANICA

Vol. 25 (3) • DECEMBER 2019

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АТЛАС

на инвазивните чужди видове от значение за Европейския Съюз

5. DIAS Next steps

Update of the DIAS Strategy and work plan

- Follow the 7 key topics
- Update according to the new IAS data, new projects and policy developments

Analysis of data and results from JDS5

Citizen science activities in 2026 under the DANUBE4all project

Project activities and networking

Forthcoming events

50th Anniversary of Austrian Committee of the IAD
"Danube Research – Past, Present, and Future".,
June 26, 2026, Vienna

46th IAD Conference *"The Socio-Ecological Future of the Danube: Integrating Riverine and Terrestrial Systems for a Sustainable Danube"*, August 10–14, 2026, Baja, Hungary

ESENIAS & DIAS Conference 2026
November 2026, Sofia, Bulgaria



<https://www.danube-iad.eu/>



7th EUSDR Annual Forum
18-19 October 2018, Sofia, Bulgaria

15th EUSDR Annual Forum
2025, Sofia, Bulgaria
Bulgarian Presidency of EUSDR with the motto: 'Bridging Regions, Building Cohesion: A stronger Danube for All'



Thank you for your attention! 😊

