



Joint ESENIAS and DIAS Scientific Conference 2024 and 13th ESENIAS Workshop

Invasive alien species impact and management in agriculture, forestry and aquaculture

26–29 November 2024

Menemen, Izmir, Türkiye

Organised and supported by:

General Directorate of Agricultural Research and Policies (TAGEM),
Ministry of Agriculture and Forestry, Türkiye

International Agricultural Research and Training Center (UTAEM),
Ministry of Agriculture and Forestry, Türkiye

General Directorate of Fisheries and Aquaculture (G DFA),
Ministry of Agriculture and Forestry, Türkiye

Turkish Nature Conservation Association (TTKD) ‘Love Nature’

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Faculty of Agriculture, Canakkale Onsekiz Mart University (ÇOMÜ), Türkiye

Institute of Biodiversity and Ecosystem Research,
Bulgarian Academy of Sciences (IBER-BAS), Bulgaria

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

Danube Region Invasive Alien Species Network (DIAS)

SuEkoS, Türkiye

EWRS Invasive Alien Plants Working Group

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Sven Bacher, Switzerland
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Conference Overview

The issue of biological invasions has been identified as a significant environmental challenge over the past few decades, with a particular impact in the fields of conservation biology, forestry, agriculture and fisheries. Invasive alien species (IAS) represent a significant component of this issue in terrestrial, marine, brackish, and freshwater ecosystems worldwide. These include both plants and animals, such as insects and fish, that have been introduced and translocated globally. Biological invasions are increasingly recognised as a major global change that erodes ecosystems, societal well-being, and economies. However, comprehensive analyses of their economic ramifications are lacking for the majority of national economies, despite the rapidly escalating costs observed globally.

Networking and regional cooperation in different scales is crucial for evaluating the impact of IAS and for the development and implementation of proper management measures for IAS and can facilitate the implementation of existing IAS instruments in order to protect biodiversity and ecosystems and reduce the social and economic negative effects.

This conference is the sixth one organised jointly in frames of the networks ESENIAS and DIAS, focusing on the topic: 'Invasive alien species impact and management in agriculture, forestry and aquaculture'. It will highlight the importance of regional cooperation for finding innovative solutions to IAS issues.

The conference aims at:

- Update on current ESENIAS and DIAS project activities and outcomes
- Exchange of information on other IAS related initiatives carried out in the region, such as national and local monitoring programmes, risk assessments, pathway analyses and action plans, control and eradication projects, management plans and national strategies, citizen science activities and responsibilities, data planning and management
- Discuss and propose innovative approaches and solutions for implementation of IAS research and management strategies at regional level
- Enhance cooperation and networking among scientists in the ESENIAS and DIAS regions and with other networks, organisations and projects.

Scientific Topics

- 1. Invasive alien species traits and trends** – invasive alien species introduction and spread, biological and ecological traits; characteristics of recipient environment; invasive alien species and climate change; viruses, bacteria and other small organisms as IAS
- 2. Vectors and pathways for invasive alien species introductions** – analysis, prioritisation, action plans
- 3. The Danube River as invasive alien species corridor** – priority species for the Danube Region, impact on threatened species, specificity of biological invasions in the Lower, Middle and Upper Danube River sections
- 4. Invasive alien species impact** – impact on biodiversity and ecosystem services, impact on human health, safety and the economy; pests and pathogens; adverse impact on protected areas, endangered species and habitats

5. **Invasive alien species prevention and management** – early detection and rapid eradication, surveillance systems; risk assessment and horizon scanning; control and containment measures; restoration of damaged ecosystems; education, citizen science, strategies, policy and legislation
6. **Management and sharing of IAS data** – IAS networks and information systems, databases, data planning and management
7. **Other topics** – general aspects related to the quality of the aquatic and terrestrial environments and associated biological communities, which may influence the introduction and spread of IAS, as well as the application of prevention and management measures; forest fires and IAS.



Research and Application Center of Botanical Garden and Herbarium, Ege University, Izmir, Türkiye (photo: <https://botanik.ege.edu.tr>)

CONFERENCE PROGRAMME

26th November 2024

10.30 – 12:30 **Registration**

12.30 – 13:30 **Lunch**

13:30 – 14:00 **Opening of the conference and welcome of participants**
Chair: Dr. Mahir Kanyılmaz, G DFA

Mr. Tuncay Topdemir, Director of UTAEM
Dr. Mustafa Altuğ Atalay, General Director, TAGEM
Mr. Turgay Türkyılmaz, General Director of G DFA
Prof. Ahmet Uludağ, COMU, ESENIAS and DIAS
Prof. F. Güler Ekmekçi, Chair of the Conference
Dr. Teodora Trichkova, Chair ESENIAS and DIAS

Session 1

Chairs: F. Güler Ekmekçi, Mahir Kanyılmaz

Keynote presentation 1

14:00 – 14:30 **Teodora Trichkova et al.** – Invasive alien species and climate change as major threats to biodiversity and ecosystems in the region: Update on ESENIAS and DIAS activities

Keynote presentation 2

14:30 – 15:00 **Marika Galanidi, Argyro Zenetos, Atef Ouerghi** – Marine NIS assessment and management in the framework of the Barcelona Convention

15:00 – 15:15 **Paraskevi K. Karachle, Gerasimos Kondylatos, Ioanna Argyrou, Athina Kokkali, Theoni Kollia, Aikaterini Dogrammatzi, Maria Th. Stoumboudi, Ioannis Nengas** – Action plan for the management of *Lagocephalus sceleratus* (Gmelin, 1789) in the Hellenic Seas

15:15 – 15:30 **Derya Özcan, F. Güler Ekmekçi, Baran Yoğurtçuoğlu, Mahir Kanyılmaz** – Evaluation of the invasiveness potential of Atlantic salmon *Salmo salar*: A non-native aquatic species subjected to aquaculture in Türkiye

15:30 – 15:45 **Coffee break**

Session 2

Chairs: Marina Piria, Baran Yoğurtçuoğlu

15:45 – 16:00 **Anastasiia Lepekha, Sergii Bushuiev, Yurii Karavanskyi, Veniamin Zamorov, Yuriy Kvach** – Morphological diversity and salinity tolerance of *Macrobrachium nipponense* in Ukraine

16:00 – 16:15 **Ceren Şengül, Ali Serhan Tarkan, Batuhan Çelik, Baran Yoğurtçuoğlu** – Linking functional response to phylogenetic relationships and threat level in invasive *Gambusia holbrooki* and native killifish interactions

- 16:15 – 16:30 **Guncha Meredova, Pınar Göç Rasgele, Şerife Gülsün Kırankaya** – Comparison of genotoxic efficiency in invasive gibel carp and native crucian carp populations in Lake Büyük Akgöl, Sakarya, Türkiye
- 16:30 – 16:45 **Marina Piria, Lorenzo Vilizzi, Marko Čaleta, Davor Zanella, Ivan Špelić, Vojislav Sokolović, Ivana Vitasović Kosić** – Tackling invasive non-native species in Europe III: threats and opportunities until 2030
- 16:45 – 17:00 **Milcho Todorov, Teodora Trichkova, Kostadin Ignatov, Hristina Kalcheva** – Pilot activities to reduce the population of the invasive spiny-cheek crayfish *Faxonius limosus* in ‘Vartopski Dol’ Natura 2000 Protected Area in Bulgaria
- 17:00 – 17:15 **Coffee break**
- 17:15 – 18:00 **Poster Session 1**
- 18:30 – 19:30 **Dinner**

27th November 2024

Session 3

Chairs: Inci Tüney, Ahmet Uludağ

Keynote presentation 3

- 09:30 – 10:00 **Necmi Aksoy, Serdar Aslan, Neval Güneş Özkan** – An example on herbarium collections and digitisation of alien plant species in Türkiye: DUOF Herbarium
- 10:00 – 10:15 **Ahmet Uludağ, Deniz Inci, Necmi Aksoy, İlhan Uremis, Giuseppe Brundu** – Progressive checklist of alien plant taxa for flora of Türkiye
- 10:15 – 10:30 **Necmi Aksoy, Serdar Ölez** – Taxonomical and chorological notes for a new alien plant species recorded from Türkiye: *Euphorbia hypericifolia* L. (Euphorbiaceae)
- 10:30 – 10:45 **Emek Koçak, Bediya Eylül Mersin** – Agro-morphological characterisation of seeds of cowpea [*Vigna unguiculata* (L.) Walp.] landraces obtained by natural pollinators

10:45 – 11:00 **Coffee break**

Session 4

Chairs: Nilay Gülperçin, Ümit Kebapçı

Keynote presentation 4

- 11:00 – 11:30 **Rumen Tomov** – Quarantine pests approaching East and Southeast Europe: A reality check
- 11:30 – 11:45 **Alper Polat, Nilay Gülperçin** – A new threat to sustainable biodiversity: invasive insect species
- 11:45 – 12:00 **Rumen Tomov, Boryana Plashkova, Yanitsa Kostadinova** – Natural enemies of economically important insect crop pests in Bulgaria – A review

12:00 – 12:15 **Rumen Tomov, Boryana Plashkova** – Alien arthropods on walnut (*Juglans regia* L.) in Bulgaria

12:15 – 12:30 **Ümit Kebapçı** – Agricultural impacts of non-native land snails and slugs

13:00 – 14:00 **Lunch**

Session 5

Chairs: Paraskevi K. Karachle, Rumen Tomov

14:00 – 14:15 **Ahmet Uludağ** – An outlook to eDNA use in environmental issues

14:15 – 14:30 **Vladimir Vladimirov, Teodora Trichkova, Rumen Tomov** – Early detection and warning system for invasive alien species in Bulgaria: facing the challenge

14:30 – 14:45 **Necmi Aksoy, Neval Güneş Özkan, Nihan Koçer** – New alien aquatic plant communities and their floristic compositions from Bolu Region, Türkiye

14:45 – 15:00 **Polina Nikova, Yordan Koshev, Teodora Trichkova** – Analysis of pathways of introduction and spread of the coypu (*Myocastor coypus* Molina, 1782) in Bulgaria

15:00 – 15:15 **Ümit Kebapçı** – Floriculture as a medium of molluscan alien introductions

15:15 – 15:30 **Coffee break**

15:30 – 16:30 **13th ESENIAS Workshop**

Chairs: Teodora Trichkova, Ahmet Uludağ

16:30 – 18:00 **Poster Session 2**

18:30 – 19:30 **Dinner**

28th November 2024

Session 6

Chairs: Ivana Vitasović-Kosić, Şerife Gülsün Kirankaya

09:30 – 09:45 **Kamil Atli, Hasbi Sait Saltik, Deniz İnnal** - Molecular investigation of viral nervous necrosis in some invasive fish species

09:45 – 10:00 **Şükrü Güngör, Mine Herdoğan, Muhammed Enes İnanç, Deniz İnnal** - Perspective on some spermatological properties of the Lessepsian Lizardfish *Saurida lessepsianus*

10:00 – 10:15 **Aylin Ulman** – Exotic invasive pufferfish leather products: from Menace to Marvel

10:15 – 10:30 **İnci Tüney, Büşra Nur Kuruoğlu, Esra Öztürk** – Utilising the anti-cancer potential of alien macroalgae: Turning ecological threats into economic solutions

10:30 – 10:45 **Coffee break**

10:45 – 13:00 **VALIAS Project Seminar**

Chairs: Paraskevi K. Karachle, Magdalini Krokida, Sofia Papadaki

13:00 – 14:00 **Lunch**

Session 7 (online)

Chairs: F. Güler Ekmekçi, Teodora Trichkova

Keynote presentation 5

14:00 – 14:30 **Ana Cristina Cardoso, Eugenio Gervasini, Chiara Magliozzi** – Aligning policies to improve IAS management: The role of EASIN

Keynote presentation 6

14:30 – 15:00 **Ali Serhan Tarkan** – Understanding the economic costs of invasive species: Türkiye's first national synthesis with implications for east and southern Europe

Keynote presentation 7

15:00 – 15:30 **Yuriy Kvach** – Invasive alien species monitoring in the Ukrainian part of the Danube delta

Keynote presentation 8

15:30 – 16:00 **Robert Britton** – Bending the curve on the invasion of topmouth gudgeon *Pseudorasbora parva* in England

Keynote presentation 9

16:00 – 16:30 **Ivana Čabarkapa, Slađana Rakita, Aleksandar Bajić, Mladen Horvatić** – Managing invasive species with a zero-waste approach: The case of spiny-cheek crayfish in Serbia

16:30 – 16:45 **Coffee break**

16:45 – 18:00 **Poster Session 3**

18:30 – 19:30 **Dinner**

POSTERS

Poster Session 1

(17:15 – 18:00 h, 26.11.2024)

Chairs: Aylin Ulman, Hristina Kalcheva

P1.01: Ivanna Dudliv, Yuriy Kvach, Maria Yu. Tkachenko, Kateryna Nazaruk, Markéta Ondračková – Comparative analysis of parasite load on recently established invasive pumpkinseed *Lepomis gibbosus* (Actinopterygii: Centrarchidae) in Europe

P1.02: Havva Özer, Baran Yoğurtçuoğlu, Fitnat Güler Ekmekçi, Şerife Gülsün Kirankaya – Fish therapy ponds as potential pathways for the introduction of *Garra* species: A morphometric approach to species identification

P1.03: Fatma Demir, Şerife Gülsün Kirankaya, Baran Yogurtcuoglu, Fitnat Güler Ekmekçi – Establishment and reproductive potential of the invasive Green Swordtail in the Euphrates Drainage, Türkiye

P1.04: Viktor Demchenko, Sergii Bushuiev, Yuriy Kvach, Nataliia Demchenko – The role of the invasive fish species in the fish assemblages of the waters of the Lower Danube region of Ukraine

- P1.05: Dragana Jenačković Gocić, Jovana Stojanović, Marina Jušković, Danijela Nikolić** – Step by step to monodominance in aquatic ecosystems: *Elodea nuttallii* (Planch.) H. St. John in the main role
- P1.06: Tetiana Novosolova, Alexander Protasov, Anzhelika Sylaieva, Iryna Morozovska** – The mutual threats from invasive species in water technoecosystems and surrounding water bodies
- P1.07: Milica Jaćimović, Marko Stanković, Dejana Trbović, Dušan Nikolić, Marija Smederevac-Lalić, Zoran Marković** – Transforming invasive non-native fish species into a valuable food resource

Poster Session 2

(16:30 – 18:00 h, 27.11.2024)

Chairs: Ahmet Uludağ, Necmi Aksoy

- P2.01: Vladimir Vladimirov, Antoaneta Petrova** – A new alien species of *Symphyotrichum* to the Bulgarian flora
- P2.02: Ahmet Uludağ, Meryem Dimen** – Alien plant species in vineyards in Türkiye
- P2.03: Antoaneta Petrova** – Alien and invasive plant species in a newly built residential complex in Sofia, Bulgaria
- P2.04: Elena Bulakh, Oleksandr Orlov, Liudmyla Zavialova, Oksana Kucher, Tetiana Dvirna, Olena Miskova, Vira Protopopova, Zbigniew Celka, Piotr Szkudlarz, Liubov Ryff, Myroslav Shevera** – What habitats are selected by the microspecies of *Portulaca oleracea* aggregate in Ukraine?
- P2.05: Liubov Gubar, Yaroslav Krylov** – Dynamics of population distribution of species of the genus *Reynoutria* Houtt. in forest plantations of the city of Kyiv
- P2.06: Nataliia Miroshnyk** – The impact of climate change on the distribution of the invasive species *Reynoutria japonica* Houtt. Data from Germany and Ukraine
- P2.07: Oleksandr Shynder, Vitalii Kolomiichuk, Myroslav Shevera** – Monitoring of spontaneous flora of the botanical gardens and dendrological parks of the forest-steppe of Ukraine
- P2.08: Olha Tertychna, Galina Ryabukha** – Impact of military operations on forest ecosystems and the spread of invasive species
- P2.09: Maksim Kvitko, Tetyana Lykholat, Yevgenia Boroday, Olena Lykholat, Eduard Yevtushenko, Yuriy Lykholat** – Indicators assessment of pollution accumulation in grass cover and leaf fall of the ecosystems in Pridniprovsk TPP operation area
- P2.10: Ekaterina Kozuharova, Christina Stoycheva, Yancho Zarev, Iliana Ionkova** – Possibilities to control the aggressive invasive *Solanum elaeagnifolium* Cav. (Solanaceae), by using it for medicinal purpose
- P2.11: Ivan Stambolov, Iliana Krasteva, Aleksandar Shkondrov, Ekaterina Kozuharova** – Invasive alien *Erigeron canadensis* – a potential cheap and easily accessible resource of plant substance for medicinal use
- P2.12: Oleksandr Tsybulskiy** – Ash tree drying out: is the Emerald Ash Borer to blame?
- P2.13: Olga Deli, Yuriy Kvach** – An invasive species of mantis (*Hierodula transcaucasica* Brunner von Wattenwyl, 1878) in Ukrainian part of the Danube Delta
- P2.14: Igor Davydenko, Anna Boyko** – Invasive alien animal species of the Hosiiv National Nature Park (Kyiv, Ukraine)

Poster Session 3 (16:45 – 18:00 h, 28.11.2024)

Chairs: Paraskevi K. Karachle, Deniz İnnal

- P3.01: Roumiana Todorova** – Viruses and bacteria as invasive alien species
P3.02: Ruslan Martinov – Invasive alien species and their socio-economic impact
P3.03: Marius Skolka, Daniyar Memedemin, Cristina Preda – Associations of organisms edified by invasive species
P3.04: Konstantin Zdraveski, Mirjana Dokic, Sasho Trajanovski – Data sonification reflecting the ecological status of St. Naum Springs in the natural and cultural heritage of the Ohrid region
P3.05: Serhat Engin, Sertan Koşan, Sule Gurkan – Some observations on body performance values in the invasive species of Kemer (Antalya Bay) coasts, *Sargocentron rubrum* (Forsskål, 1775)
P3.06: Simge Bozkaya, Sule Gurkan, Ertan Taskavak – Morphometric characteristics based on sex of the red cornetfish (*Fistularia petimba* Lacepède, 1803) in the Eastern Mediterranean (Türkiye)
P3.07: Yevgeniia Shesterenko, Anastasiia Rudnenko, Yuliia Shesterenko, Svitlana Dekina – Cytosolic carboxylesterase from *Rapana venosa* hepatopancreas: Isolation, properties, and substrate specificity
P3.08: Valentyn Toptikov, Svitlana Bilokon, Tetiana Alieksieieva – Influence of certain compounds on the collagenase activity of an enzyme preparation from the salivary glands of *Rapana venosa*
P3.09: Dönay Öniş, Emin Tuğra Uğurlu, Zeynep Atıcı, Zerrin Yağmur Koyuncu, Orçun Ödemiş, Jinda Aydın, Eysan Yılmaz, Asel Rana Sezer, Zehra Akbuğa, Zekiye İklim Oysal, Nazifenur Aybar – Invasive marine species in the mediterranean region: A contribution of art 'The nature I live in' painting exhibition

29th November 2024

Conference excursion (09:30 – 18:00 h)

The participants will visit Botanical Garden and Natural History Museum at Ege University in the morning and Izmir Town in the afternoon. Bus transport will be provided by the organisers. Participants can stay in Izmir to take transport if they will travel back on the same day. Sandwiches will be prepared for lunch.

18:30 – 19:30 **Dinner**

UTAEM Hotel Meals

07:30 – 09:00 Breakfast

12:30 – 13:30 Lunch (on 26th November 2024)

13:00 – 14:00 Lunch (on 27th and 28th November 2024)

18:30 – 19:30 Dinner



VALIAS Project Seminar

Chairs: Paraskevi K. Karachle, Magdalini Krokida, Sofia Papadaki

Summary: The VALIAS project (Valorisation of Marine Invasive Alien Species) focuses on converting marine invasive alien species (IAS) from ecological threats into valuable resources. By utilising IAS as feedstock, the project aims to generate bioactive compounds for cosmetics, food, and aquafeed supplements, benefiting fisheries, industries, and ecosystems. This circular economy initiative helps mitigate the ecological and economic impacts of IAS, promotes sustainability, and improves biodiversity management. VALIAS fosters collaboration across academia and industry.

Seminar Outline:

1. Introduction

- Overview of marine invasive alien species and their ecological impact
- Importance of managing IAS within the European context, referencing European Directive 1143/2014

2. Presentation of the VALIAS Project

- Project objectives: valorisation of IAS to create new bioactive resources for aquaculture, food, and cosmetics
- Key work packages and deliverables, focusing on IAS species selection and data collection for mapping
- Sustainable and economic benefits: new fisheries, ecological balance, and industry productivity

3. Marine Invasive Alien Species Selection Process

- Criteria for selecting IAS for valorisation
- Methods for data collection and mapping of IAS populations
- The potential of IAS in commercial product development, including safety evaluations and environmental considerations

4. Discussion on Challenges and Opportunities

- Ecological risks vs. economic opportunities of exploiting IAS
- Case studies or examples from the VALIAS project
- Ethical and socio-economic impacts of IAS valorisation

5. Interactive Session and Q &A

- Open discussion on the role of circular economy in managing IAS
- Engaging participants on how similar models can be applied in different marine and agricultural sectors.

Online participants' countries and time zones

Country (Country zone)	Türkiye time (TRT)	Central European time (CET)
1. Italy (CET)	-2	0
2. Poland (CET)	-2	0
3. Serbia (CET)	-2	0
4. UK (GMT)	-3	-1
5. Ukraine (EET)	-1	1

GMT – Greenwich Mean Time = UTC 0 (Coordinated Universal Time)

CET = UTC +1

EET – Eastern European Time = UTC +2

TRT = UTC +3