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ΕΘΝΙΚΟ ΚΕΝΤΡΟ ΠΕΡΙΒΑΛΛΟΝΤΟΣ
& ΑΕΙΦΟΡΟΥ ΑΝΑΠΤΥΞΗΣ

Έπαυλη Καζούλη, λεωφ. Κηφισίας 241, 145 61 Κηφισιά

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Action 2.1: Organisation And Development Of Regional Workshops With Key Regional Stakeholders (KS)

(2nd Regional Workshop for INTERREG EUROPE INVALIDIS: Environmental vulnerability: the impact of Invasive Alien Species)

Meeting Summary

The 2nd Regional Meeting was held in the context of INTERREG EUROPE INVALIDIS with code PGI05271 and title “Protecting European Biodiversity from Invasive Alien Species”. The purpose of the meeting was to implement the Action 2.1 with title “Organisation And Development Of Regional Workshops With Key Regional Stakeholders (KS). The Regional Meeting took place in Athens in the National Center for the Environment and Sustainable Development, in the villa of Kazouli (241 Kifissias Street) on December 16, 2019 at 10:00 am.

The group of the stakeholders for the 2nd Regional Meeting consisted of:

Last name - First Name	Name of Organization	KRs_cat	Description
Dimopoulos Panayotis	University of Patras Hellenic Botanical Society	KS_RE KS_CS	University Hellenic Association
Zogaris Stamatis	Hellenic Centre of Marine Research	KS_RE	Governmental Research Organization
Karachle Paraskevi	Hellenic Centre of Marine Research	KS_RE	Governmental Research Organization
Arianoutsou Margarita	National and Kapodistrian University of Athens	KS_RE	University



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Bazos Ioannis	National and Kapodistrian University of Athens	KS_RE	University
Gonou-Zagou Zacharoula	National and Kapodistrian University of Athens	KS_RE	University
Radea Kanella	National and Kapodistrian University of Athens	KS_RE	University
Adamopoulou Chloe-Ann	National and Kapodistrian University of Athens	KS_RE	University
Nikokavouras Charilaos	Ministry of Environment & Energy	KS_PA	Public Authority
Christopoulou Ioli	The Green Tank	KS_CS	NGOs
Doumpas Nikolaos	iSea	KS_CS	NGOs
Evangelidis Aggelos	Hellenic Ornithological Society	KS_CS	NGOs
Pappas Yiannis	PROMEIA	-	INVALIDIS management-non profit
Panagiotarea Lena	PROMEIA	-	INVALIDIS management-non profit
Krigas Nikolaos	Institute of Plant Breeding and Genetic Resources Hellenic Agricultural Organisation Demeter	KS_RE	Governmental Research Organization
Tsopelas Panaghiotis	Hellenic Agricultural Organisation Demeter	KS_RE	Governmental Research Organization
Soulioti Nikoleta	Hellenic Agricultural Organisation Demeter	KS_RE	Governmental Research Organization
Korizi Katerina	Free Lancer	KS_PC	-
Varelidis Petros	National Center of Environment and Sustainable Development	-	Executive Director of NCESD



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Gkaniatsa Maria	National Center of Environment and Sustainable Development	-	Member of NCESD -project team
Zikou Elena	National Center of Environment and Sustainable Development	-	Member of NCESD -project team
Kalliontzis Aggelos	National Center of Environment and Sustainable Development	-	Member of NCESD -project team
Kapsi Vasiliki	National Center of Environment and Sustainable Development	-	Member of NCESD employee
Panagopoulou Georgia	National Center of Environment and Sustainable Development	-	Member of NCESD employee
Pantelis Alexandros	National Center of Environment and Sustainable Development	-	Member of NCESD employee

The main speakers of the 2nd Meeting:

SPEAKER	ORGANISATION	TOPIC
Pappas Yiannis	PROMEIA (Management)	<u>Review</u> : “Protecting European Biodiversity from Invasive Alien Species” INTERREG EUROPE PROGRAMM
Radea Kanella	National Center of Environment and Sustainable Development	<i>Potamopyrgus antipodarum</i> (Gray 1843) (Gastropoda: Tateidae) in freshwater systems of Greece
Evangelidis Aggelos	Hellenic Ornithological Society	Rat eradication operations for the conservation of priority



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		island nesting birds in Greece
Tsopelas Panaghiotis and Nikoleta Soulioti	Hellenic Agricultural Organisation Demeter	Efforts to eradicate the invasive fungal pathogen <i>Ceratocystis platani</i> in natural stands of <i>Platanus orientalis</i> in Greece
Doumpas Nikolaos	iSea	Pick the alien”: Raising awareness actions for Cyclades’ local communities and stakeholders on possible ways of mitigating the problems caused by invasive alien marine species through gastronomy
Zogaris Stamatis	Hellenic Centre of Marine Research	Confronting Invasive Alien Fish in Fresh Water’s Ecosystems: Research Background-Custom Management
Adamopoulou Chloe-Ann	National and Kapodistrian University of Athens	Invasive terrestrial vertebrates in Greece
Krigas Nikolaos	Hellenic Agricultural Organisation Demeter	Alien invasive plants: Cities are species-rich, disturbance is favourable, roads pave the way, fields are suffering and ecosystems are imperilled
Arianoutsou Margarita	National and Kapodistrian University of Athens	Actions of eradication of foreign plant species: examples from the Mediterranean and other regions
Dimopoulos Panayotis	University of Patras Hellenic Botanical Society	European Regulation 1143/2014 and invasive plant species. Where is Greece 5 years after its implementation?



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The meeting was opened by the Executive Director of NCESD, Mr. Petros Varelidis, with a greeting to the stakeholders and outlining the role of NCESD in the INTERREG EUROPE INVALIDIS. Then, program was extensively presented by the management project team representative, Yiannis Pappas, PROMEA's Senior Management.

The stakeholder speeches were as follows:

- **Radea Canella** (Department of Ecology & Systematics, Faculty of Biology, National & Kapodistrian University of Athens):

***Potamopyrgus antipodarum* (Gray 1843) (Gastropoda: Tateidae) in freshwater systems of Greece**

Potamopyrgus antipodarum is a small aquatic snail native of New Zealand. The species has spread worldwide and in many countries has become an invasive species due to extremely high densities of its populations. *P. antipodarum* was recorded in the Greek water bodies in 2007. The species was found in the littoral zone of Lake Trichonis (Central-Western Greece) and in a permanent, slowly flowing stream discharging into this lake. Although the invasion mode of *P. antipodarum* in this area still remains unknown, it seems that it has possibly been transported from Europe and Turkey by resting and/or wintering waterfowls.

- **Evangelidis Aggelos** (Hellenic Ornithological Society):

Rat eradication operations for the conservation of priority island nesting birds in Greece

For over a decade rat eradications have been one of the main and most effective management measures employed for the conservation of priority



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island nesting bird species in Greece, thus creating benefits for a significant proportion of their national populations by removing rats from some of their largest colonies. On some of the largest colonies which remain rat infested, future rat eradication or control operations are planned to be carried out. Apart from the birds, other fauna groups e.g. lizards and the vegetation of uninhabited islets also benefited from rat eradication.

- **Tsopelas Panaghiotis and Nikoleta Soulioti** (Hellenic Agricultural Organisation Demeter):

Efforts to eradicate the invasive fungal pathogen *Ceratocystis platani* in natural stands of *Platanus orientalis* in Greece

Ceratocystis platani (Walter) Engelbr. & T.C. Harr. is an indigenous fungal species of North America that has invaded Europe. This fungus causes a very serious disease on plants of the genus *Platanus* (plane trees), known as “canker stain disease”, which is always fatal. *Ceratocystis platani* was accidentally introduced into Europe during World War II. In Greece this fungus was initially detected in 2003 in southwestern Peloponnese and has spread since then into a major part of the country. Thousands of oriental plane trees (*Platanus orientalis* L.) have died because of the disease, mainly along rivers and streams, where oriental plane is the dominant tree species of the riparian vegetation. The pathogen has also caused tree mortality to amenity plane trees in residential areas and recreational sites of the country. In such areas phytosanitary measures are applied for disease containment. Tree removal and burning in place is applied, when possible, to eliminate sources of inoculum. The transport of firewood from infected plane trees is controlled by quarantine regulations. Eradication measures have been effectively applied in Greece in small disease foci, when the pathogen was detected at an early stage and the number of infected trees was limited. Since the fungus spreads to neighboring



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trees underground through root anastomosis, the use of herbicides on the surrounding healthy trees has proven to be an effective method to eradicate the disease. In this way, a “buffer zone” is created around the infected trees. Due to the fact that this disease is mainly spread by terracing machinery and pruning and cutting tools that have not been disinfected, application of good sanitation and disinfection practices can prevent the entrance of the disease into new areas, thus playing an important role in disease management. Lack of coordination and communication among local authorities, contractors, citizens and other stakeholders and on the other hand out of date and loose application of legislation has as a result further enhanced dispersal of this alien invasive pathogen. The disease has assumed epidemic proportions in certain natural stands, where eradication is not feasible and disease management is overall problematic. For the same reasons, man-driven dispersal of the disease in new areas of the country is an issue, posing a serious threat to natural stands of oriental plane and causing the collapse of this plant species in the country.

- **Doumpas Nikolaos** (Directing the Alien Species pillar of iSea (NGO))

“Pick the alien”: Raising awareness actions for Cyclades’ local communities and stakeholders on possible ways of mitigating the problems caused by invasive alien marine species through gastronomy

The project “Pick the alien” aims to raise awareness of the local community and all the stakeholders of the Cyclades regarding alien species and the consequences of their presence on the local economy, tourism, indigenous species and environment, and to human health. Furthermore, there is an effort to mitigate the problem by promoting the consumption of alien species. The presentation will focus on the two-day event held in Santorini in September 2019.



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- **Zogaris Stamatis-Koutsikos Nikolaos** (Hellenic Centre of Marine Research):

Confronting Invasive Alien Fish in Fresh Water's Ecosystems: Research Background-Custom Management

The results of the sampling in Greek rivers from 2001 to 2015, showed that 9% of the species are invasive. It was emphasized that 4 of the Alien species such as *C. gibelio* (Butterfly), *G. holbrooki* (Mosquito), *L. Gibossus* (Sunflower), *P. parva* (Pseudoraspora) pose maximum risk. In addition to the previous mentioned facts, the results were accompanied by observation maps of their distribution in fresh water ecosystems in Greece. Finally, the researchers referred to methods of the eradication of Alien species, including: a) the chemical method: use of Rotenone, a plant-derived pesticide with a toxic effect on humans and other endemic species, the use of which is quite high cost-effective while also it has limited efficacy, since it only works optimally in isolated water collections and the risk of re-settling them is increased, (b) mechanical method: targeted fishing by means of electricity or other various traps, shells or nets (but with limited efficiency) and (c) changes in habitats through the creation of artificial barriers, with total drying or combined management of ecosystems with other forms of control. The researchers concluded that we must take into consideration biological, geophysical, ethical, and economic criteria, before deciding how to manage and eliminate the issues that alien species cause.

- **Adamopoulou Chloe-Ann** (National and Kapodistrian University of Athens)

Invasive terrestrial vertebrates in Greece

Terrestrial invasive vertebrates are responsible for a wide range of negative impacts across Europe. Information on their distribution in Greece was rather poor. Ms Adamopoulou reported the results of the first attempt to outline the



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occurrence of certain invasive terrestrial vertebrates in Greece. Among them, the coypu (*Myocastor coypus*) appears to be the most widely distributed species with well established populations in practically all wetlands of western and north Greece. Furthermore, the successful outcome of the eradication project against the recently established population of the Italian wall lizard, *Podarcis siculus*, in Athens was presented.

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- **Dr Nikolas Krigas** (Institute of Plant Breeding and Genetic Resources at Hellenic Agricultural Organisation Demeter)

Alien invasive plants: Cities are species-rich, disturbance is favourable, roads pave the way, fields are suffering and ecosystems are imperilled

Urbanized areas are the main gateways of introductions of alien plants and as such they host most of them (e.g. 51.3% of all alien plants of Greece has been recorded in Thessaloniki). Human activities and the disturbance they cause are directly or indirectly linked with range-expansion of plant species, progressively contributing to the "homogenization" of the flora in different areas and contexts. In the Greek territory, only some urban areas have been thoroughly studied (Thessaloniki, Patras, Mesolongi, Konitsa, Alexandroupolis) or partially surveyed (Volos, Larissa, Ioannina, Kavala, Piraeus, Veria, Nea Moudania, Argostoli) for alien invasive plants, while the rest of the available data originate from isolated and widely scattered bibliographical references. At the same time, our knowledge alien plants' invading in fields and rural areas is usually limited to weed reports and 'grey literature'. However, it is possible to identify at least 20 alien plants, which are widespread invasive aliens in both urban and rural areas. Studies in such invasive species show that the climate is a limiting factor, anthropogenic soil disturbance is a favouring one, and road networks may facilitate invasions,



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even in protected areas with natural vegetation (especially in wetlands). Recent studies show that alien invasive plants affect in different ways the fungal, bacterial and nematode communities and their networks in the rhizosphere. In this context, with many unanswered questions especially in Greece, the prevention mechanisms and the early warning systems of alien invasions along with the multifaceted awareness of target-groups seem almost to be a one-way road.

- **Arianoutsou Margarita** (National and Kapodistrian University of Athens)

Actions of eradication of foreign plant species: examples from the Mediterranean and other regions

The term of alien species was specified by Arianoutsou Margarita, who outlined ways to combat the spread. Also she referred to Regulation 1143/2014 on invasive species with its purposes. Tables with the main recordings of Alien plant species were provided as well as a variety of examples of their eradication that were cited either physically or chemically (eg *Ailanthus altissima*-Spain, *Oxallis pes-caprae*, natural control methods-Portugal, *Pine*-South Africa).

- **Dimopoulos Panayiotis** (University of Patras and Hellenic Botanical Society)

European Regulation 1143/2014 and invasive plant species. Where is Greece 5 years after its implementation?

The E.U concern Alien species are subject to restrictions and measures that include: conservation, importation, sale, reproduction and cultivation. Member States are thus called upon to take measures to prevent their voluntary or involuntary importation, to detect them and eliminate them, including the



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drawing up of lists and the application of restrictive and other measures at national level. According to a recent revised edition of the European Union's List of Alien Species containing a total of 66 species, 36 of them are plants and 4 of them have been recorded in Greece (*Ludwigia grandiflora*, *Ludwigia peploides*, *Acacia saligna*, *Ailanthus altissima*). Member States and the European Commission may propose new species to include in the list, and the European Union Joint Research Centre, in the framework of the implementation of Regulation 1143/2014, has already developed EASIN (European Alien Species Information Network), platform that enables easy access in data about Alien species. The lecture was concluded with some concerns (eg: Has Greece contributed to the compilation of the Union list? Which of the Greek species have invasive features that could be added to the list? What are the measures that have been taken for the prevent of introduction? Is there a system of immediate identification and management plans to control them?) that have also triggered a constructive dialogue between the audience.

In summary, all participants commended the initiative of the National Centre for Environment and Sustainable Development to create (in the context of the implementation of the INTERREG EUROPE-INVALIDIS program) a stakeholder network that involves government officials, representatives of non-governmental organizations and NGO representatives, in order to achieve the co-operation between them, the promotion of public dialogue and the systematic exchange of data and information on Alien Invasive Species, with the ultimate aim of the application of Regulation 1143/2014. Finally, regarding to main topic of the 2nd meeting on “**Regional case studies on eradication, control and mitigation impact methods of Invasive Alien Species**”, attendees agreed that Greece has not



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implemented a wide range of actions yet, and therefore stressed the need to adopt measures against these species. They also unanimously argued that they must take into account specific criteria when they choose the most appropriate treatment methods (e.g. biology of the species, biogeography of habitat, reversal of positive and negative effects and also economic criteria).