

Summary report of the INVALIS virtual site visit held in Lombardy



**Virtual site visit in
Lombardy**

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and
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INVALIS
Interreg Europe

 European Union
European Regional
Development Fund

FLA
Fondazione Lombardia
per l'Ambiente


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 Fondazione Lombardia per l'Ambiente	VIRTUAL SITE VISIT IN LOMBARDY Agenda November 20 th 2020	  European Union European Regional Development Fund
https://us02web.zoom.us/j/87604085713?pwd=MXJGZTIVdFhhTU53dWxxOVJUQjBKdz09 ID meeting: 876 0408 5713 Passcode: 321422		
Time		Description of activity
10:00-10:05	<i>Welcome speech by FLA</i> FLA intro INVALIS virtual site visits - YouTube	<i>Video from FLA's director</i>
10:05-10.15	<i>Presentation of the Lombardy region</i>	<i>Powerpoint presentation</i>
10:15-10:30	<i>Thematic Session 1: Actions for the protection of the local biodiversity in Lombardy: the safeguard of the Adriatic sturgeon</i> Invalis' virtual site visit (day1) - YouTube	<i>Video presentation</i>
10:30- 10:45	<i>Open discussion from partners</i>	<i>Roundtable discussion</i>
10:45-11:00	<i>Thematic Session 2: Actions for the protection of the local biodiversity in Lombardy: the safeguard of the Italian crayfish</i> INVALIS' virtual site visit (day2) - YouTube	<i>Video presentation</i>
11:00-11:15	<i>Open discussion from partners</i>	<i>Roundtable discussion</i>
11:15-12:00	<i>Sum-up decisions, any other comment and concluding remarks</i>	

Details of the meeting

Partner organising the meeting: Lombardy Foundation for the Environment (FLA)

Platform: Zoom and Youtube

Partner members organising the meeting: Anna Occhipinti, Daniele Paganelli

Number of participants: 15

Lombardy Foundation for the Environment -Italy	4
OEC - France	3
ADR-BI -Romania	2
Zemgale Region - Latvia	3
National centre for the environment -Greece	2
Extremadura region - Spain	1

Introduction

INVALIS is in its third year of activity and Lombardy Foundation for the Environment had the task of organising two site visits: the first one was done with the help of the Ticino Regional Park, while the second one with the help of the Regional Authority of Agriculture and Forests of the Lombardy Region (ERSAF).

Because of the pandemic, Lombardy Foundation for the Environment couldn't host all the partners in Lombardy, so the site visits have been transformed into virtual site visits.

The meeting was virtually held using the platform Zoom on November 20th, 2020 (figure 1) and all the participants were previously informed via email on the agenda of the meeting.



Figure 1. Virtual site visit in Lombardy

Welcome video by the director of Lombardy Foundation for the Environment (FLA)

First, all the participants attended to a video where Fabrizio Piccarolo, the director of Lombardy Foundation for the Environment, introduced the virtual site visit. In this video, he described the role of FLA in the Lombardy environmental research and its role in supporting decision makers and public administrations in the implementation of environmental policies. Since its birth, FLA has always been having an international vision: from the climate change conferences with the United Nation, to the participation in the Biological Diversity Convention.

All of these were occasions that allowed FLA to improve and enlarge its international relationships, participating in European projects, such as the Interreg Europe project INVALIS. The Interreg Europe project INVALIS includes one of the main topics of FLA: safeguarding and managing biodiversity.

Over the years, in agreement with the Lombardy Region, FLA's actions have helped to improve regional policies on these topics. At the end of his video, director Piccarolo was very grateful to the Ticino Regional Park and the Regional Authority of Agriculture and Forests of the Lombardy Region for their help during the recording of the videos.

Here you can find the link to the video: [FLA intro INVALIS virtual site visits - YouTube](#)

Presentation of the Lombardy region by professor Anna Occhipinti (University of Pavia)

The FLA's scientific consultant, professor Anna Occhipinti, started her talk reminded how the site visits have been designed to strengthen the exchange of experience between members of the consortium representing their own national country and how FLA and the University of Pavia made the effort to convey some of the takeovers of the project meetings and activities in the virtual experience proposed through videos illustrating real life field activities.

In her talk, professor Occhipinti introduced the Lombardy region in terms of geographical settings (mentioning environmental threats and preservation actions), legal framework governing the management of IAS, biological invasions, spread, distribution and pathways, some examples of good practices against IAS in Lombardy and the rationale behind the selection of the two sites to be virtually visited.

Lombardy is one of the twenty administrative regions of Italy, located in the northwest of Italy and it covers an area of roughly 23,844 square kilometres (9,206 sq. mi). Its population is around 10 million people, accounting for more than one-sixth of Italian population.

In economic terms, Lombardy produces more than a fifth of Italy's GDP, making it the most inhabited, wealthiest and productive region in the Italian peninsula.

Lombardy is also one of the wealthiest regions of northern Italy in terms of biodiversity as it contains 24 regional parks, 67 natural reserves, 245 NATURA 2000 sites, covering 25% of its total territory.

Concerning the legal framework governing the management of IAS, Lombardy follows the Italian Legislative Decree 230/2017, in compliance of the national legislation with the provisions of regulation (EU) no. 1143/2014 of the European Parliament and of the Council of October 22th, 2014, which indicates several measures in order to reduce the introduction and spread of invasive alien species of Union concern, and specifically forbids:

- introduction or transit in the Italian territory;
- detention;

- rearing and cultivation;
- transport;
- selling or marketing;
- use, assignment free of charge or exchange;
- reproduction or spontaneous growth;
- release into the environment.

Moreover, a surveillance system by Regions, with the support of ISPRA (The Italian Institute for Environmental Protection and Research), is set up in order to monitor the national territory with the aim to immediately notify the appearance or re-appearance into regional territories of invasive alien species of Union concern.

Once the detection of an alien species of Union concern is confirmed, the DLg 230/2017 establishes the obligation of a timely eradication of its populations. The eradication activities are ordered by the MATTM (Italian Ministry of Environment and Protection of the Territory and the Sea), with the support of ISPRA, and must be carried out by the Regions and the Autonomous Provinces concerned, or by the National Parks.

The afore mentioned Decree also regulates any exception from the obligation of timely eradication, the emergency and management measures for invasive alien species of Union concern already occurring or at risk of introduction into Italian territory, measures to restore damaged ecosystems and cost recovery.

Another point introduced by the Decree is the obligation to report the detention of specimens of invasive alien species of Union concern and transitional provisions for non-commercial owners and commercial stocks.

The official controls at the Customs, Entry Points pursuant to Legislative Decree 214/2005 (in the case of plant species) and Frontal Inspection Posts (PIF) (in the case of animal species) are regulated and the obligations for importers or their representatives in customs are established.

The obligation to rapidly eradicate populations of invasive alien species of Union concern is established. The eradication measures are ordered by the MATTM, with the support of ISPRA, and must be applied by the Regions and the Autonomous Provinces concerned, or by the National Parks. Mayors shall guarantee access to private land for intervention by the operators when this is necessary to achieve eradication.

The Legislative Decree also regulates any exceptions from the obligation of rapid eradication, emergency measures and management measures for invasive alien species of Union concern already occurring or at risk of introduction into Italian territory, measures to restore damaged ecosystems and cost recovery.

In order to comply to the Italian Decree 230, the Lombardy Region proposes a series of strategies against some of the most relevant IAS in its territory.

Since 2008, in Lombardy, the regional law 10/2008 is in force. Two blacklists of alien species (one for animal species and one for plants), which must be object of monitoring and eradication, have been compiled. These lists were approved by the DGR 8/7736 in 2008 and the same law also forbids the introduction of alien species of plants, invertebrates, amphibians in the regional territory.

Moreover, the regional law 86/1983 indicates that the managing body of the area is responsible for the eradication of the invasive alien species in the protected areas and the sites of Natura 2000 network.

In order to satisfy the requirements of the EU Regulation 1143/2014 and the Italian Decree 230, Lombardy also proposes a few strategies against IAS that mainly focus on their early detection, eradication and management using the triage approach. Following this method, it should be possible to define the order of intervention according to the characteristic of the species, their impacts on the biodiversity and their capability of dispersion in the regional territory.

Furthermore, this approach considers the level of difficulty in the process of eradication and control of the species. Using this method, it is possible to classify IAS according to their level of invasiveness and, as consequence, decide which type of action should be necessary to use.

Moreover, other two important aspects are considered in the strategies: the improvement of awareness on the problems that IAS cause to the ecosystems and how to restore an ecosystem in order to favour the presence of native species (habitat restoration process).

For example, Lombardy has recently produced two strategies on the management of IAS: one on *Trachemys scripta* and another on *Sciurus carolinensis*. Both of them focus their efforts on the eradication and management of these species.

Furthermore, another strategy focuses on the restoration of the habitats suitable for the native species of crayfish *Austropotamobius pallipes*; this strategy also implicates the eradication of the other 4 species of alien crayfishes.

Finally, in 2019, Lombardy provided a list of invasive species of union concern in the region that was published in the Regional Decree n. XI/2658 – 2019. The result indicated that 39 out of 69 species of Union Concern are present in Lombardy.

The main pathways of introduction of IAS in Lombardy are pet commerce (e.g. *Trachemys scripta*), rearing fur animals (e.g. *Myocastor coypus*), aquaculture (*Procambarus clarkii*), recreational fishing (e.g. *Silurus glanis*, despite the fact that this is not a species of Union concern it causes many problems to the local fish fauna) and ornamental plants (e.g. *Heracleum mantegazzianum*) (figure 2).



Slider turtle *Trachemys scripta*



Coypu *Myocastor coypus*



Louisiana crayfish *Procambarus clarkii*



Giant hogweed *Heracleum mantegazzianum*

Figure 2. Some of the main invasive alien species in Lombardy Region

During her talk, professor Occhipinti also highlighted three good practices carried in Lombardy for the management of IAS.

The first one was the increasing awareness of the passengers travelling through the terminal of Milano-Orio al Serio airport on the problems caused by IAS. Europe is characterized by a territorial continuity, a high volume of trade, tourism and transport, and by a free trade regime, therefore a coordinated approach to IAS is required. Airports are one of the major pathways through which IAS are voluntarily or accidentally introduced in our country and thus, prevention measures are a priority of the EU strategy 1143/2014 and one of the key actions is the pathways management. In order to reduce the risk of introducing alien species, the Lombardy Region created in the international airport of Orio al Serio (the second in Italy for number of passengers and third for freight traffic) an integrated office that operates the controls of alien species at the entry, and actively informs passengers, customs inspectors and all the involved, on the problems caused by. T In the first phase of the project a dedicated office at the airport was designed, and the available data on passengers and freight traffic were analysed with the contribution of SACBO (Society for the Bergamo-Orio al Serio Civil Airport).

Once risks and procedures have been defined, the acquired expertise and the best work practices have been transmitted to the personnel working in the office in order to ensure the control of arriving passengers, to provide information to departing passengers and to foresee actions to be undertaken in urgent cases.

Moreover, with the aim of reducing the passenger gap of knowledge about the risks related to alien species introduction and subsequent spread, an information campaign has been launched for passengers, the SACBO company, airline companies, travel agencies, and the wider public as a potential traveller. A questionnaire and information materials have been produced to offer departing travellers a complete picture of the situation and the related risks.

As also recognized by the scientific community, informing citizens and authorities on the problems that these species cause to local biodiversity, ecosystem functioning and human health should be considered a successful action in the contrast of IAS. A further important action for the control of IAS is the prevention, such as the control and management of the vectors of IAS introduction

The importance of a scientifically correct communication to citizens/passengers. Increasing the awareness of the problems caused by IAS could represent the easiest way to prevent biological invasions: informed citizens will be more aware if they realize that with their behaviour, they can cause problems to local biodiversity.

The second good practice dealt with activities performed in order to reduce the abundance and spread of *Anoplophora chinensis* in the northern part of the Lombardy region

In infested areas, the Regional Phytosanitary Service has the responsibility for deciding which trees have to be cut down and, should signs of infestation be detected, the area of tree cutting has to be extended to 100m² around the infested trees.

Moreover, owners of infested private nursery tree areas are obliged to use insecticide treatments for the entire period of the presence of the adults of *A.chinensis*.

If a public or private subject decides to cut down the infested plants independently, it must do the following: a) communicate to the Regional Phytosanitary Service the operational plans at least 2 working days in advance, b) destroy all waste wood by incineration or chipping (in the case of incineration, it is necessary to produce the traceability of destruction), and c) destroy all the stumps and roots with a diameter of at least 1 cm. Alternatively to the final point, it is possible to devitalize stumps and roots through an intervention with a devitalizing substance. After

devitalizing the stump and the surrounding land up to about two meters from the stump or from the last outcropping root, it must be covered with a fine knitted wire mesh. The net must remain in situ for at least two years. The coverage net must be checked in the period from June to the end of August and maintained efficient.

Finally, it is forbidden to move wood trees belonging to several sensible genera outside the infested area. An intensive awareness campaign was promoted to sensitise the citizens to the problems caused by the long-horned beetle.

The actions performed against *Anoplophora chinensis* have managed to contain its expansion in Lombardy, limiting its presence only to those areas where it was accidentally introduced for the first time. Nowadays in Lombardy, the long-horned beetle is not present in the rest of the region because of the actions performed.

Considering that *Anoplophora chinensis* is a serious threat for ornamental plants, fruit plants and forestry ecosystems, the active contrast to this species is crucial and it is necessary to use all possible actions that can limit its expansion. The actions performed by the Lombardy Region Phytosanitary Service cover all the needed aspects to contrast an invasive alien species, from eradication and monitoring activities to increasing citizens' awareness.

The last good practice was the program launched by the Lombardy Region and the Ticino regional park for the early detection of *Popillia japonica*, monitoring the distribution and established populations.

The practice includes 3 surveillance strategies and procedures: a) detection and monitoring of larval specimens of *Popillia japonica* in areas that have already infested to evaluate the extent of infestation. Monitoring activities comprise field surveys in sites with high humidity, such as grassy meadows, which are known to be the ideal environment for this species to lay its eggs; b) visual inspections of adult specimens of *P. japonica* during the time period when larvae transform into their adult form by a process of metamorphosis and begin to fly. These activities help to identify infested areas and to provide indications on species' population density. Further to visual inspections, adult monitoring includes the placement of traps in infested areas to facilitate captures and gradually control established populations and likely eradicate them. Traps are equipped with a GPS system to track species' movement; c) risk analysis and vulnerability assessment of surrounding sites currently uninfected by *Popillia japonica*; they include procedures to identify the sites within an infested area that are more likely to act as corridors of passive dispersal.

Regional Authorities have managed to define the areas which were infested by this species. Moreover, they have produced a database and developed a code of conduct for infested areas in order to limit its dispersal, prevent new introductions, and guide appropriate management measures to control or eradicate established populations. Finally, based on risk assessment results, regional and local authorities have adopted a series of measures to minimise the likelihood of spontaneous, unintentional spread to uninfected areas.

Despite the fact that up to now *Popillia japonica* has mainly been detected in northern Italy, evidence demonstrate a high transferability potential across Europe. Therefore, this practice provides a framework to define the geographic extent of species distribution, to assess the risk of new incursions, to prevent introduction at source, and to guide appropriate management

measures. It is based on standardised procedures, easily adjustable to territorial specificities and it is generally effective for plants, animals and pests in terrestrial ecosystems.

Finally, the importance of safeguarding the local biodiversity and of finding a different approach to the management of IAS was pointed out. The Lombardy Region, following this concept, opened a call of tender specifically dedicated to the maintenance of natural habitats and local biodiversity. It includes 9 actions, out of which one is specifically dedicated to the eradication/containment of 6 particularly invasive alien plant species. Furthermore, other actions are aimed to protect various aspects of biodiversity, such as: ecological connections within the ecosystem, bats, amphibians and reptilians protection (including the control of *Trachemys scripta* spp.) and the conservation of special valuable habitats, like moorlands and oak forests.

In this context, the proposed virtual site visit aimed to provide a different point of view in the management of IAS, using examples of nature conservation that represent a positive story telling. «Reinforcing» native endangered species by improving the resilience of their habitat represents an indirect contrast of invasive species. Moreover, these types of actions are more prone to raise public awareness and citizens participation.

The first video: Action for the safeguard of the local fish fauna

The first video was recorded within one of the Ticino Regional Park centres called “La Fagiana”, 30km from Milan.

Here, a fish hatchery was built in 2004 thanks to a LIFE project for the conservation of the Pigo (*Rutilus pigus*) and the endemic Marbled trout (*Salmo trutta marmoratus*).

Since then, this structure has been used for various projects organised by the Ticino regional Park and the European Community.

At the moment of the recording, thanks to the LIFE project BIOSOURCE, the Adriatic sturgeon, a species considered extinct in the Adriatic basin, and the Beluga sturgeon, were breeding.

In these last few years, there has been evidence that the repopulation activities of the Adriatic sturgeon are giving good results because several natural reproductions have been observed in a few parts of the Ticino river. Instead, for the Beluga sturgeon experiments are still in an initial phase.

Moreover, the Ticino regional park is also actively contrasting alien species, especially the Wels catfish, using the electric fish techniques in order to remove as many specimens as possible.

At the end of the video, the Ticino regional Park underlined how important is to share all the information related to the contrast of IAS and what the Authorities are doing in order to safeguard the local fauna. Sharing experiences is the best way to contrast IAS and create awareness.

The video can be seen at the following link: [Invalis' virtual site visit \(day1\) - YouTube](#)

The second video: Actions for the safeguard of the autochthonous crayfish

For the second part of the virtual site visit, FLA was hosted by the Regional Authority of Agriculture and Forests of the Lombardy Region (ERSAF) which, in cooperation with the Lombardy Regional authority in a European LIFE project called Gestire 2020-Naturachevale, showed their activities for the safeguard of the local freshwater crayfish *Austropotamobius pallipes*.

This is an endangered species in the IUCN red list, due to its complex and delicate ecology. Moreover, the decline of *A. pallipes* is related to the arrival of alien crayfish *Procambarus clarkii*, mainly from North America. The invasive alien crayfish has a more opportunistic behaviour: its reproduction is faster than the autochthonous species and it produces even more eggs. Moreover, it is the vector of the crayfish plague, a water mould that infects autochthonous crayfish, causing the extinction of entire local populations in a few days.

Nowadays in Italy, the alien crayfish has invaded all the sub-alpine lakes and all the freshwater environments of the Po river plain while there are just a few relict populations of the autochthonous species located in the foothills between 500 and 1000m above sea level.

One of the aims of ERSAF activities here is to safeguard these populations and guarantee a good genetic exchange between them. For this purpose, the experts of the LIFE project GESTIRE 2020 have identified some sites of the NATURA 2000 network where they reintroduce the crayfish or reinforce the local populations that are threatened by invasive crayfish or environmental degradation and water pollution. To contrast the invasive alien crayfish, the LIFE project GESTIRE 2020 has also produced for each alien crayfish species specific guidelines for their control and, where possible, their eradication.

Moreover, the LIFE project GESTIRE 2020 financed actions for the eradication of the alien crayfish and moreover, this project promoted the restoration of some areas of the NATURA 2000 network, where new population of *Austropotamobius pallipes* were reintroduced.

Finally, they underlined that another relevant part of this project is the training scheme for volunteer staff, such as the regional ecological guards. Their role is to help the crayfish relict population when any environmental problems become too serious such as seasonal drought, episodes of acute pollution or an outbreak of the crayfish plague.

The video can be seen at the following link: [INVALIS' virtual site visit \(day2\) - YouTube](#)

Final consideration

Considering that most of the Countries of the INVALIS consortium share the same alien species and the same problems in their management, all the partners found the practices proposed very interesting and they will try to propose them to their stakeholders.

Moreover, during the final discussion FLA proposed to all the participants to fill in a questionnaire using the platform Google form:

Please evaluate the importance of these actions using a range from 1 (most important) to 5 (less important)

Acton/Country	Greece	Corsica	Romania	Spain	Latvia	Portugal	Italy
Citizen involvement	5	5	4	5	5	-	5
Increase awareness	5	5	5	5	5	-	5
Eradication attitude	3	4	4	4	4	-	5
Private involvement	3	3	4	4	4	-	3
Eradication	4	4	5	4	5	-	3
Control	5	5	5	5	5	-	4
Action on vectors	4	5	4	5	4	-	5
Environmental restoration	5	4	4	5	5	-	5

The answers collected by FLA highlighted useful information on the practices proposed during the virtual site visit.

All partners agreed that in the management of alien species, it is fundamental for citizens to be made aware of the problems caused to the local biodiversity by IAS: incisive actions are possible only if they are supported by society. Hence, it would be beneficial to increase manager and citizen awareness on the ecological and economic problems caused by IAS. There are different ways to involve citizens in environmental projects, from citizen science projects monitoring alien species, to dedicated events with the aim of increasing citizen knowledge on the impacts of IAS on the environment.

This aspect could be even more important (or at least of the same importance) in comparison to technical and scientific aspects.

Furthermore, an early detection, eradication and control actions are essential management tools to protect the native biodiversity, but they should be encouraged only where appropriate and feasible. However, they can only be carried out for a limited proportion of the IAS established in a country: for many long-established IAS present in the wild, eradication is simply not feasible.

If from an ecological point of view eradication is feasible, there should be other conditions that favour this process such as an adequate public support (e.g. eradication attitude).

Finally, environmental restoration is considered important too, but it would require long-term funding security and a longer-term perspective, which are rarely available, except in some national programmes.

In conclusion, Lombardy Foundation for the Environment thinks that the virtual site visit in Lombardy provided interesting practices for the safeguarding of the local biodiversity and it shared useful ideas for the management of invasive alien species.

The recording of the entire meeting is available on Youtube platform using the following link:

<https://youtu.be/goCoKkDN2P0>