



N.2
JUNE 2020

News

Enhancing Biodiversity by Restoring Source Areas for Priority and Other Species of Community Interest in Ticino Park

LIFE Ticino Biosource is a 4 year long project (total budget: 3.877.000 euros) for the conservation of biodiversity in Ticino Park, co-funded mainly by the European Commission, with the contribution of Ticino Park, Fondazione Cariplo, GRAIA and Fondazione Lombardia per l'Ambiente, the last two being as well partners of the project. The project started in October 2016 and will finish in September 2020.



4 OTTOBRE 2019
Centro Parco «La Fagiana»
PONTEVECCHIO MAGENTA (MI)

RICHIESTA CONFERMA DI ADESIONE ENTRO IL 3 OTTOBRE 2019

CONFERMA LA TUA PRESENZA >

VISUALIZZA LA MAPPA >

per informazioni scrivi a: fauna@parcoticino.it

Programma:

- ore 9.30 - L'esperienza del Parco Conservato della Valle del Ticino
Progetto LIFE Ticino BIOSOURCE
Claudio Barberi, Istituto Delta - Project Manager
- ore 9.45 - L'esperienza del CNR
Progetto IdroLIFE
Pietro Volta, CNR - Project Manager
- ore 10.00 - L'esperienza del Research Institute of Slovenia
Project LIFE for LASCA
Kaja Pliberek, Fisheries Research Institute of Slovenia - Project Manager
- ore 10.15 - L'esperienza del Canton Ticino
Progetto INTERREG SHARESALMO
Claudio Pizzi, Comune Ticino - Responsabile Ticino
- ore 10.30 - L'esperienza del CERAM (Spagna)
Project LIFE MIGRATOBRE
Marta Oriol Rigo, CERAM Centro Español de Recursos Acuáticos - Coordinator of the CERAM
- ore 10.45 - L'esperienza del Molise
Progetto LIFE Nat.Sal.Mo
Pier Paolo Giordano, Molise - Mediterranean Fish Research Group
- ore 11.00 - La collaborazione tra il Parco e il Comune di Magenta
Progetto LIFE BARBIE
Francesco Nanni Merzani, Università di Parma - Project Leader
- ore 11.15 - L'esperienza della Lombardia
Progetto LIFE Con.Flu.Po
Davide Bardi, Regione Lombardia - Financial Manager di progetto
- ore 12.00 - L'esperienza del Parco Conservato della Valle del Ticino
La proposta LIFEEL per la conservazione dell'Anguilla europea
Claudio Barberi, Università degli Studi di Bologna
- ore 11.45 - Iniziative di ricerca realizzate con lo strumento LIFE
Claudio M. Pizzi, Molise - GRAIA srl
- ore 12.00 - L'esperienza del Parco Conservato della Valle del Ticino
Andrea G. Casoli, Biologo - Conservazione Parco del Ticino
- ore 12.15 - CHIUSURA LAVORI
Il contributo del Programma LIFE alla conservazione della fauna ittica
Seguono refresh e buffet offerto dal Parco del Ticino con i prodotti a marchio «Parco Ticino»

Partner e sostenitori:

- Parco Ticino
- Fondazione Lombardia per l'Ambiente (FLA)
- GRAIA
- Fondazione CARIPLO

LIFE TICINO



Letter
English

A FIRST ASSESSMENT THREE YEARS AFTER THE BEGINNING OF THE PROJECT

On October 4, 2019, a workshop was held at the Park Centre “La Fagiana”, organized by the Ticino Park as part of the E2 Action, entitled “Life Projects to Protect Fish Fauna”.

The aim was to create an opportunity to meet, knowledge, information and exchange of good practices and expertise among technicians, researchers and administrators engaged in conservation actions that are similar to those undertaken within the BIOSOURCE project or engaged in LIFE projects that share an interest in the same target species or habitats. The workshop was attended as speakers by 9 representatives of European projects (LIFE or INTERREG projects) which were being implemented, recently completed or even at the proposal stage. On this occasion, in addition to the Life Ticino BIOSOURCE, the following projects were illustrated:

- LIFE-Nature project “IdroLIFE”, presented by the project manager Pietro Volta, researcher at the CNR-IRSA;
- LIFE-Nature project “LIFE for LASCA”, illustrated by the project manager Kaja Pliberek, from the Fisheries Research Institute of Slovenia
- INTERREG project “SHARESALMO”, presented by



Marc Ordeix Rigo at the Workshop (photo Ticino Park).

Cristophe Molina, technician at the Fishing Office of Canton Ticino (Switzerland), project leader for the Swiss part;

- LIFE-Nature project “MIGRATOEBRE”, presented by Marc Ordeix Rigo, coordinator at CERM (Centre d’Estudis dels Rius Mediterranis), coordinator beneficiary of the project;
- LIFE-Nature “Nat.Sal.Mo” project, presented by P- LIFE-Nature project “LIFE BARBIE”, illustrated by the project leader Francesco Nonnis Marzano, from the University of Parma
- LIFE-Nature project “Con.Flu.Po”, presented by the Financial Manager of the project Davide Ilardo, from Lombardy Region
- LIFE-Biodiversity project proposal “LIFEEL” for the conservation of European Eel, illustrated by Oliver Mordenti, researcher at the University of Bologna, potential project partner.

The workshop fully confirmed the expectations, proving to be an opportunity for a fruitful exchange of experiences and skills and deepening



Workshop participants (photo Ticino Park).

for all participants, 75 people including researchers, technicians and administrators from different parts of Italy and Europe. This issue includes summaries of all the speeches presented during the workshop.

LIFE15 NAT/IT/000823 IDROLIFE

Conservation and management of freshwater fauna of EU interest within the ecological corridors of Verbano Cusio Ossola
Pietro Volta, CNR-IRSA

The project involves four beneficiaries: CNR-IRSA as coordinator, the Val Grande National Park, the Province of Verbano Vusio Ossola and GRAIA srl. The project budget is 2.076.000 Euros with a substantial contribution of private cofinanciers such as FONDAZIONE CARIPLO, ENELGREENPOWER and other hydroelectric companies. Four Natura 2000 areas are included in the project: SIC Fondo Toce IT1140001, SPA IT1140013 Lago di Mergozzo and Montorfano, SPA Fiume Toce IT1140017, SIC IT114011 Val Grande.

The Province of Verbano Cusio Ossola (PROVCO) is a territory rich of streams and lakes, suited to hosting a large number of aquatic species, some of which are of remarkable naturalistic importance, enough to be included in the European lists of protected species (Habitat Directive 92/43/EEC). The presence of many pressures, among which habitat alteration and diffusion of invasive alien species, have played a prominent role in putting at risk the aquatic fauna of the VCO, with effects on native sensitive species, such as *Salmo marmoratus*, *Rutilus pigus*, *Chondrostoma soetta*, *Cottus gobio* and *Austropotamobius pallipes*.

That’s why, IdroLIFE aims to improve the conservation status of the local populations of these species in Natura 2000 sites of Verbano Cusio Ossola Province, contributing to halt the loss of aquatic biodiversity.

The Project activities are addressed mainly to the the water corridors of Toce river and San Bernardino stream and Mergozzo lake, acting concretely with both structural interventions and faunal actions, namely:

- the defragmentation of the two rivers mentioned above through the realization of 6 fish passes (5 on Toce and 1 on San Bernardino) and
- the direct support to native species through artificial reproduction, breeding and restocking with animals genetically suitable and through control of exotic invasive species.

At present the following concrete results have been already achieved:

- renovation of the hatchery located at the CNR-IRSA building in Verbania
- repopulation of 50000 *Salmo marmoratus* genetically tested in Toce River
- repopulation of 1000 *Telestes souffia* and 800 *Cottus gobio* in SIC Val Grande
- repopulation of 1000 *Rutilus pigus* and *Chondrostoma soetta* in SPA Lago di Mergozzo and Montorfano.
- removal of ca 1 tons of alien invasive species from the project sites.
- building of the 1 fish passages in the San Bernardino river.

Toce River and and *Salmo marmoratus*.





A specimen of South European nase [Lasca] (*Protochondrostoma genei*).

Kožbjanšček Stream.

LIFE16 NAT/SI/000644 LIFE FOR LASCA

LIFE SAVING LASCA. Urgent measure to conserve nearly extinct species Protochondrostoma genei
Kaja Pliberek, Fisheries Research Institute of Slovenia

Fisheries Research Institute of Slovenia in collaboration with the Italian partner Parco Lombardo della valle del Ticino and local Angling Clubs is trying to prevent the extinction of South European nase [Lasca] (*Protochondrostoma genei*). The project is called Life for Lasca. This is attempted by breeding of Lasca in captivity and reintroduction of specimens into tributaries of the Vipava River. Vipava river basin is the only Nature 2000 site for this species in Slovenia.

Lasca is a medium - small size fish species which measures up to 20 cm in length with a weight of about 100 g. Rare specimens can reach 25 – 30 cm in length. Body is slender with small scales. Its key morphological features are: inferior mouth, arched (“U”) lower lip with thin but well developed cornified pad, 50-62 lateral line scales and 8 ½ branched dorsal rays. Body coloration is silver, ventrally fading to white, dorsally to greenish-grey with broad dark mid-lateral stripe from head to caudal base; base of pectoral, pelvic, and anal fin often in red coloration.

Lasca only lives in Slovenia and Italy. Its populations are in a drastic decline. According to current data, Slovenian distribution of Lasca is narrowed to the stream Reka and its tributary Kožbjanšček located in the region Goriška Brda.



In Italy it is found in some watercourses in the basin of river Pad. So far the only confirmed reason for species disappearance is the presence of alien species. In Slovenia the main threat is the Common nase (*Chondrostoma nasus*), due to intraspecific competition with Lasca. During the project we are establishing a breeding program of Lasca in captivity. Source specimens are obtained from the river Pad basin, because the Slovenian population is extremely vulnerable. Active breeding ensures reintroduction of specimens and reinforcement of existing vulnerable Lasca populations. Specimens are be reintroduced into their former distribution sections of the Vipava river basin. Following success, same practice will be implemented in basins of river Soča and river Pad. Extreme decline of Lasca population is an indicative example of consequences from entry of non-indigenous species into an environment. For this reason the project includes key participants, anglers and school youth. Anglers are helping with Common nase reduction activities. School youth and other interested public are invited to educational fieldwork activities. In long term, collaboration with anglers and youth will contribute and help to reduce negative anthropological activities in this field.



Thymallus aeliani in Ticino basin (Swiss).

Laveggio Stream (Canton Ticino, Swiss).

INTERREG PROJECT SHARESALMO

The experience of Canton Ticino, Workshop LIFE Project on the protection of the fish fauna

SHARESALMO touches a wide area including the cross-border territory of the big perialpine lakes, traversed by the Ticino river, ecological corridor of great importance for the European biodiversity and the nearby Valsesia. The whole project area counts more than 30% of the Italian freshwater fishes including the Salmonids, group of species of capital interest on both their importance for the biodiversity, as well as the professional and the recreational fishery. The presence of several barrages and dams into the rivers, which block the natural migration corridor and disrupt the natural behavior of the naturally-migrating Salmonids, the introduction of alien species and uncoordinated management strategies between the several authorities led to a decline of the native species of this group (grayling, marbled trout and lake trout), engendering negative consequences for the ecosystems, the fishery and all environmentally and economically related activities.

In the frame of this project will be performed direct interventions on the species, as for example supportive stocking and reintroduction of grayling and lake trout in the Ticino river, in the Moesa as well as the lakes Ceresio, Verbano and Lario. A real fight action on the European catfish will be performed, helping developing detailed



control protocols to be exported to other similar contexts. Two fish ladders will be built on the Sesia river, restoring the natural connectivity for the grayling and the marbled trout and extending the potential range in the river. Furthermore the first cross-border platform for the monitoring of fish movements by means of hydrophones, PIT tags and Alizarine-red stain mass-marking.

In the frame of acoustic telemetry will be marked 185 adult wild lake trout, captured either by the fishermen or electrofishing campaigns. Hydrophones will be installed in strategic locations (inlet Ticino river, outlet Ticino river, Cassarate mouth, Melide bridgedam, Laveggio mouth, Vedeggio mouth and Foce mouth).

In the frame of PIT-tag monitoring will be marked 15'000 fishes : 14'000 from the local fish breeding plants and 1'000 from wild captures. Five antennas will be installed, of which 4 will be located near artificial fish ladders (Porto della Torre, Prata, Creva, Lavena Ponte Tresa) and one antenna will be set up in the Laveggio river.

The mass marking by means of Alizarine red-stain will be performed on all stocked fishes in the Lario lake.



Sampling in Ebre River.

Elver release in the river.



LIFE13NAT/ES/000237 LIFE MIGRATOEBRE

Migratory fish recovery and improved management in the final stretch of the Ebre River
Marc Ordeix Rigo. Centre d'Estudis dels Rius Mediterranis - CERM

The project aims to recover the healthy and sustainable population of European sturgeon (*Acipenser sturio*), European eel (*Anguilla Anguilla*), twaite shad (*Alosa fallax*) and sea lamprey (*Petromizon marinus*), migratory species present in the lower Ebre river and its Delta. The project area is settled in the Ebre river, the biggest one in the Iberian Peninsula due also to its annual discharge volume (18,217 HM³/year) and forming the fourth largest delta in the Mediterranean basin (350 km²).

This area worth its richness in terms of flora and fauna and due to its availability of fresh water and fertile area. The specific project areas are Xerta dam, Ascò lock and Flix dam for a total targeted surface of 48,687 ha.

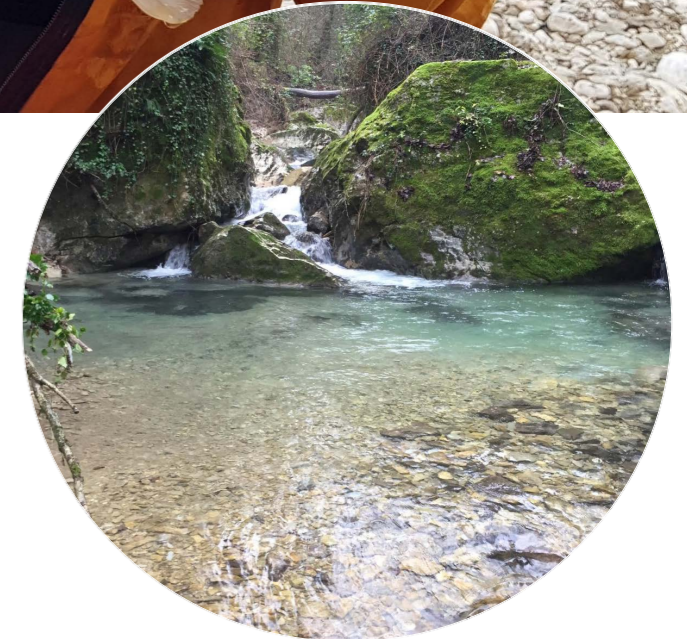
Specifically, the project will implement mitigation measures in relation to improve the hydro morphology of the rivers, by acting on connectivity and on fish passage issues associated with the Water Framework Directive and the European Eel Recovery Plan. Indeed, the ecological importance of connectivity must be improved to adapt obstacles in the final traits of the rivers (Xerta's weir, Ascò's weir, and Flix dam). In this way, an

exemplary project at a local scale is going to be developed, to promote ecological connectivity and become a lesson for other principal rivers as well. The project has foreseen the restock of sturgeon with releases in the lower Ebre and expect the presence of reproductive individuals in the area in 20-30 years. Not only, sturgeon, but also twaite shad, sea lamprey and European eel presence will be improved thanks to the development of ecological connectivity in the main rivers' obstacles. Furthermore, the project will increase the spawning area of the species above mentioned, to achieve the objective to make available 64 km of new river habitat in 4 years. Beyond conservation actions focusing on implementation of connectivity and restock of the sturgeon, monitoring phase are foreseen too in order to monitor pilot project of the sturgeon's restock, target fish population, the status from the ecological point of view of the final stretch of the river, monitor the ship locks and its management and assess the socio-economic impacts.



Mediterranean trout (*Salmo macrostigma*).

Volturno River.



LIFE17NAT/IT/000547 LIFE NAT.SAL.MO

*Recovery of *S. macrostigma*: application of innovative techniques and participatory governance tools in rivers of Molise*
Pier Paolo Gibertoni, Mediterranean Trout Research Group

LIFE Nat.Sal.Mo project's objective is to guarantee the recovery and conservation of *Salmo macrostigma* species and its habitat in Biferno and Volturno basins. Given the high presence of Atlantic trout, there are small populations with genetic integrity available for a recovery plan, it would be suitable to act on the local population instead of acting on reintroduction of specimens from other basins.

The project identified two principal populations in the two above mentioned basins. Previous studies reported the migratory behaviors of this species in the reproductive times and the project finds out that some nucleus are resisting and are conserving the original genetic and characteristics. Every species has a particular role in the ecosystem in safeguarding biodiversity, to it is necessary to build actions aimed in achieving this through innovative techniques and participative governance tools. There are many threatens affecting *S. macrostigma* which is endemic of the Mediterranean basin and which is considered

vulnerable and in extinction in Italy because of genetic introgression, loss of natural habitat, lack in fish regulation. The project implements innovative techniques, methodologies and recent biotechnologies that have never be applied to *S. macrostigma*. Nowadays, programs are aimed to recover and conserve different autochthonous salmonids species by inserting species with the correct genome but that have been bred artificially. Nat.Sal. Mo's objective aim to restore the genetic integrity of *S. macrostigma*'s population by acting on natural reproduction between trout with the suitable genetic heritage and by acting on selective access on the main reproductive sites; enlarge the area of *S. macrostigma* after having implemented a correct requalification of the habitat; reduce, as much as possible, the not adaptive selective pressure by implementing fertilized eggs in the sites; guarantee the correct involvement of local community, in particular by establishing "rivers contract" to observe good practice and respect of rules in order to safeguard species and habitat.



Sampling in Trebbia River.



Enza River.

LIFE13NAT/IT/001129 LIFE BARBIE

Conservation and management of *Barbus meridionalis* and *Barbus plebejus* in the Emilian tributaries of Po River

Francesco Nonnis Marzano, University of Parma

The common barbel (*Barbus plebejus*) and the southern barbel (*Barbus meridionalis*, syn. *B. caninus*) are two species that are facing a considerable decline in their populations; indeed, they are defined by the IUCN Red List as “vulnerable” and “endangered” respectively. Life Barbie main objective is the conservation and recovery of these native populations in the Emilia-Romagna region, specifically in tributaries of the Po river and 14 sites of the Natura 2000 network. IUCN identifies the threats that affect the survival of these species together with those alterations the habitat and involved in their fragmentation. The investigated area is affected by excessive intakes of water, with consequent reduction of its flow, this impact on the use of water for human activities and on species; fragmentation of habitats and populations due to the broken of river continuum with barriers taking to discontinuities in migration behavior and losing of genetic diversity. Another threat is given by the alteration of habitat because of pollution, extraction of materials, overbuilding and urbanization. Of course,

also introduction of alien species, with a bad management of the fauna for fishery purposes, is a huge threat translating in alteration of interspecific relationships, genetic pollution, pathogens spreading.

In conclusion, climate change act in damaging habitat and species, indeed it contributes in form of dry areas/river fragmentation, reduction of water flow, a variation of vital conditions for species.

A study of density and distribution has been carried out, together with analysis of threats to propose the following activity in compliance also with IUCN’s guidelines: to create new populations and/or reinforce the existing one through specific in situ interventions; to identify the threats to the survival of the species at a local scale, open discussion among stakeholders aimed to reduce those threatens and apply last governance tools for the protection of the species; eradicate and control of alien species; establish guidelines to conserve and implement a sustainable management of species and transfer best practice.

LIFE FOR BLUE CORRIDORS IN THE PO RIVER BASIN

Cesare M. Puzzi, G.R.A.I.A. srl

During the early 2000’s one of the first Life projects in Europe about fish conservation was the LIFE2000NAT/IT/7268 “Conservation of *Salmo marmoratus* and *Rutilus pigus* in the Ticino river”. It exceptionally funded a specific action aimed at the feasibility plans of the two fish passes necessary to give the full free fish migration along the Ticino river, at the Panperduto dam and Porto della Torre dam. Thanks to these feasibility plans, in the next 7-8 years the fish passes were built with national and regional funds, and H24 videomonitoring for years (and still they are). The Ticino river became free for fish migration from the Lake Maggiore to the Po river. In addition, the river corridor connected the Lake Lugano too, thanks to the building of the two fish passes along the Tresa river, at the Lavena Ponte Tresa dam and the Creva dam (both H24 videomonitoring) applying for different funding such as INTERREG I-CH, FEP (Fisheries European Fund), Cariplo Foundation, regional funds.

Fish passage at Isola Serafini Dam.

Isola Serafini Dam,
in the Po River.



But the final challenge was to connect the Ticino river basin to the Adriatic Sea, and it became possible with the Life project ConFluPo, that allowed the planning, the building and the videomonitoring of the Isola Serafini dam fish pass: an impressive pass connecting the artificial and the natural branches of the Po river created by the dam and the hydropower plant in the 1960's to the upper main course of the Po river. The double pass has a total length of about 650 m, is a pool and traverse fish pass, and each pool is about 5 * 3 m to allow the movements of the potential very big fish inhabiting the river, such as the sturgeons. The monitoring of the Po-Ticino river corridor had been carried on in the ConfluPo: the ante operam started on July 2013 on the 4 fish passes along the Ticino and the Tresa rivers; the post operam started on March 2017 up to the end of the project, on June 2018, but still continued in the after life plan, checking the videos one week/a month for the following 2 years. During the ante operam, more than 250.000 fish were recorded, belonging to more than 20 species: the most abundant was the *Rutilus rutilus*, followed

by *Barbus plebejus*, *Barbus sp.*, *Squalius cephalus*, *Telestes muticellus*. In the post operam, at the Isola Serafini fish pass the most abundant fish species is the *Barbus sp.*, surprising followed by the *Liza ramada*, a brackish water fish coming from the Adriatic Sea in spring for feeding, and returning to the sea in late summer/early autumn for spawning. Tens of thousands of fish, belonging to more than 20 fish species, demonstrated the full functionality of the Isola Serafini fish pass. But the great surprise came in the after life monitoring, in spring 2019, when 2 unbelievable sturgeons *Huso huso* have been recorded: they came from the Ticino river where the Park is involved in the challenge of the *Huso huso* reintroduction – it was extinct in the Po river basin – and in the Life Ticino Biosource project released 20 *Huso* of about 20 Kg in the Ticino river, with the implanted radiotransmitters, and 2 of them have been videorecorded at the Isola Serafini fish pass, easily moving in downstream migration, and have been recorded a few days later in the Po river Delta, close to the Adriatic Sea, by the hydrophones positioned in the ConfluPo project. These are very encouraging results!

Liza ramada (left) and *Huso huso* (right) specimens passing through the fish passage at Isola Serafini (photo GRAIA).

11:28:44



21:50:35



Coordination: Cristina Barbieri - Editing: Cesare Puzzi
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