



AFTER LIFE PLAN FOR LASCA (*Protochondrostoma genei*) CONSERVATION



LIFE for LASCA Project
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Picture on the cover: Adult Lasca specimen (*Protochondrostoma genei*). Author: Jurij Mikuletič.



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Preface

This After Life Plan for Lasca conservation is the last deliverable of the LIFE for LASCA project. It presents the project background and its achievements at the official end of the implementation. The final aim of this plan is to illuminate how the project objectives will be continued and monitored for the near future (at least within next five years). Long - term conservation measures needed for Lasca conservation are included in the Action Plan of the project.



1 Project background

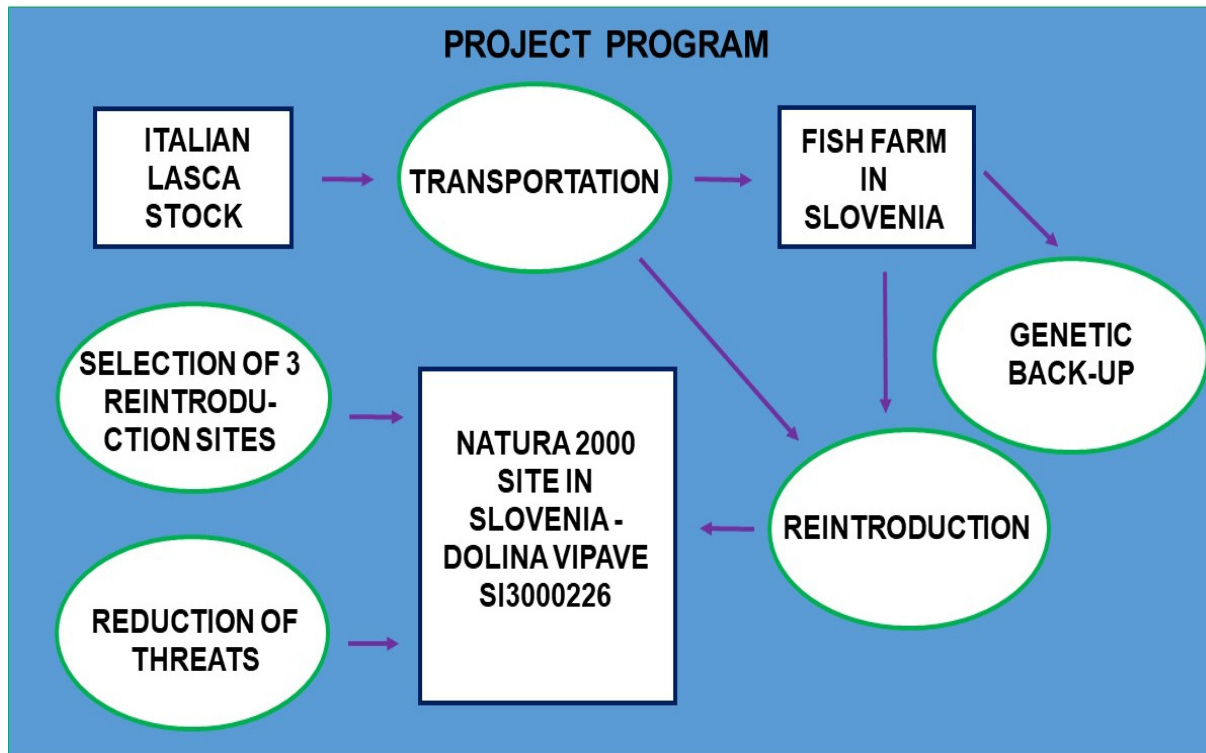
South European nase or Lasca, *Protochondrostoma genei*, is an endemic species of the Adriatic basin. It is present in Italy and Slovenia. In 1960s, it was introduced into Tyrrhenian Basin (Kottelat & Freyhof, 2007; Carossi et al., 2022; Puzzi et al., 2021).

In IUCN Red List, the conservation status of the species is listed as »Least Concern« with »Decreasing« trend (Crivelli, 2006). However, the status assessment dates to 2006 and it needs to be updated. After reporting under Article 17 of the Habitats Directive for the period 2013 – 2018, the conservation status of the species is classified as »U2 - Unfavorable – Bad« with poor prospects for the future. Recent reports show, the species is generally in a poor conservation status, with fragmented populations and distribution range shrinkage (Puzzi, 2022; Pliberšek & Tavčar, 2022). Permanent fragments of populations can be found in certain regions within Po river basin and in Tyrrhenian basin where the species was introduced (Puzzi et al., 2021). In the marginal areas, where Lasca is still found, finds are mostly rare with individual specimens (Bertoli & Pizzul, 2022; Puzzi, 2022; Pliberšek & Tavčar, 2022). In the most Eastern distribution range of the species, in the Vipava valley (SI3000226) in Slovenia, the species has even disappeared in recent past (Povž, 1983; Pliberšek et al., 2014; Podgornik et al., 2014). Consequently, in Slovenia, only one extremely small population (N < 200 spec.) in Brda region (outside Natura 2000 network) remains present. Moreover, due to habitat loss, this small population is divided into two separate meta-populations, which together inhabit not more than 6 km of riverbeds (BiosWeb; Pliberšek, 2021). The situation in Slovenia has become urgent and thus measures were urgently necessary.

The main goal of LIFE for LASCA project [LIFE 16 NAT/SI/000644] was to save Lasca in Slovenia and thus contribute to better conservation status of the species in the whole distribution range. To improve the conservation status of any endangered species means by preference to define and face its pressures and threats. For Lasca, it is reported, that the main cause for the species decline is the synergistic influence of different pressures, such as habitat fragmentation, alien species presence, habitat degradation and habitat loss (Puzzi et al., 2021; LIFE for LASCA, Bertol & Pizzul, 2022; Carosi et al., 2022). In the Vipava valley, Lasca disappearance is connected to widespread habitat degradation and habitat loss with combination with the non – native fish species Common nase (*Chondrostoma nasus*) presence. Common nase compete with Lasca for food and space. It was introduced in Vipava valley in 1960s by anglers to stimulate angling experiences.

2 Project achievements

The aim of the project LIFE for LASCA was to repopulate Natura 2000 site Dolina Vipave [SI3000226] from where Lasca has disappeared in recent past. We have achieved this goal by realizing the following project program:



In project two partners successfully collaborated, Fisheries Research Institute of Slovenia (FRIS) as a Leading beneficiary and Parco Ticino from Italy as an Associated beneficiary. For the project implementation also local help and support was crucial, especially the help of local angling clubs Ajdovščina, Renče and Soča - Nova Gorica.

Project objectives achieved:

- *Establishment of Lasca captive breeding in Slovenia* based on the past Parco Ticino experiences (LIFE CON. FLU.PO.). The breeding started in 2018 and it was supported by using wild breeders from Po river basin. In Slovenia, we have performed 4 successful consecutive spawning seasons (2019 – 2022) producing 41.000 Lasca offspring.
- *Based on Habitat and Fish community surveys we have selected three the most suitable watercourse sections for Lasca reintroduction* – within streams Močilnik, Jovšček and Ozlenšček.



- *Successfully faced pressure/threat; alien Common nase (Chondrostoma nasus).* On 219 reduction sites, we have removed 11.191 alien specimens. During implementation, we focused the reduction efforts towards specific periods and strategic sites to achieve results that are even more efficient. We removed Common nase specimens more intensively during spring and autumn, when specimens group at larger numbers in shallows for spawning and on feeding grounds. Moreover, we repressed the Common nase population also at crucial areas preventing intrusion of large specimen numbers into Lasca release sites. In the areas of intensive reduction procedures, the number of Common nase specimens decreased by 88%.
- *Successfully repopulated three selected sections within Močilnik, Jovšček and Ozlenšček streams within Natura 2000 site [SI3000226].* We have released 136.052 specimens of different ages in the wild; 40.000 specimens arrived from Slovenian fish farm, while 96.052 specimens were transported from Italy (Parco Ticino fish farm). The first Lasca release into the wild was performed in autumn 2019. During monitoring surveys, we have found 1.019 Lasca specimens in the nature, meaning Lasca specimens survived all extreme weather conditions, like cold winter water temperatures, floods and droughts. Even more, we detected that released Lasca specimens successfully spawn in the wild. In late spring 2021, we have found Lasca specimens in Jovšček stream just before spawning. Males exhibited breeding colors and tubercles, while females were full of eggs. Finally, in autumn 2022, we have found small Lasca specimens (TL < 50 mm; YOY) in Močilnik stream that could not arrive from anywhere else but from the 2022 spawning in the wild.
- *Met all 64 angling clubs in Slovenia twice during the project duration.* One of the main purposes of meetings was raising awareness among anglers regarding alien species release and its consequences. During the meetings, we performed surveys on the topics. Anglers are highly aware of the importance of nature and biodiversity conservation including consequences that the alien species release into nature can cause. High awareness is shown also through the indicator: the amount of alien species release into nature by angling clubs (common practice for more than 100 years for rainbow trout and domesticated carp) has decreased over the last 4 years for 20%.
- *Released Action plan for Lasca conservation.* The purpose of Action Plan is to offer unified guidelines for the species conservation management within its entire range. The goal of the plan is to support the establishment of local and national action plans with adequate measures for the preservation of the species and improvement of its conservation status.



- In 2022, officially obligated Fisheries Management Plans (FMPs) for Slovenian angling clubs, that manage waters where Lasca is present, were accepted and approved by Ministry for agriculture, forestry and food. FMPs approval dates are as follows:
 - (I) Ajdovščina Angling club on 12/07/2022,
 - (II) Soča – Nova Gorica Angling club on 29/08/2022
 - (III) Renče Angling club on 28/11/2022

In FMPs, Angling clubs are officially obligated:

- (I) not to execute fishing in Lasca released sites.
 - (II) angling on Common nase has no bag limit and no closed season. Size limit is 18 cm, since young (small) Common nase can easily be wrongly determined as Lasca and visa versa.
- Increase in knowledge about Lasca and aquatic habitats in Italy and Slovenia thanks to the intense dissemination and awareness-raising activity of the public focused towards children in schools.

3 After life measures

In the afterlife period, main project objectives listed under Chapter 2 will be continued to enable long-term project impacts. From other reintroduction programs like the reintroduction of the Allis shad (*Alosa alosa*) (LIFE06 NAT/D/000005) can be learned that constancy of actions is required and that release operations needs to be continued for many years in order to provide basis for stock to be large enough to sustain itself in the future.

Project activities that will be continued

- *Lasca captive breeding* will continue in Slovenia and Italy on FRIS (for Slovenia) and Parco Ticino (for Italy) own expenses. Connections between partners will be maintained. Parco Ticino will maintain the potential support of specimens to complete the reintroduction program in Slovenia. For this purposes Parco Ticino will collect breeders in the wild when needed (place depends on availability and conservation status of the nuclei) and it will produce at least 2.500 young specimens per year. Additionally, Parco Ticino will produce at least 5.000 specimens per year for reintroduction and support of broodstock in the Park. In 2023 Parco Ticino will build 2 new breeding tanks (Fagiana fish farm) to support Lasca breeding program. Captive breeding techniques will continue to be evolved and they will be available to be spread to other groups. Slovenia expects to



produce on average at least 5.000 Lasca offspring per year. Potential transportation of Italian specimens for Slovenian captive breeding reinforcement will be done by FRIS on their own expenses.

- *Common nase (Chondrostoma nasus) reduction* will continue by angler clubs through FMPs on their own expenses. FRIS will offer all needed support on their own expenses. At least five meetings/field days are predicted.
- *Lasca wild reinforcement* will continue by FRIS (in Slovenia) on their own expenses. Slovenian offspring will be released in the wild, in streams Močilnik, Jovšček and Ozlenšček, on annual bases (N = 3 per year). If needed, additional specimens will be transferred from Italy by FRIS on their own expenses.
- *Monitoring of Lasca and Common nase* (N = 4; monitoring sites and methodology are determined in the project) will be performed at least twice during the afterlife period (in second and fifth year). The monitoring will be performed by FRIS on their own expenses.
- *Awareness and project results dissemination* will continue by FRIS and Parco Ticino on their own expenses. At least 10 articles in media will be released. Lasca activities will be inserted in didactic programs, agreements and degree thesis on Lasca are foreseen. Project results will be shared by participations on meetings. Lasca web site will be available on FRIS own expenses.



Effort assessment of the afterlife activities

Field	Activity	Effort	Total €*	Responsible Institution**
Lasca captive breeding	Lasca breeding to support Slovenian program	1 pearson for 20 days per year	4.400/Year	P. TICINO
Lasca captive breeding	Lasca breeding to support Slovenian program (technical support)	1 pearson for 40 days per year	7.800/Year	P. TICINO
Lasca captive breeding	Realization (equipement and other managment costs)		25.000 euro	P. TICINO
Lasca captive breeding	Lasca breeding in Slovenia	1 pearson for 100 days per year	15.000 / year	FRIS
Lasca captive breeding	Realization (equipement and other managment costs)		10.000 / year	FRIS
Lasca captive breeding / Lasca wild reinforcement	Lasca transportation	2 persons for 2 days per transportation	360 / transportation	FRIS
Lasca captive breeding / Lasca wild reinforcement	Transportation realization (gassoline, fees,..)		500 / transportation	FRIS
Common nase reduction	Meeting /field day	2 persons per day	480 / day	FRIS
Common nase reduction	Realization of fieldwork (equipement and other managment costs)		100 / day	FRIS
Lasca wild reinforcement	Lasca release in the wild	3 persons per day	780 / day	FRIS
Lasca wild reinforcement	Realization (equipement and other managment costs including transportation within Slovenia)		500/day	FRIS
Lasca wild reinforcement	Lasca release and broodstok maintenance in Italy	1 pearson for 5 days per year	1.100/Year	P. TICINO
Lasca wild reinforcement	Lasca release and broodstok maintenance in Italy (technical support)	1 pearson for 10 days per year	1.950/Year	P. TICINO
Lasca wild reinforcement	Realization (equipement and other managment costs including 2 breeding tanks)		60.000 euro	P. TICINO
Monitoring of Lasca	Field surveys	4 pearons per day	960/ day	FRIS
Monitoring of Lasca	Realization of fieldwork (equipement and other managment costs)		300 /day	FRIS



LIFE16 NAT/SI/000644

Field	Activity	Effort	Total €*	Responsible Institution**
Monitoring of Common nase	Field surveys	10 persons per day	2.400 / day	FRIS
Monitoring of Common nase	Realization of fieldwork (equipment and other management costs including transportation within Slovenia)		800 /day	FRIS
Awareness and project results dissemination	Articles preparation	1 person 5 days per article	1.600 / article	FRIS / P. TICINO
Awareness and project results dissemination	Didactic material preparation		5000 euro	P. TICINO
Awareness and project results dissemination	Participation at meetings	1 person 5 days per meeting	1.600 / meeting	FRIS / P. TICINO
Awareness and project results dissemination	Travel and other costs related to meetings participation		1.500 / meeting	FRIS / P. TICINO
Awareness and project results dissemination	Active web site maintenance	1 persons 20 days	4,8	FRIS
Awareness and project results dissemination	Active web site costs		1.000	FRIS

* wildlife specialist costs 220 Euro/day, technician costs 195 Euro/day.

** P. Ticino = Parco Ticino, FRIS = Fisheries Institute of Slovenia

FRIS and Ticino Park will carry out the after life project actions with funds from the institution's budget and possibly with other national and European funds.



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