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FINAL REPORT ON THE PROJECT ACTIONS IMPACTS

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 report is the Final report of LIFE for LASCA project on the project impacts monitored under action D1: “Monitoring of the impact of the project actions”. The report explains indicators related to concrete project activities and gives their values at the official end of the project. Further activities regarding monitoring of the project impacts are predicted in After Life plan and Action plan delivered by the project.

Assessment of project impacts

Project impacts were monitored trough indicators. Indicators were defined with an aim to evaluate the state or level achieved within concrete project activities. Since the main project goal was Lasca reintroduction into Vipava valley based on captivity breeding and supported by pressure reduction (Common nase and other alien species), indicators were defined on further topics: (1) Lasca breeding, (2) Pressure to Lasca reduction (alien Common nase), (3) Lasca survival in nature, (4) Awareness on alien species release consequences.

Indicators and their values

D1.1 INDICATOR 1: Number of successful Lasca spawning seasons in Slovenia

This Indicator indicates the success of the action C2 / Establishment of Lasca breeding in Slovenia.

Successful spawning season means offspring survival. Number of offspring was estimated in autumn, when fish were large enough to reliably estimate their number.

Indicator 1 value.

In Slovenia, we performed 4 successful Lasca consecutive spawning seasons producing 41.000 offspring. First successful spawning season dates in 2019.

D1.2 INDICATOR 2: Reduction of Common nase abundance in Vipava river basin

This Indicator indicates the success of the action C3 / Reduction of Common nase population.

Under this indicator we monitored Common nase abundance in the wild. Common nase abundance is expressed by number of specimens caught per monitoring site. Specimens were caught by electrofishing; with wading in shallow waters or from a boat in water deeper than 0,7 m. The indicator values were always measured in the same watercourse sections - monitoring sites. Within each monitoring site, we executed monitoring surveys with the comparable effort; the same catch area, the same number of power units, permanent teams, similar time frame, the same season and similar water conditions.

Monitoring samplings in year 2022 are not considered as reliable, since extreme drought accrued through all spring and summer. Some sections of watercourses completely dried out, in others, intensive interventions due to extremely low water

levels were performed. Fish were translocated to conjunction of watercourses and main river Vipava or locally, in large pools.

The monitoring sites.

Lasca release sites (N=3) within Močilnik, Jovšček and Ozlenšček streams. Common nase reduction efficiency in Lasca release sites is of great importance. Decrease of Common nase at release sites means decrease the pressure directly to Lasca released specimens.

Vipava river section near town Prvačina (N=1). This is the main river section where large Common nase specimens group on feeding grounds every year in autumn, after the rainy period, when water levels go down. On experiences and knowledge gained during the project, reduction efficiency in the main river, where large specimens lives, can only be reliably monitored when they group in shallows; on spawning and feeding grounds. Decreasing the amount of large specimens means decreasing reproductive potential of the species.

Indicator 2 value.

In Lasca release sites Common nase decreased for:

- 66% in Jovšček stream. In year 2018 we caught 143 specimens, while in year 2021 we caught 48 specimens.
- 98% in Ozlenšček stream. In year 2018 we caught 604 specimens, while in year 2021 we caught 13 specimens.
- 72% in Močilnik stream. In year 2018 we caught 11 specimens, while in year 2021 we caught 3 specimens.

In the main Vipava River Common nase decreased for 65%. In year 2018 we caught 94 specimens, while in year 2021 we caught 33 specimens.

D1.3 INDICATOR 3: Lasca abundance in Vipava river basin

This Indicator indicates the success of the action C4 / Lasca reintroduction in the Natura 2000 site Dolina Vipave SI3000226.

The indicator value was monitored by number of released Lasca specimens and by Lasca abundance in the wild. Lasca abundance is expressed by absolute number of specimens caught in streams where the species was released in. The monitoring surveys were performed at least four months after each Lasca release, to check the survival of specimens after extreme weather conditions like cold winter water temperatures, droughts, floods.

Indicator 3 value.

The initial indicator value was equal to 0, since Lasca was not present in the Vipava valley before the project.

During the project we have released 136.052 specimens of different ages in the wild. In the nature, we have found 1.019 Lasca specimens, meaning Lasca specimens survived all extreme weather conditions. Even more, we detected that released Lasca specimens successfully spawn in the wild. Spawning in the wild is a great success and especially a big step towards self-maintaining capabilities of wild populations. In late spring 2021, we have found Lasca specimens in Jovšček stream just before spawning. Mails 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.

D1.4 INDICATOR 4: Decreasing the amount of non-indigenous fish release

This Indicator indicates the success of the action C5 / Reduction of further non-indigenous species entry into an environment.

Since in Vipava valley alien Common nase was introduced by fisherman, their awareness on consequences of the alien species introduction is very important; especially to prevent the possible further introduction of exotic species into nature. Their "real" awareness can be reliably measured by the amount of alien species release for important alien game species, for which the anglers have a special governmental permission to manage with (rainbow trout - *Oncorhynchus mykiss* and domesticated carp - *Cyprinus carpio*).

Indicator 4 value.

The amount of important alien game species release into nature by angling clubs has decreased for 20% comparing periods 2013-2016 (before the project start) and 2017-2021 (during the project implementation).