Life PREDATOR

PREVENT, DETECT AND COMBAT THE SPREAD OF *SILURUS GLANIS* IN SOUTH EUROPEAN LAKES TO PROTECT BIODIVERSITY

LIFE21 NAT/IT/PREDATOR
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NEWSLETTER

2026 4

LIFE PREDATOR

A EUROPEAN PROJECT TO STOP THE SPREAD OF WELS CATFISH IN THE LAKES OF SOUTH-WESTERN EUROPE

From September 2022 until 2027, the first European project for the contrast and containment of the diffusion of Wels catfish in lakes of south-western Europe is ongoing: LIFE PREDATOR. Launched on 1 September 2022, the project is co-funded by the European Union's LIFE programme, the EU's financial instrument for environment and climate action.

LIFE PREDATOR (2022-2027) aims to combat the spread and further introduction of Wels catfish, Silurus glanis, in Italian and Portuguese lakes and throughout south-western Europe, where it is an Invasive Alien Species (IAS), thus contributing to the application of the Regulation (EU) n. 1143/2014 on exotic species.

As part of the project, it is tested in 50 lakes (23 in Italy, 25 in Portugal and 2 in the Czech Republic) and developed an early detection method based on environmental DNA, whose information is integrated by the reports collected with the initiatives of Citizen Science simultaneously activated.

In 10 selected lakes where the species is widespread and abundant, different catch methodologies are tested to select the most selective and effective method, which will then be applied to reduce the biomass by 90% in 5 small isolated lakes included in the Natura 2000 network, by at least 10% in large lakes and reservoirs, by 50% in small reservoirs. At least 130 fishermen and 100 anglers will be involved.

Massive awareness-raising campaigns are also planned specifically for fishermen but also for the general public, including at least 12,000 school children.

The project created the Southern European Wels catfish Management Group (SEMG). Protocols and Best Practices of Wels Catfish Capture will be transferred to at least 15 local authorities, to be integrated in their management plans, in particular for Natura 2000 sites.

Finally, but not at least for importance, a virtuous model of circular economy will be developed and promoted to encourage the food consumption of S. glanis and therefore the fishing catch. During the project, however, the fish removed with the containment campaigns will be entrusted to social cooperatives for the sale of meals at fair prices to at least 1,000 people in difficulty.

www.lifepredator.eu

IN THIS NESLETTER 04, WE PRESENT UPDATES ON THESE TASKS!

- Task 2.5 - Definition of baseline abundance of European catfish in lakes and fish communities
- Task 4.1 - Development of highly specific eDNA test to detect European catfish in lakes
- Task 5.2 - European catfish eradication in small lakes typology
- Task 5.3 - European catfish control in small and large reservoirs typology
- Task 7.6 - Transfer of knowledge on eDNA use in environmental monitoring
- Task 8.3 - Public dissemination events
- Task 8.4 - Educational activities for students and adults
- Task 8.6 - Scientific congresses and scientific publications.

LIFE PREDATOR

Welcome to the fourth LIFE Predator Project Newsletter, where we share the latest results from these tasks.

- Task 2.5 - Definition of baseline abundance of European catfish in lakes, fish communities' characteristics and lake ecosystem functioning;
- Task 4.1 - Development of highly specific eDNA test to detect European catfish in lakes;
- Task 5.2 - European catfish eradication in small lakes typology;
- Task 5.3 - European catfish control in small and large reservoirs typology;
- Task 7.6 - Transfer of knowledge on eDNA use in environmental monitoring;
- Task 8.3 - Public dissemination events;
- Task 8.4 - Educational activities for students and adults;
- Task 8.6 - Scientific congresses and scientific publications.

Before diving into the news, we would like to remind you who our partners are (and the abbreviations we use for them in this Newsletter).

SIGLA	NOME	NAZIONE
IRSA-CNR	CONSIGLIO NAZIONALE DELLE RICERCHE	
G.R.A.I.A. SRL	GESTIONE E RICERCA AMBIENTALE ITTICA ACQUE	
ALCO	ENTE DI GESTIONE DELLE AREE PROTETTE DELLE ALPI COZIE	
CMTO	CITTA' METROPOLITANA DI TORINO	
CIENCIAS	FACULDADE DE CIENCIAS DA UNIVERSIDADE DE LISBOA	
FC.ID	FCIENCIAS.ID - ASSOCIACAO PARA A INVESTIGACAO E DESENVOLVIMENTO DE CIENCIAS	
BCCAS	BIOLOGICKE CENTRUM AKADEMIE VID CESKE REPUBLIKY VEREJNA VYZKUMNA INSTITUCE	

T2.5 -Definition of Wels catfish abundance, fish community characteristics in lakes, and Ecological Status according to the Water Framework Directive (2000/60/EC)

This Task involves monitoring the status of fish communities in lakes categorized as “large” and “small”; 6 of which are Italian (Lake Maggiore, Lake Comabbio, Lake Avigliana Grande, Lake Avigliana Piccolo, Lake Sirio, Lake Campagna) and 4 of which are Portuguese (Belver, Fratel, Cedillo, and Meimoa).
The investigation method is based on the use of historical data, direct sampling using electrofishing and fishing nets, and surveys targeting professional fishers – where active.
These lakes are targeted by Wels catfish control actions within the scope of the project.
To complement the mentioned methodologies and evaluate the effectiveness of Wels catfish control actions in these lakes, the project includes hydroacoustic monitoring to quantify the biomass present in these lakes before and after control operations.
Regarding large lakes, these activities were carried out on Lake Maggiore and Lake Iseo, the latter used as a reference for the former.
In October 2025, the BCCAS team, in collaboration with CNR-IRSA, conducted the first detailed hydroacoustic survey of Lake Iseo using the new-generation Simrad EK80 sonar system aboard the research vessel Ota Oliva. During the day and night

Figure 0 1. IThe Czech BCCAS team and the hydroacoustic research vessel Ota Oliva during fish stock monitoring at Lake Iseo (October 2025)

Figure 0 2. Discussion with the CNR-IRSA team regarding the advantages and limitations of hydroacoustic applied to lakes during the fish stock assessment of Lake Iseo (October 2025).

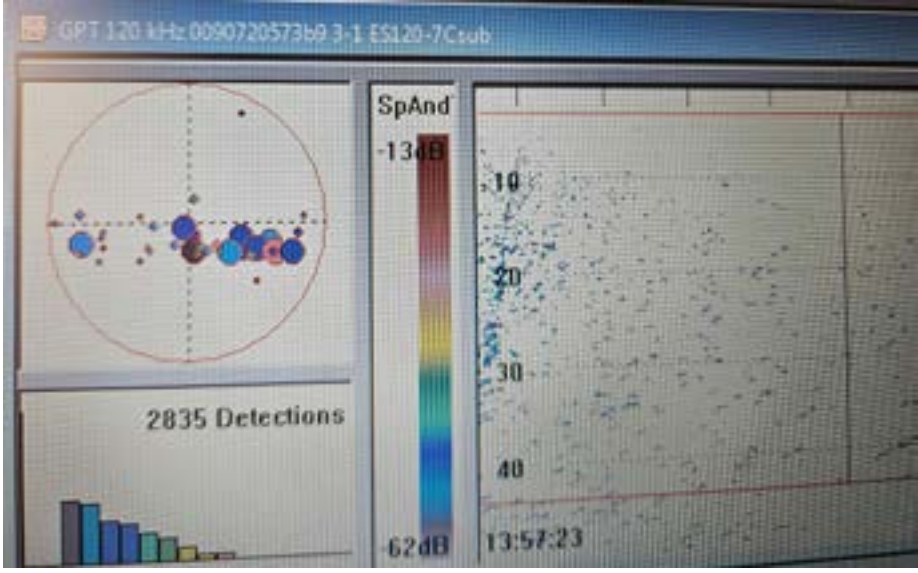

Figure 0 3. Daytime horizontal echogram near Iseo showing numerous fish distributed in a surface layer crossing the acoustic beam (1:57 PM, October 2025).

monitoring campaigns, the lake was covered by a sampling route nearly 300 km long, producing several GB of recorded acoustic data. The entire campaign was successfully completed, despite engine issues affecting the research vessel throughout the sampling period.

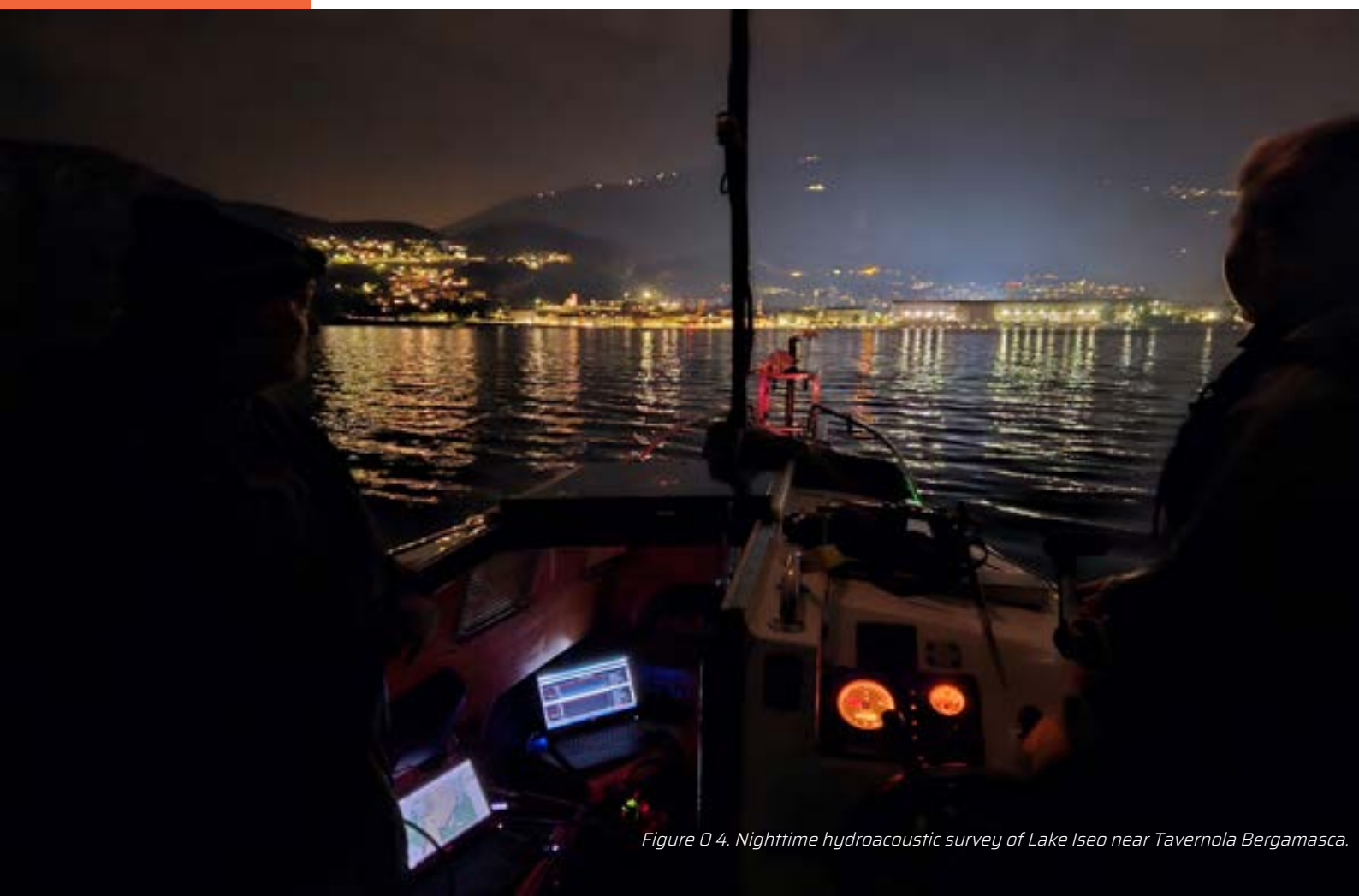

Figure 0 4. Nighttime hydroacoustic survey of Lake Iseo near Tavernola Bergamasca.

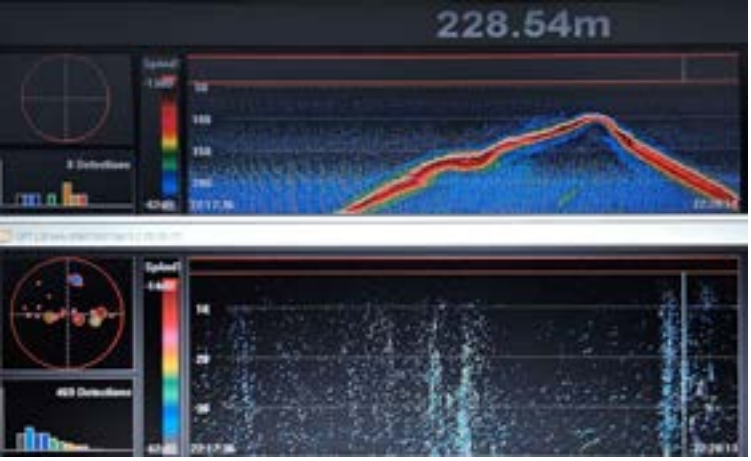

Figure 0 5. Nighttime echograms of fish distribution in Lake Iseo near Monte Isola showing dense fish aggregations near the water surface: bottom, horizontal echogram; top, vertical echogram at a depth of 228 m (10:28 PM, October 2025).

During the winter of 2025/2026, Vladislav Draštík from the BCCAS team completed the analysis of hydroacoustic data previously collected during the extensive initial sampling campaign of Lake Maggiore in September 2023, estimating a total fish biomass of approximately 30 kg ha-¹. Data gathered at Lake Iseo are currently being processed.
Following the end of control operations, hydroacoustic monitoring will be repeated to quantify the effects of the campaigns completed by the project.

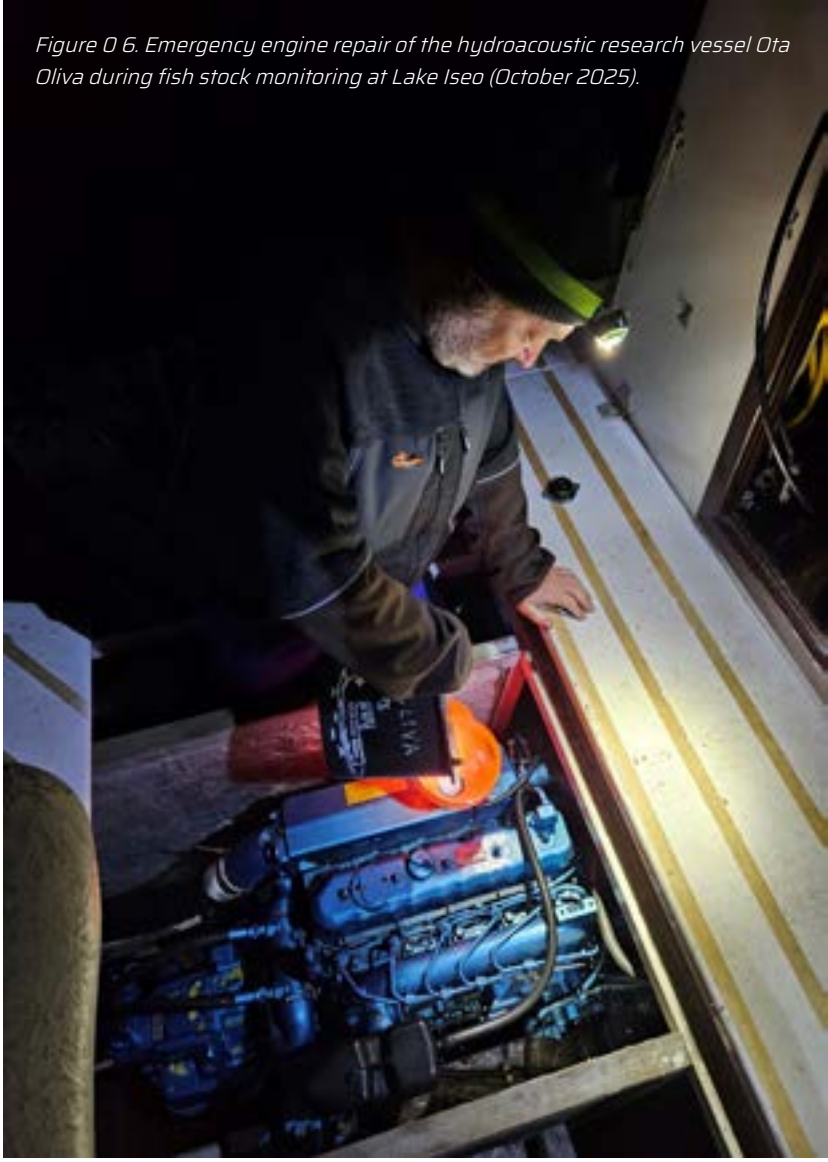

Figure 0 6. Emergency engine repair of the hydroacoustic research vessel Ota Oliva during fish stock monitoring at Lake Iseo (October 2025).

Figure 0 7. The hydroacoustic research vessel Ota Oliva approaching the strait near the Hermitage of San Defendente during fish stock monitoring at Lake Iseo (October 2025).

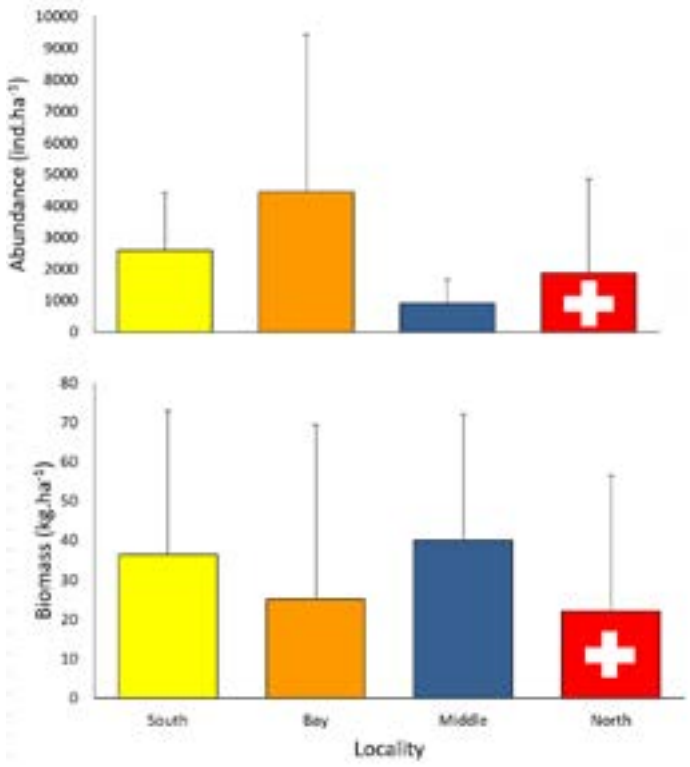

Figure 0 8. Hydroacoustic estimation of fish abundance and biomass in Lake Maggiore in mid-September 2023 (BCCAS data; processing: Vladislav Draštík). South – southern basin, south of Verbania Bay (Santa Caterina del Sasso, Ispra, Ranco area); Bay – Verbania Bay (from the Borromean Islands area to the mouth of the Toce River); Middle – central basin (Intra, Oggebbio, Luino, Cannobio area); North – northern basin (specifically the Swiss part of the lake up to Locarno).

T4.1 - Development of a highly specific environmental DNA (eDNA) test to identify the presence of Wels catfish in lakes

The study of environmental DNA represents an innovative approach to monitoring fish species, as it is potentially less invasive and more cost-effective than other direct sampling methods (such as electrofishing and netting).
All organisms, including fish, continuously release small amounts of genetic material into their environment (via mucus, urine, scales, etc.): this can be collected and analysed to determine the presence or absence of a species without needing to capture individual specimens. Environmental DNA analysis therefore serves as a potential tool for detecting elusive, rare, or newly spreading species (such as invasive species).
In the case of invasive species, eDNA monitoring allows for timely management and control measures before invasive species (such as the Wels catfish) manage to establish stable populations, increasing the chances of limiting their spread.
However, ongoing research (IRSA-CNR, CIENCIAS, FC.ID, BCCAS) demonstrates that detecting Wels catfish using this method can currently be challenging. Once released into the environment, organism DNA begins to degrade due to microorganisms, temperature, sunlight, and other environmental factors.

In a laboratory experiment, we observed that Wels catfish DNA, once released, can lose its detectability within a few days due to rapid degradation, as illustrated by the presented graph.

The underlying causes of this process are not yet fully understood, but results suggest that microorganisms play a fundamental role. For this reason, eDNA studies for monitoring Wels catfish can yield negative results (DNA not present) that do not necessarily imply the absence of the species in the surveyed environment.

Despite current limitations, environmental DNA analysis remains a very promising tool: to fully harness its potential, it will be necessary to better understand the dynamics of Wels catfish DNA release and degradation in the environment, as well as to optimize sampling and analysis protocols.

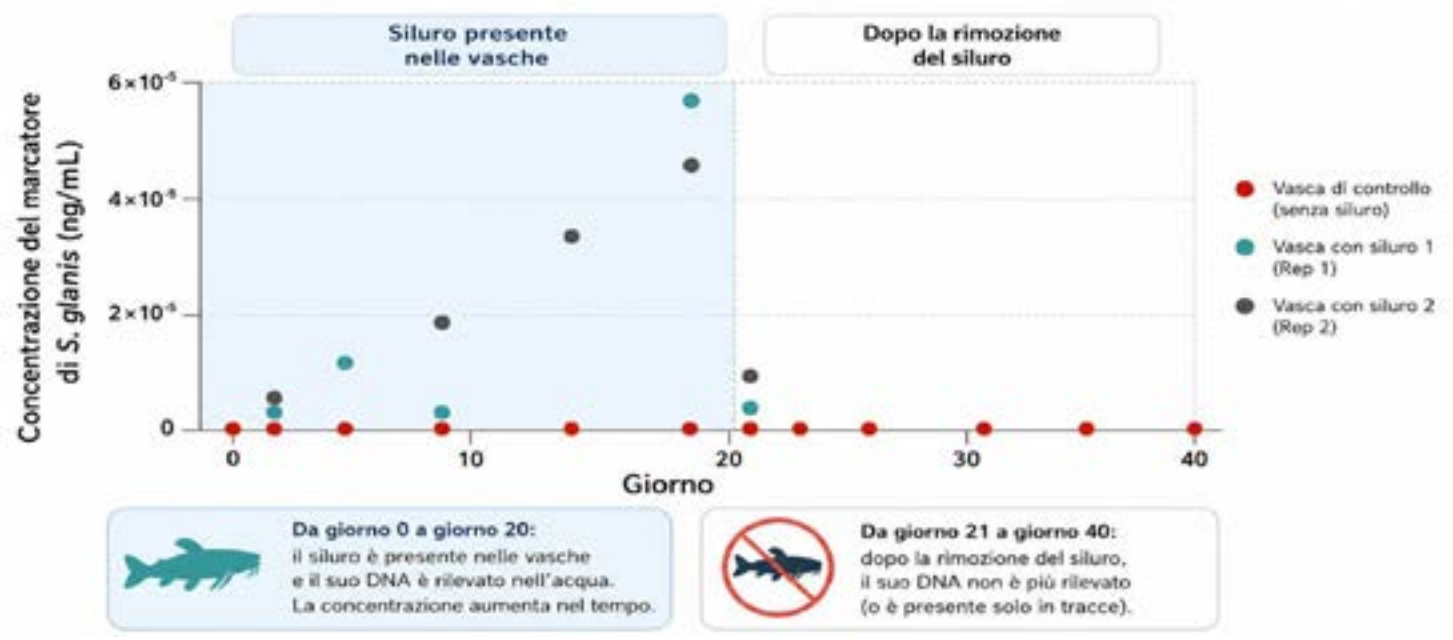

Figure 0 9. S. glanis DNA concentration (ng/mL) detected in experimental tanks during the study. Six days after removing the Wels catfish, its DNA was no longer detectable.

T5.2 - Wels catfish control in small lakes

The Wels catfish control action conducted by GRAIA at Lake Comabbio is approximately 70% complete and will conclude in May 2027; to date, it has yielded 517 captured specimens, accounting for approximately 5 metric tons of removed biomass, with an average size of 8.8 kg per specimen.

Electrofishing was conducted along the shorelines, where it is most effective, while nets of varying mesh sizes were set closer to or further from the shore depending on the season.

Each removed specimen was logged with its capture technique (electrofishing or nets), noting the net mesh size when applicable; for each campaign, the total length of nets set or shoreline covered (electrofishing), along with the average depth surveyed, were recorded.

These data provided highly interesting insights useful for refining operations in progress. Electrofishing accounted for 55% of the fishing effort (measured as sampled area) and contributed to 65% of captured biomass, while nets accounted for 45% of fishing effort, capturing the remaining 35% of removed biomass.

In other words, for an equivalent amount of effort, electrofishing yielded approximately 42 g/m², whereas nets yielded 27.5 g/m². Net yield depended on the performance of the 4 mesh sizes used (80, 100, 110, and 120 mm): for equal net lengths, 100 and 110 mm mesh sizes performed significantly better than 80 and 120 mm meshes (approx. 30 g/m² yield for the former two, compared to 17 and 8 g/m² for the latter).

The final control season will hopefully contribute to reaching the local target established at project inception (7.2 tons of biomass removed from the lake) and will also allow monitoring of fish community changes in response to harvesting efforts.

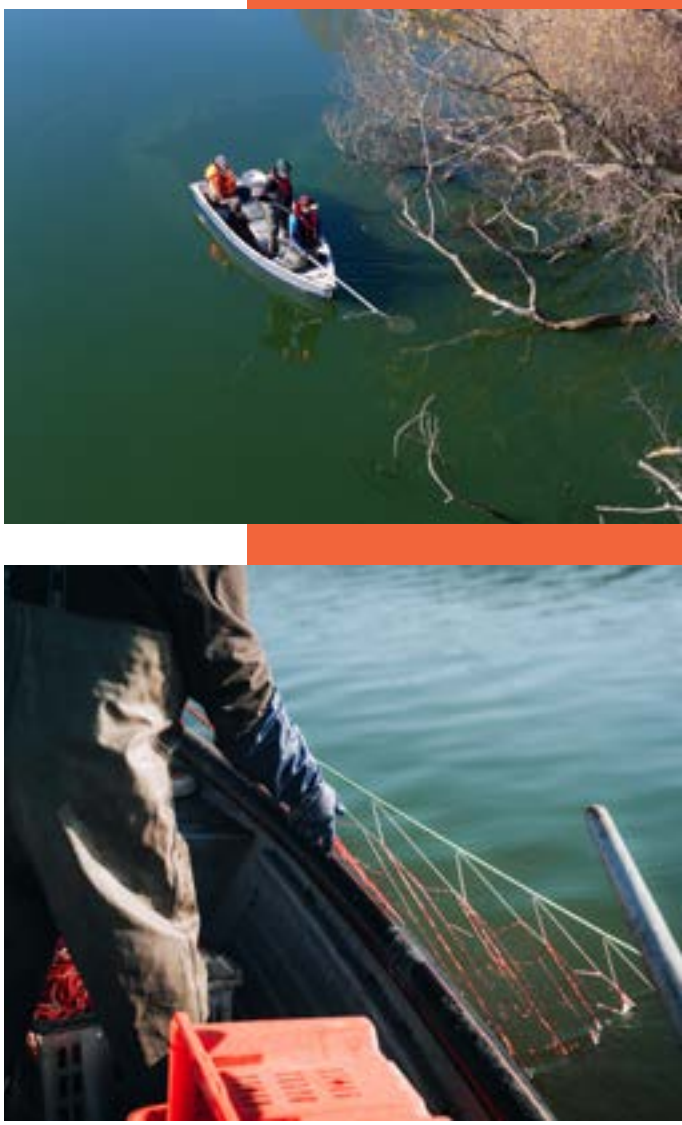

Figure 10. Electrofishing (up) and net fishing (down) phases on Lake Comabbio.

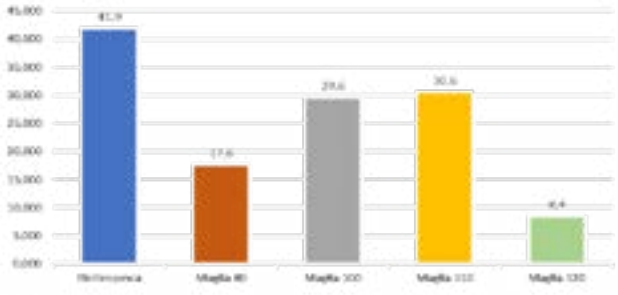

Figure 11. Removal yield (g/m²) per unit of fishing effort by method (net data categorized by mesh size used).

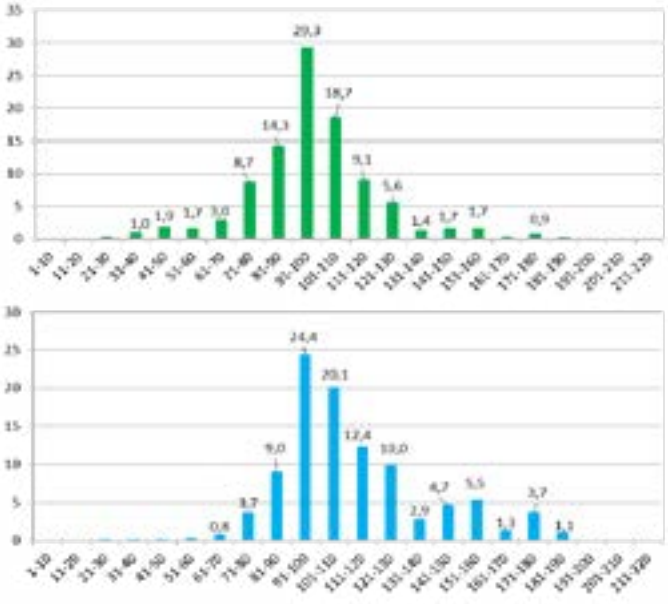

Figure 12. Number of specimens removed (% of total; top) and biomass removed (% of total; bottom) for each 10-cm length class interval.

CMTO Activity

In May 2026, CMTO resumed Wels catfish control activities in Lake Sirio and Lake Campagna, situated within the Natura 2000 network site “Laghi di Ivrea”. Results from the activity, carried out using both electrofishing and longlines, were satisfactory in terms of catch: an additional 51 specimens totalling approximately 245 kg were removed from Lake Sirio, and 46 specimens totalling about 307 kg were removed from Lake Campagna. Since the start of the project, control efforts across both lakes have removed over 400 specimens totalling 2,145 kg in biomass.

Stomach content analysis revealed that during the surveyed period, Wels catfish fed predominantly on the red swamp crayfish (Procambarus clarkii), another non-native species introduced to Europe in the 1970s from North America for commercial food purposes, which subsequently became one of the 100 most invasive and damaging species globally.

While this finding might appear positive regarding control over exotic crayfish, it primarily underscores their high proliferation and availability in the environment for an opportunistic, non-selective predator like the Wels catfish; furthermore, it confirms that crayfish serve as a food resource promoting the concurrent proliferation of Wels catfish.

In other project lakes, multi-seasonal stomach content analyses revealed that crayfish are a critical food resource especially for small-to-medium Wels catfish (such as those sampled in the Ivrea lakes), particularly during warmer periods when crayfish are most active. During colder seasons, Wels catfish diets (especially for medium-to-large individuals) generally consist of fish species.

ALCO Activity

In 2025, control efforts in the Avigliana Lakes Natural Park managed by ALCO were carried out through 24 recreational and commercial fishing campaigns.

Regarding recreational fishing, in spring 2025, ALCO park rangers selected a group of anglers and trained them specifically for project goals. Subsequently, from June to November, 9 evening sessions and 3 dawn sessions were organized on Lake Grande, where group members fished thanks to the cooperation of the fishing rights owner and the presence of Park wardens. The activity took place at night along a section of the lake perimeter path reserved by the Municipality of Avigliana. Nighttime fishing exemptions were granted by CMTO to support project goals.

Recreational anglers caught 12 Wels catfish specimens (totalling 17.9 kg) during park-organized sessions, while 15 specimens (totalling 117.8 kg) were caught during occasional fishing activities and verified by park rangers.

Figure 13. Wels catfish control activities conducted by ALCO via enforcement staff, public support (recreational fishing), and hired professionals (longline deployment).

13 commercial campaigns (7 on Lake Piccolo and 6 on Lake Grande) were conducted in autumn by a team of ichthyologists appointed by the Park, using electrofishing and longlines. These campaigns removed 68 specimens (totalling 259 kg) from Lake Grande and 44 specimens (totalling 255 kg) from Lake Piccolo.

Bruno Aimone, head of the Park's Biodiversity Area, reported encouraging results consistent with late-2023 fish monitoring data: Wels catfish abundance in both lakes is not excessive compared to other project lakes, raising hopes that intervention timing relative to the colonization process was more favourable here than elsewhere.

Fabio Santo—park ranger and head of enforcement—highlighted the value of activities conducted with recreational anglers (who accounted for 26% of total removed catfish biomass), noting that it ensures action continuity after the conclusion of the LIFE Predator Project.

In late April 2026, control operations were conducted by CNR-IRSA staff at Lake Grande di Avigliana: across 5 electrofishing campaigns, 130 specimens totalling 322 kg of biomass were removed.

The technical team, supported by Cozie Alps Parks rangers, focused along shoreline shelters, capturing specimens with an average size of 65 cm in length and 2.6 kg in weight.

The largest individual measured 120 cm in length and weighed 10.7 kg; small specimens weighing under 1 kg were the most representative group.

Sex determination was possible for 97 specimens, revealing 48 males and 49 females.

Figure 14. Wels catfish control activities conducted by ALCO via enforcement staff, public support (recreational fishing), and hired professionals (longline deployment).

The team also analysed stomach contents: 40 individuals had empty stomachs, 6 could not be conclusively analysed, and 84 contained stomach contents.
67 individuals had fed on crayfish (presumably Procambarus clarkii), while 7 individuals contained traces of zebra mussel (Dreissena polymorpha), another invasive alien species. Other primary prey items identified in stomachs included pumpkinseed (Lepomis gibbosus) and European perch (Perca fluviatilis), present exclusively in 15 specimens or alongside crayfish in 17 specimens.
In May 2026, 3 additional electrofishing campaigns took place, yielding 66 specimens and approximately 135 kg of removed biomass. May catch numbers were slightly lower than April (22/day), while removed biomass per campaign dropped significantly (45 kg/day).
The male-to-female ratio remained virtually unchanged, as did the approximate size of the largest individual removed (115 cm in length and 8.5 kg in weight for May operations).
As observed in April, Procambarus clarkii remained a primary prey item for Wels catfish in the Avigliana lakes, present in 74% of the May sample.
From an operational management standpoint, the excellent cooperation from local lake businesses and tourists was notable; visitors did not impede activities and expressed appreciation for the work being done on multiple occasions.

T5.3 - Wels catfish control in large and small artificial reservoirs

On May 25, 2026, the Portuguese team from CIENCIAS-FC.ID, together with ICNF (Institute for Nature Conservation and Forests), organized a Wels catfish control action in the Belver reservoir. The operation involved 3 boat-based teams composed of hired professional fishers and ICNF park rangers, alongside 30 participants from local stakeholder groups (Municipalities and National Guard – Service for the Protection of Nature and Environment) who stored captured fish in a refrigerated vehicle.
Overall, the control action engaged 70 people who were struck by the sheer biomass of the species present in the reservoir.
“The CIENCIAS team anticipated removing around 700 kg of catfish biomass based on previous performances in this reservoir,” said Rui Rivaes, researcher at MARE - Center for Marine and Environmental Sciences; “but we certainly did not expect to reach 2.3 metric tons of biomass, triple our best estimates.” Bycatch of other species was only 8%, mostly consisting of other exotic/invasive species, while native barbel accounted for only 2% of total catches.

The biomass was delivered to commercial markets or used as bait in crayfish fishing. The CIENCIAS-FC.ID team also donated approximately 500 kg of captured fish to a local business and local recreational anglers upon request.
Carlos Albuquerque, Regional Director of ICNF, commented that this was an extraordinary outcome for the LIFE-PREDATOR action. Setting 40 gillnets along 4 kilometres of reservoir confirmed the effectiveness of an intervention that could also be applied within Portuguese protected areas.

Figure 15. Wels catfish control activities conducted at the Belver reservoir (photos by Filipe Ribeiro, ICNF - Joao Paulo Nobrega, and Sandra Caldas).

T7.6 - Knowledge transfer on using environmental DNA for monitoring

In September 2025, Portuguese partners CIENCIAS – FC.ID organized a workshop on biodiversity monitoring via environmental DNA (eDNA), aimed at building capacity among environmental management professionals, particularly across public administration, corporate sectors, and academia. The workshop opened with presentations from invited speakers: Manuel Curto (Boku University), Sofia Duarte (University of Minho), Maria João Feio (University of Coimbra), and Filipe Ribeiro (MARE-U Lisbon). In the second part, participants split into groups to discuss specific case studies on using eDNA for detecting invasive species or monitoring biodiversity.

A total of 33 participants registered from academia (University of Évora, University of Lisbon, Polytechnic Institute of Santarém), private companies (LABLEC, SGS), and public administration (Tagus Water Authority, Institute for Nature Conservation and Forests, and the National Institute for Fisheries).

Figure 16. Workshop on biodiversity monitoring via environmental DNA (eDNA) organized by CIENCIAS-FC.ID.

T8.3 - Public dissemination events

At the end of 2025, the project was presented to the Provincial Advisory Committee for Fisheries of CMTO, a representative and consultative body bringing together fishing associations, environmental protection entities, and local institutions to assist the Metropolitan City in managing fishery activities. Specifically, the Committee advises on regulations, calendars, stocking, and safeguard measures for inland waters and fish species. The meeting proved fruitful, allowing project objectives to be presented and conservation strategies for aquatic environments to be shared, which can continue in future years beyond the conclusion of the LIFE project.
On February 2, 2026, the project participated in the celebration organized by the Municipality of Ivrea for World Wetlands Day, an international observance stemming from the Ramsar Convention that draws attention to ecosystems as precious as they are fragile.
On May 26, 2026, CMTO and CNR were guests of the Municipality of Cascinette d'Ivrea—where Lake Campagna is located—to outline the project's aims and preliminary results. Attendance was high, and the audience demonstrated genuine interest in the topics covered and the future development prospects of Lake Campagna. The occasion also provided an opportunity to present the results of the LIFE Insubricus project, which operates in the same territory to protect an endemic species, the Italian spadefoot toad (Pelobates fuscus insubricus). The presence of this endemic amphibian provides an additional reason to control the Wels catfish population in the area.

CMTO organized the exhibition "PREDATOR, the freshwater pirate: story of a silent invasion", open from August 5 at the Regional Museum of Natural Sciences in Turin.
The exhibition, included among European project initiatives promoted by the authority, will remain open to the public until September 14.
Exhibition panels and scientific contents detail strategies for preventing, monitoring, and countering the spread of Wels catfish across Southern European lakes.

For more information: https://www.cittametropolitana.torino.it/comunicazione/pirata-dacqua-dolce-al-museo-di-scienze-naturali-mostra-il-progetto-predator

The series of nighttime fishing sessions coordinated by ALCO park rangers in Lake Grande di Avigliana, aimed at removing Wels catfish from the basin, led to the production and publication of a video featuring park rangers and anglers sharing their motivation and spirit for joining the project. In particular, the video emphasizes the necessity of combining multiple approaches to control Wels catfish effectively. Engaging recreational anglers raises awareness around issues caused by the predator, building a network of participants active during dedicated sessions and standard sport fishing activities—reporting catches to rangers and actively working toward project goals.

CLICK TO WATCH THE VIDEO: YOUTUBE VIDEO!

Figure 17. Pietro Volta (CNR) presenting LIFE Predator at Cascinette d'Ivrea near Lake Campagna.

T8.4 - Educational activities for students and adults

In the early months of 2026, CMTO educational activities for both students and teachers kicked off.
The professional development course for high school teachers, structured across 3 meetings (one theoretical, one hands-on, and one boat excursion), provided methodological tools and scientific knowledge to address invasive alien species in the classroom, focusing on freshwater environments and Wels catfish.
CMTO and the implementing entity (Vivere i Parchi A.P.S.) tailored educational options for students by age group, including interactive workshops with role-playing and debates, electric boat excursions, guided nature hikes, and attendance at the theatrical reading "Alien Fashion Week".
To date, approximately 3,000 students have taken part in awareness activities within the CMTO area, aimed at building a better future for biodiversity conservation.

Figure 18. Theatrical reading "Alien Fashion Week", promoted by CMTO.

Figure 19. Theoretical section of the professional development course for high school teachers presenting project content from CMTO.

CMTO activity

ALCO activity

With the arrival of school holidays, the first cycle of educational activities offered by ALCO during the 2025/2026 school year concluded; 53 classes totalling 843 students participated and expressed high satisfaction alongside their teachers. Activities will resume in September with spaces for new school groups looking to join.

The Park Authority entrusted the design of educational activities to the Culturalpe Cooperative Society, which worked alongside official Cozie Alps Park Guides to design 4 modules featuring a classroom lesson and a field trip to Avigliana Lakes Natural Park.

Each proposal was scientifically validated by technical staff and park rangers, incorporating a presentation, two custom-designed games, and discussion sessions based on field observations using educational materials created and shared by project partners.

Additionally, on May 21, 2026, Guides hosted a booth at the Evviva l'Asl To3 event at Alveare Verde in Avigliana, meeting over 50 classes (approx. 900 students) to further raise awareness about Wels catfish control actions.

GRAIA activity

At the close of the 2025-2026 school year, GRAIA officially met and exceeded its target for educational activities in the Lombardy region, reaching 1,500 students with project content.

The program spanned 2 SCHOOL YEARS ACROSS 19 COMPREHENSIVE INSTITUTES (28 SCHOOLS) in the provinces of Varese and Como: activities reached 82 classes and engaged over 2,500 students, some of whom were re-engaged for deeper follow-up modules.

Educational offerings were tailored by age group, combining classroom presentations, interactive workshops, games, and outdoor field trips. During field trips, students engaged in hands-on observation, identification, and sampling activities. Classroom activities also generated strong enthusiasm among students and teachers. For younger students, non-native species concepts were introduced through games and quizzes, whereas older students were encouraged to develop critical thinking regarding threats to aquatic environments.

Nearly all participating schools chose to complement theoretical lessons with practical activities, such as anatomical workshops on Wels catfish or field trips along nearby watercourses using bioindicators to evaluate ecosystem health. Other schools near project lakes—such as those in Senna Comasco, Capiago Intimiano, and Corgeno—opted for naturalistic tours along local cycle paths, discovering the beauty and fragility of local flora and fauna.

Feedback collected through evaluation questionnaires at

the end of the program was extraordinary: students and teachers rated activities and hands-on workshops as highly “interesting” and “engaging”; inspired by the experience, many classes independently created posters, 3D models, research reports, essays, and short videos dedicated to invasive species and Wels catfish.

This demonstrates the full achievement of the primary goal: raising deep awareness among youth regarding sensitive issues like invasive alien species (IAS) and instilling critical thinking so they realize everyone can make a difference in protecting nature and fragile ecosystems.

Figure 20. Educational activities delivered by GRAIA to students, along with LIFE Predator-themed projects created by students as additional school activities.

5,000 STUDENTS REACHED IN PORTUGAL: TARGET ACHIEVED IN 15 MONTHS!

In April 2026, the Portuguese CIENCIAS-FC.ID team reached the extraordinary milestone of 5,000 students engaged in LIFE PREDATOR activities across Portugal. The educational program started in January 2025, recording remarkable participation with an average of one event every two weeks and peak periods reaching up to 2 activities per week.

"The target for Portugal was very ambitious, but school registrations over the past year and a half were truly astonishing," stated Filipe Ribeiro, lead of the CIENCIAS team for the Project. The Portuguese team visited nearly 60 schools located mainly along the Tagus River basin, focusing on areas around the Meimoa, Cedillo, Fratel, and Belver reservoirs.

The team consists of Mafalda Moncada, who developed the educational packet with support from colleagues, assisted by Diogo Ribeiro, Rui Rivaes, Filipe Ribeiro, Diogo Dias, and Beatriz Castro.

Educational offerings targeted primarily 1st to 4th-grade primary students, though sessions were frequently delivered to 5th, 7th, and 9th grades as well. Some interventions were conducted in preschools through storytelling sessions using the animated book "Peixe-rei do Rio Tejo" (The Kingfish of the Tagus River).

Content (covers and activities) was adapted to each grade level.

One of the most impactful events occurred in the Municipality of Gavião (Belver basin) during a family open day coinciding with a Project monitoring visit: 2 field teams worked full-time, and at the conclusion, 9th-grade students and visiting partners participated in a quiz (Kahoot).

Figure 21. Educational activities organized by CIENCIAS-FC.ID.

T8.6 - Scientific conferences and scientific publications

CNR-IRSA is about to publish a scientific paper presenting the results of a tracking experiment conducted on Wels catfish specimens in Lake Sirio.

The authors of the publication, Stefano Brignone, Luca Minazzi, Alessia Buono, and Pietro Volta, studied the spatial distribution of Wels catfish in a small (0.3 km²), deep (max. 46 m) lacustrine environment in Turin province. Acoustic telemetry was selected as the investigation method, allowing for Wels catfish movement tracking with sufficient precision to define habitat and temperature preferences for the species within the studied context.

Beyond the purely informational value of the study, the results will undoubtedly enhance the efficiency of local and regional control operations for the species.

Specifically, the study's objectives can be summarized as follows:

- Characterizing the vertical distribution of Wels catfish along the water column on a daily and seasonal scale—namely, determining the preferential depths occupied by Wels catfish on a daily and seasonal basis;
- Describing the seasonal temperature preferences of the species;
- Quantifying its movements in terms of horizontal space use, residency, spatial segregation, and habitat selection along the littoral-pelagic gradient.

In May 2024, 15 Wels catfish specimens measuring between 66.5 and 98.1 cm in length were captured and surgically implanted with acoustic transmitters (equipped with depth and temperature sensors): they were monitored for 12 months using 12 stationary hydrophones deployed throughout the lake, capable of individually identifying each tagged specimen.

The fish demonstrated a preference for shallow depths (approximately 3.75 m), likely due to low oxygenation in the lake's deeper layers, which occurs throughout most of the year. The specimens also exhibited a seasonal shift toward greater depths during winter, alongside marked daily depth variations across the remaining 3 seasons. These vertical movements along the water column were significantly greater in summer and reduced in winter, with peaks corresponding to dawn and dusk during warmer seasons.

The body temperature of the specimens closely matched surface water temperatures during winter, whereas in summer they selected water layers with lower temperatures than the surface—generally below 26 °C, with an optimum range of 25–27 °C.

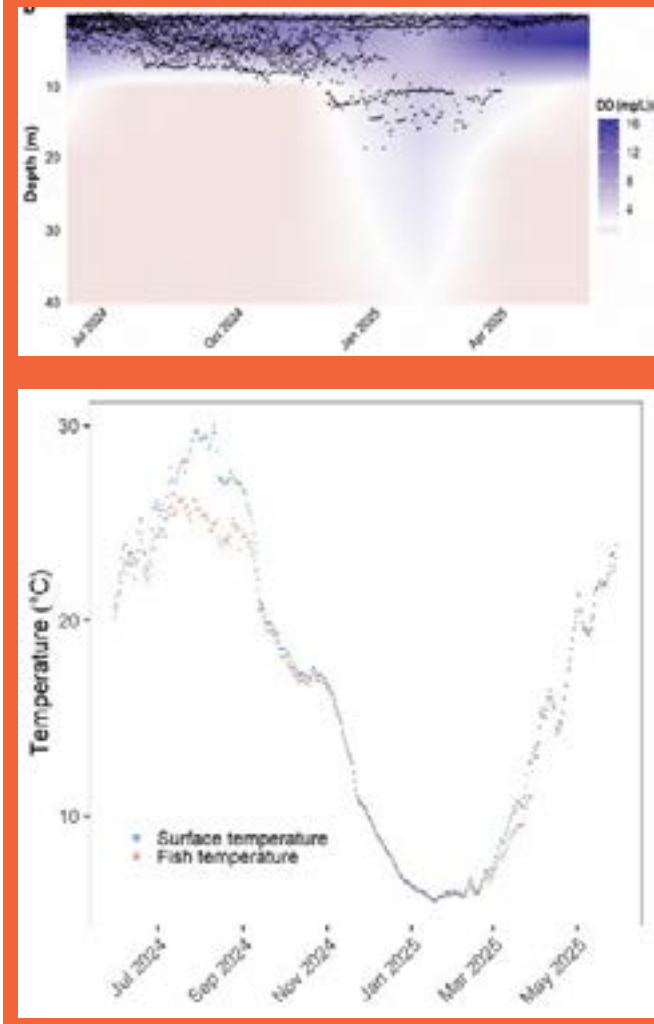

Figure 22. Depth distribution of tagged Wels catfish specimens and dissolved oxygen levels over the monitored period (daily averages), alongside mean specimen body temperature and surface water temperature, both recorded over the monitored period.

Regarding spatial habitat use, Wels catfish specimens proved significantly more mobile during spring and autumn compared to the other 2 seasons, while no notable differences were observed on a daily time scale.
Habitat selection varied seasonally, with more frequent use of the littoral zone during spring and summer, moving away from it in autumn and winter: use of open waters was higher at night. However, individual variability remained high.
Regarding spatial distribution, individual specimens were observed to occupy preferential home ranges while sharing broader feeding areas.

The LIFE Predator project was presented by BCCAS at the LIFE One Nature conference in Prague (April 22, 2026) through an oral presentation and a poster. The conference brought together over 60 representatives from various European Union countries, including Austria, Germany, Belgium, Slovenia, Slovakia, Hungary, Estonia, Latvia, Poland, Greece, Cyprus, as well as Serbia and Croatia.

Figure 23. Presentation of the LIFE Predator project at the LIFE One Nature conference in Prague (April 22, 2026).

Life PREDATOR

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2022 - 2027
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The Life PREDATOR Team:

The Water Research Institute of CNR (IRSA-CNR) as coordinator, in partnership with G.R.A.I.A. srl, the Protected Areas of the Cozie Alps, the Metropolitan City of Turin, the Faculty of Sciences of the University of Lisbon (CIENCIAS), the Science Research and Development Association of the Sciences Faculty of the University of Lisbon - FCiencias.10 (FC.ID), and the Biology Centre of the Czech Academy of Sciences - Biologické centrum AV CR (BCCAS).

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