

Internationale Fachtagung zum Alpensalamander

Symposium on the Alpine Salamander

13. - 15. November 2026
Salzburg, Austria

Der Alpensalamander - (*Salamandra atra*)
Lurch des Jahres 2026

Programm und Zusammenfassungen
Program and Summaries

DGHT
Deutsche Gesellschaft für Herpetologie und Terrarienkunde

AG Feldherpetologie und Artenschutz - DGHT -

MUSEUM FÜR NATUR & TECHNIK
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Österreichische Gesellschaft für Herpetologie

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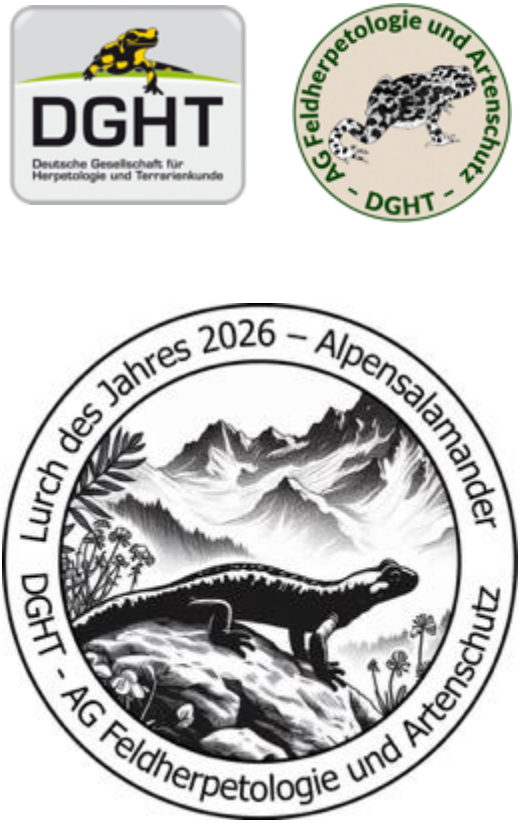
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Aussteller / Exhibitor



Titel: Alpensalamander *Salamandra atra* © Benny Trapp

AG Feldherpetologie und Artenschutz der Deutschen Gesellschaft für Herpetologie und Terrarienkunde e.V.



Programm und Zusammenfassungen
Program and summaries

Was ist wann und wo? / When and where?

Tagungsdatum / Date
13. - 15. November 2026

Tagungsort / Location
Haus der Natur Salzburg
Museumsplatz 5, 5020 Salzburg, Austria

Tagungsgebühr / Congress fees
DGHT/ÖGH-Member:	45,- €
Regular:	55,- €

Anmeldung / Registration: https://eveeno.com/symposium-alpinesalamander2026

In dieser ist die Verpflegung in den Kaffeepausen mit Getränken und Snacks inkludiert. Die Abendessen am Freitag und Samstag sowie das Mittagessen am Samstag sind nicht enthalten und erfolgen in Eigenverpflegung.

The conference fee covers organisational costs and includes refreshments during the coffee breaks (drinks and snacks). The evening dinners on Friday and Saturday as well as Saturday's lunch are not included and must be paid individually.

Begrüßungsabend / Welcome evening
Freitag, dem 13.11.2026, ab 18:00 Uhr
Friday, 13. Nov. 2026, at 06:00 pm

Michaelbeuern-Stüberl, Augustiner-Klosterbrauerei, Lindhofstraße 7
5020 Salzburg

Mitgliederversammlung / General meeting
Samstag, 14.11.2026, ab 17:15 Uhr im Tagungssaal
Saturday, 14. Nov. 2026, at 05:15 pm in the conference hall, open for guests

Geselliger Abend / Evening dinner
Samstag, 14.11.2026, ab 19:00 Uhr
Saturday, 14. Nov. 2026, at 07:00 pm

Restaurant Sternbräu, Griesgasse 23, 5020 Salzburg


Salzburg
main station
Salzburg
Augustinerbräu
Welcome evening
Haus der Natur
Conference
location
Sternbräu
Evening dinner
OpenStreetMap

Tagungsprogramm / Program

Freitag, 13.11.2026

14:00 – 16:00 Uhr	**Exkursion / Excursion Amphibien & Reptilien Zoo, Haus der Natur Salzburg**
18:00 Uhr	**Begrüßungsabend / Welcome evening** Michaelbeuern-Stüberl, Augustiner-Klosterbrauerei, Lindhofstraße 7, 5020 Salzburg (p. 5)

Samstag, 14.11.2026

Ab/from 09:00 Uhr/am	Anmeldung / Registration
Chair: PETER POGODA	
09:30 Uhr	Tagungseröffnung / Conference opening
09:45 Uhr	Begrüßung durch den Direktor des Hauses der Natur, Robert Lindner
09:50 – 10:20 Uhr	KWET, AXEL Lurch des Jahres 2026 - der Alpensalamander
10:20 – 10:45 Uhr	MALETZKY, ANDREAS, KAUFMANN, P., SCHUBERT, T. Kein Grund Schwarz zu sehen – der Alpensalamander in Österreich und was er noch vor uns verbirgt
10:45 – 11:30 Uhr	**Kaffeepause / Coffee break** - seminar room, ground floor
Chair: ANDREAS MALETZKY	
11:30 – 11:55 Uhr	GROSSENBACHER, KURT Einige Überlegungen zur Lebensweise und Verbreitung des Alpensalamanders (*Salamandra* atra) in der Schweiz und Umgebung
11:55 – 12:20 Uhr	SCHMIDT, BENEDIKT, LILOIA, D. Das Alpensalamander-Monitoring in der Schweiz
12:20 – 12:30 Uhr	**Vorstellung Tier des Jahres 2027**
12:30 – 14:00 Uhr	**Mittagpause / Lunch break**

Chair: BENEDIKT SCHMIDT

14:00 – 14:25 Uhr	SUNJE, EMINA Fragmented Populations of the Alpine Salamander in the Dinarides: Current Status and Conservation Perspectives
14:25 – 14:50 Uhr	JELIĆ, DUŠAN Development of environmental DNA for detection of *Salamandra atra* in Učka Nature Park, Croatia
14:50 – 15:15 Uhr	SEIDEL, UWE & BRANDES, F. Das Alpensalamander-Kompetenzzentrum
15:15 – 15:45 Uhr	**Kaffeepause / Coffee break** – Science-Café, 1st floor

Chair: FELIX VOGT-POKRANT

15:45 – 16:10 Uhr	ORLOVA, SVETLANA Analyse des Lebensraums von *Salamandra atra* in den Allgäuer Alpen
16:10 – 16:35 Uhr	DEHLING, MAXIMILIAN Kommentkämpfe bei Alpensalamander und anderen Salamandra-Arten
16:35 – 17:00 Uhr	HENN, JONAS, BÖNING, PHILIPP, A. PLEWNIA & S. LÖTTERS Identifizierung und Vielfalt des Hautmikrobioms von Alpensalamandern vor dem Hintergrund der Salamanderpest
17:15 – 18:30 Uhr	**Öffentliche Mitgliederversammlung der AG Feldherpetologie und Artenschutz**
ab 19:00 Uhr from 07:00 pm	**Gesellige Runde / Evening dinner** Restaurant Sternbräu, Griesgasse 23, 5020 Salzburg (p. 5)

Sonntag, 15.11.2026

Chair: MARTIN SCHLÜPMANN

09:15 – 09:20 Uhr	Begrüßung
09:20 – 9:45 Uhr	BÖNING, PHILIPP, VEITH, M., PLEWNIA, A. & LÖTTERS, S. An Update on *Bsal* in Germany with emphasis on the Alpine region
09:45 – 10:10 Uhr	RONER, LUCA, ANDREA, C., EMMA, C., PABLO, B., GERMÁN, O., ANTONIO, R. Monitoring Alpine salamanders: from double-observer counts to weather-dependent surface activity
10:10 – 10:35 Uhr	KRAFT, BRIGITTE Alpensalamander – Mortalität auf Straßen/Wegen in den Bayerischen Alpen
10:35 – 11:15 Uhr	**Kaffeepause / Coffee break** – Science-Café, 1st floor

Chair: KLAUS HENLE

11:15 – 11:40 Uhr	KAMMEL, WERNER, BERNHART, E., DONABAUM, R., KOBLMÜLLER, S. & SEDLMAYR, I. Der Alpensalamander am Südostalpenrand: Bestandssituation, Lebensraumansprüche, genetische Variabilität und dessen Bedeutung im UVP-Verfahren zu einem geplanten Pumpspeicherkraftwerk
11:40 – 12:05 Uhr	KOBLMÜLLER, STEPHAN, BERNHART, E., KAMMEL, W. & DONABAUM, R. More than meets the eye: Genetic diversity of the alpine salamander in Austria
12:05 – 12:30 Uhr	KLAR-WEIß, HENRIK Alpensalamander in der Vermeidungspraxis am Beispiel einer hochalpinen Leitungsbaumaßnahme
12:30 Uhr	Abschluss / Closing remarks
13:00 Uhr	**Ende der Tagung / End of symposium**

POSTER

DUBOURG, NICOLEI BÉLA, BURGSTALLER, STEPHAN, LEEB, CHRISTOPH & LANDLER, LUKAS:

First population assessment of *Salamandra atra* on the Schneeberg, Lower Austria

KUPFER, ALEXANDER, KÄMPF, BEATRICE & HAMMERSCHMIDT, NADINE:

Der Alpensalamander in Baden-Württemberg – Vorkommen, Lebensraum und Kartierung

TRCKA-ROJAS, CAROLINA, MIKSCHL, KATHARINA & ZAHN, ANDREAS:

Projekt AmphiLINK – Unterschätzte Gefahren für Amphibien: Von Weiderosten und Speicherteichen



Foto: A. Kwet

Zusammenfassungen / Summaries

(in alphabetischer Reihenfolge der Referentinnen und Referenten)

BÖNING, PHILIPP[1,2], MICHAEL VEITH[1], AMADEUS PLEWNIA[1,2], STEFAN LÖTTERS[1]

[1]Biogeography, Trier University, Universitätsring 15, 54296 Trier, Germany
[2]Wildlife Health Ghent, Ghent University, Salisburylaan 133, 9820 Merelbeke, Belgium

An update on *Bsal* in Germany with emphasis on the alpine region

Emerging infectious diseases in wildlife play a key role in driving global biodiversity loss. One such disease is 'salamander plague', caused by the chytrid fungus *Batrachochytrium salamandrivorans* (*Bsal*), which primarily affects salamanders and newts. *Bsal* is native to Asia and invasive in Europe. Outbreaks of *Bsal* in the wild have been recorded at over 120 localities in Belgium, Germany, Spain, and the Netherlands. Germany remains a *Bsal* hotspot with 90% of all confirmed cases located in five federal states. These *Bsal*-affected areas include the northern and southern Eifel region (confirmed in 2015 and 2017, respectively), the Ruhr region (confirmed in 2017) and its surrounding areas, the Steigerwald (confirmed in 2020), Swabia (confirmed in 2020), northern and southern Hesse (confirmed in 2024), and southern Lower Saxony (confirmed in 2025). In these regions, the salamander plague primarily affects the European fire salamander, causing dramatic population declines and mass die-offs. In contrast, little is known about the impact on other caudates at all ecological levels – including the Alpine salamander. So far, this species appears to be unaffected by the spread of *Bsal*. It is undisputed that *Bsal* is continuing to spread, but its rate and mechanisms remain largely unexplored. Despite intensive monitoring, detections in Bavaria outside known regions do not appear to be increasing. This observation contradicts those from known *Bsal*-epidemic areas. Given the many uncertainties and open questions, we face after a decade of *Bsal*'s invasion in Europe, it is clear that more resources must be invested in research and monitoring to prevent further *Bsal*-induced biodiversity loss.

DEHLING, MAXIMILIAN

[1] Universität Koblenz, Institut für Integrierte Naturwissenschaften, Abteilung Biologie, Universitätsstraße 1, D-56070 Koblenz
Kontakt: dehling@uni-koblenz.de

Abstract translated from german original via AI

Ritual combat in Alpine salamanders and other *Salamandra* species

Scuffles between males of Alpine and fire salamanders have long been known in the literature, but are rarely observed overall and even more rarely documented photographically or on film. During these encounters, the males try to climb onto each other's backs, clasp the opponent from above and rub their own throat against the opponent's head, while the other male makes defensive movements to free himself from the grip. In the literature, the interactions were first misinterpreted as regular matings involving a "belly-to-belly amplexus", and later as homosexual
matings. There is now much to suggest that they are in fact rival fights. The talk summarises the current state of knowledge on ritual combat in the Alpine salamander and other *Salamandra* species and subspecies.

DUBOURG, NICOLEI BÉLA[1], BURGSTALLER, STEPHAN[1], LEEB, CHRISTOPH[2] & LANDLER, LUKAS[1]

[1]University of Natural Resources and Life Sciences, Institute for Zoology, Gregor-Mendel-Straße 33, 1180 Vienna
[2]Natural History Museum Vienna, Department of Zoology, Burgring 7, 1010 Vienna
Contact: nicolei.dubourg@students.boku.ac.at

First population assessment of *Salamandra atra* on the Schneeberg, Lower Austria

The Alpine Salamander (*Salamandra atra*) is a viviparous, cold-adapted amphibian whose peripheral populations remain poorly quantified. Although

Austria hosts approximately 50% of the global range, robust estimates of density, survival, and activity are lacking, particularly for isolated populations at the northeastern edge of the species distribution. This study presents the first attempt to quantify the population size of *S. atra* on the Schneeberg (1,800–2,000 m a.s.l.), Lower Austria, in the Northeastern Alps, alongside recording the sympatric herpetofauna.

During the peak activity season (June–September 2026), four separate habitats – an alpine meadow, a scree slope, a rocky path, and a wide well-travelled path – were surveyed bi-weekly via systematic cover-object searches. Each capture was recorded with morphometrics, body and substrate temperatures, GPS, and high-resolution photographs. We aim to use photos for individual identification potentially exploiting highly variable gland openings (e.g., on the parotoids) and dorsal warts, which would enable non-invasive mark-recapture for alpine salamanders. The deployment of overnight camera traps is expected to provide a complementary activity dataset.

Fieldwork was completed with the end of September 2026; we captured 14 salamanders of currently unknown individual identity and three reptile records belonging to two species, indicating a low herpetofauna richness and detection probability at this high elevation. Preliminary analysis suggests activity driven by humidity and temperatures between 5 °C and 17 °C, and all captures occurring at substrate temperatures between 3.6 °C and 13.9 °C, with body temperatures closely tracking substrate values (mean difference ≈ 1.1 °C). Analysis will evaluate photo-identification and camera trapping as potential non-invasive tools for alpine salamanders, and establish a first baseline of occurrence and activity data to support future monitoring of this peripheral population.

JELIĆ, DUŠAN

Development of environmental DNA for detection of Salamandra atra in Učka Nature Park, Croatia

Unfortunately, no abstract was available at the time of printing.

GROSSENBACHER, KURT

Eichholzstrasse 18F, CH-3027 Bern
Kontakt: kurt.grossenbacher@bluewin.ch

Abstract translated from german original via AI

Some reflections on the life history and distribution of the Alpine salamander (*Salamandra atra*) in Switzerland and its surroundings

The Alpine salamander (*Salamandra atra*) differs markedly from other native amphibians in its reproduction and distribution. In the Pre-Alps south of Bern, a total of 19 animals were marked with microchips between 1995 and 2011 and followed over many years, with individual females reaching an age of more than 20 years. Activity lasts from the end of April to the end of October, peaking in July/August. A feared population decline could not be detected.
Depending on altitude, the developmental cycle lasts 3 to 5 years, a record among vertebrates. Their longevity and the small number of predators enable survival despite few offspring. The KARCH database records 8,245 Alpine salamander finds in Switzerland, with a clear focus in the northern Limestone Alps and outliers extending into the Central Plateau; the regions of Valais, Ticino and the Engadine remain largely free of Alpine salamanders, probably due to dryness and/or unfavourable substrate.
Unresolved occurrences and open questions remain especially in the border region between Switzerland and France (Savoy and Jura) and in parts of the Italian Alps, in particular the Orobic Alps and South Tyrol. Personal experiences with the "new" subspecies *aurorae* and *pasubiensis* will be presented. Even though the state of recording in Switzerland is very good, by no means all details regarding distribution have been clarified.

KUPFER, ALEXANDER[1], KÄMPF, BEATRICE[2] & HAMMERSCHMIDT, NADINE[1]

[1]Staatliches Museum für Naturkunde, Herpetologie, Rosenstein 1, D-70191 Stuttgart
[2]Landesanstalt für Umwelt, Nachhaltigkeit und Umwelt, Griesbachstraße 1-3, D-76185 Karlsruhe
Kontakt: artenkartierung@smns-bw.de; Artenkartierung@lubw.bwl.de

Abstract translated from german original via AI

The Alpine salamander in Baden-Württemberg – occurrence, habitat and mapping

The Landesweite Artenkartierung (LAK, State-wide Species Mapping) is a joint project of the State Museum of Natural History in Stuttgart (SMNS) and the State Institute for the Environment of Baden-Württemberg (LUBW), supported by the nature conservation associations of Baden-Württemberg: ABS (Amphibien-Reptilien-Biotop-Schutz Baden-Württemberg e.V.), BUND (Bund für Umwelt und Naturschutz Deutschland e.V.), DGHT (Deutsche Gesellschaft für Herpetologie und Terrarienkunde e.V.), LNV (Landesnaturschutzverband Baden-Württemberg e.V.) and NABU (Naturschutzbund Deutschland e.V.). Volunteer recorders survey amphibians and reptiles in grid squares of 5×5 km. The observations are reported via an online portal, collected centrally and evaluated for nature conservation purposes.

As an alpine relict species, the Alpine salamander (*Salamandra atra*) occurs in Baden-Württemberg only in the extreme south-east, in the Adelegg region. The occurrence is connected with populations in Bavaria and Austria. The Adelegg region is an important habitat of the Alpine salamander. Cool, damp ravines and stream valleys, mixed mountain forests and structurally rich mountain meadows provide suitable living conditions for the species.

Possible threats there arise from changes to its habitats: more intensive forestry and grassland use. Road construction and traffic can also fragment habitats and lead to direct losses during migration periods.

Since 1989, 53 records of the Alpine salamander have been collected by the LUBW, 57% of them via the LAK since 2014. In total, the species has been

recorded in four UTM5 grid squares. On the 2020 Red List of Baden-Württemberg it is classed as extremely rare. The population is currently considered stable.
Even though the Alpine salamander is currently not a LAK target species, every observation counts! Join in and simply report your find with a photo, location and date via the online portal. Further information and the link to the portal can be found at: www.artenkartierung-bw.de

KWET, AXEL

DGHT, Haldenstraße 28, 70736 Fellbach
Kontakt: kwet@dght.de

Abstract translated from german original via AI

The Alpine salamander – DGHT Amphibian of the Year 2026

By choosing the Alpine salamander (*Salamandra atra*) as Amphibian of the Year 2026, the DGHT has brought an amphibian species into the public eye that is exceptional not only because of its uniformly glossy black colouration. This viviparous inhabitant of inhospitable mountain zones is also special for its reproductive biology, and is a survival artist that stands for the diversity and vulnerability of alpine habitats.
Alpine salamanders inhabit structurally rich mountain forests, damp shrub heaths and alpine grass meadows of the Alps as well as some mountain ranges of the Balkans, mostly above 800 metres. While most amphibians reproduce in water and deposit numerous eggs or (like the fire salamander) also larvae, the viviparous Alpine salamander gives birth on land, after a gestation period of two to four years, to only one or two fully developed young – small replicas of their parents. The larvae develop entirely inside the mother's body, where the offspring feed on the remaining egg mass and later on a special cell tissue in the female uterus. Among all frogs and salamanders worldwide, the highly specialised Alpine salamanders are unique: only they give birth to fully developed young in this way.
Thanks to this special mode of reproduction, Alpine salamanders are independent of water bodies, but they also have an extremely low

reproductive rate and the longest gestation period of all land vertebrates; in addition, they show only a low dispersal capacity. Despite these disadvantages, the Alpine salamander is often still common where it occurs and its population is stable – the species is therefore classed as "least concern" on Germany's 2020 Red Lists. However, as a highly specialised, climate-sensitive species, the Alpine salamander is threatened above all by climate change through shrinking ranges, as well as by the looming salamander chytrid fungus, which fortunately has so far not been detected in *Salamandra atra* in the wild.

Since 2006, the DGHT has regularly proclaimed a representative of the native herpetofauna as Species of the Year, alternating between amphibians and reptiles, under its "Amphibian/Reptile of the Year" campaign, in order to promote the protection of our amphibians and reptiles. The main sponsors of this year's DGHT campaign are the Tiergarten Nürnberg and the Tiergarten Schönbrunn in Vienna, supported by long-standing cooperation partners: NABU, the Austrian Herpetological Society (ÖGH) and the Swiss info fauna karch.

In the first part of the talk, the background to this year's campaign is explained; in the second part, some features of the 2026 species are presented: its biology, distribution, habitats, threats and conservation.

By being chosen as "Amphibian of the Year 2026", the likeable "Berg- or Regenmandl", as the Alpine salamander is also known in its home region, is intended to act as an ambassador for the long-term protection of alpine nature – and not least to draw attention to the consequences of the global climate crisis.

HENN, JONAS[1], BÖNING, PHILIPP[1], PLEWNIA, AMADEUS[1,2] & LÖTTERS, STEFAN[1]

[1]Universität Trier, Biogeographie, Universitätsring 15, 54296 Trier, Germany

[2]Wildlife Health Ghent, Ghent University, Salisburylaan 133, 9820 Merelbeke, Belgium

Kontakt: henn@uni-trier.de

Abstract translated from german original via AI

Identification and diversity of the skin microbiome of Alpine salamanders in the context of salamander plague

Amphibian-pathogenic chytrid fungi are largely responsible for the worldwide decline of amphibian populations. The chytrid fungus *Batrachochytrium salamandrivorans* (*Bsal*) has been spreading in Europe for more than two decades and causes a disease in salamanders and newts known as "salamander plague". The infection is almost always fatal in fire salamanders, while other species survive the disease. For many species, however, the effect of *Bsal* in wild populations is unknown, which is why the pathogen potentially poses a serious threat to the entire salamander fauna of the Western Palaearctic. Locally restricted and genetically isolated forms of Alpine salamanders are exposed to a particularly high risk of extinction from *Bsal* because they belong to the genus *Salamandra* and have limited distribution ranges. So far, the pathogen has not been detected in their habitats.

Studies show that the skin microbiome – a community of predominantly symbiotic bacteria and fungi – plays a role in the infection dynamics between pathogenic chytrid fungi and their hosts. In 2022, skin swabs were taken from more than 200 individuals of *Salamandra atra atra*, *S. a. aurorae*, *S. a. pasubiensis* and *S. lanzai*. In an ongoing study, we were thereby able, using metabarcoding, to comprehensively identify the bacteria occurring on the salamanders for the first time and to compare them with existing datasets on fire salamanders. In this way, we aim to clarify whether Alpine salamanders are colonised by bacteria with potentially *Bsal*-inhibiting properties and whether phylogenetic, geographical or environmental patterns become visible in the composition of the skin microbiome.

Preliminary results on the composition and variability of the skin microbiome of the above-mentioned Alpine salamander taxa and its possible role in the context of the threat posed by the spread of *Bsal* will be presented and discussed.

KAMMEL, WERNER[1], BERNHART, EVA[1], DONABAUM, RAPHAEL[2], KOBLMÜLLER, STEPHAN[2] & SEDLMAYR, IRMGARD[1,2]

[1] Mag. Dr. Werner Kammel – Technisches Büro für Biologie, Im Erlengrund 6, A-8410 Wildon
[2] Institut für Biologie / Bereich Zoologie, Karl-Franzens-Universität Graz, Universitätsplatz 2, A-8010 Graz
Kontakt: office@wernerkammel.at

Abstract translated from german original via AI

The Alpine salamander on the south-eastern edge of the Alps: population status, habitat requirements, genetic variability and its significance in the environmental impact assessment for a planned pumped-storage power plant

In Austria, the Alpine salamander (*Salamandra a. atra*) has its largest occurrence worldwide, but at the southern and eastern edge of the Alps this is divided into numerous, often only small-scale populations (?). The only known occurrence in the continental zone of Austria exists in the border area between Styria and Carinthia. The fragmentation of its range in the south-eastern Alps must be considered in connection with the Würm glaciation, climatic factors and habitat structures. In the Styrian Border Mountains, the lower limit of the respective ranges lies at about 1,600 m above sea level, and thus only from the uppermost areas of a closed forest zone. The exposure of the habitats and the degree of forest cover evidently play no role. Only structural richness and the presence, at individual sites, of small water bodies flowing mostly subterraneously or of spring outlets proved to be decisive.

One of the largest pumped-storage power plants in Europe was planned on the Koralpe and would presumably have largely destroyed one of these isolated occurrences. In the years 2020–2022, extensive studies on the distribution and habitat of the species were carried out in the Koralm area.

Individuals examined could even be assigned by genetic analysis to alpine pastures only a few kilometres apart.
The Alpine salamander became the flagship species of the opposition to the construction plans, which were finally rejected with legal finality in August 2026, and also bought valuable time for clarifying other nature conservation objections, even though it is "only" a species of Annex IV of the Habitats Directive with an official conservation status of LC (least concern).

KLAR-WEIß, HENRIK

Landratsamt Berchtesgadener Land, FB 33 Naturschutz und Jagdwesen – Biodiversitätsberatung, Salzburger Str. 64, D - 83435 Bad Reichenhall
Kontakt: hernik.klar@lra-bgl.de

Abstract translated from german original via AI

Alpine salamanders in the context of development projects: a practical example with surprising findings

During the renewal of a water pipeline in the alpine zone, it had to be assumed that the Alpine salamander (*Salamandra atra*) would be affected. To avoid violations of species protection law, the construction area was fenced off and all individuals were collected. Although the habitat – a heavily compacted, much-frequented and partly paved footpath – seemed unsuitable at first glance, a number of individuals was found that clearly exceeds all figures given in the literature.
The talk explains the task and methodology, and addresses challenges in implementation as well as options for optimisation. The example impressively demonstrates that "structural deterrence" is not an avoidance measure for the Alpine salamander. The observation joins various publications on other amphibian and reptile species that call the practice of "deterrence" into question and suggest that only the most complete relocation possible is a technically and legally tenable avoidance practice.
The speaker is a biodiversity adviser (expert) at a Bavarian nature conservation authority and in this capacity accompanies, among other things, construction projects from the authority's side. The matter was explained in this publication: "Herpetofauna im Eingriffsbereich – Beispiel

Alpensalamander und eine kritische Betrachtung von „Vergrämungsmaßnahmen“" (Herpetofauna in the impact area – the example of the Alpine salamander and a critical look at "deterrence measures").

KOBLMÜLLER, STEPHAN[1], BERNHART, EVA[2], KAMMEL, WERNER[2] & DONABAUM, RAPHAEL

[1]University of Graz, Institute of Biology, Universitätsplatz 2, A-8010 Graz, Austria
[2]Technisches Büro für Biologie, Im Erlengrund 6, A-8410 Wildon, Austria
Kontakt: stephan.koblmueller@uni-graz.at

More than meets the eye: Genetic diversity of the alpine salamander in Austria

The Alpine Salamander (*Salamandra atra*) inhabits high-altitude environments in the Alps and the Dinarides. Four subspecies have been described, while genetic studies have identified three distinct lineages that may represent additional taxonomic diversity. Even though Austria encompasses a substantial part of the species' core distribution range, genetic data on Austrian populations remain scarce. We investigated the genetic diversity and population structure of *S. atra* across Austria using microsatellite markers from 20 newly sampled populations. Additionally, mitochondrial sequences from a subset of individuals per population were analyzed to place Austrian populations within a broader European phylogeographic context. Our results reveal pronounced genetic diversity and geographic structuring among Austrian populations. Haplotypes associated with the nominate subspecies, *S. a. atra*, were detected across multiple mountain ranges. Notably, one population from the Carnic Alps in southern Carinthia harbored highly divergent mitochondrial haplotypes and distinct microsatellite patterns, pointing to a hitherto unrecognized evolutionary lineage. Genetic diversity also differed between southern and central/northern Alpine populations, suggesting distinct evolutionary histories. The patterns are consistent with long-term persistence in southern refugial areas and more recent postglacial colonization of the central and northern Alps. Our findings provide new insights into the evolutionary history

and population structure of *S. atra* in Austria, with implications for its taxonomy, biogeography, and conservation. The genetically distinct Carnic Alps population warrants further investigation to clarify its taxonomic status and evolutionary significance. Broader geographic sampling and additional genetic data will help resolve relationships among lineages and inform conservation strategies for this high-altitude amphibian.

KRAFT, BRIGITTE

Landesbund für Vogel- und Naturschutz in Bayern e.v., Vogelmannstraße 6, 87700 Memmingen
Kontakt: BRIGITTE.KRAFT@LBV.DE

Abstract translated from german original via AI

Alpine salamander – mortality on roads and tracks in the Bavarian Alps

Currently, it can be assumed that human impact poses the greatest threat to the alpine salamander. In addition to factors such as habitat loss, mortality rates are increasing due to the use of heavily frequented paths and roads by motor vehicles and cyclists. The significance of this anthropogenic influence on the alpine salamander was investigated by the Landesbund für Vogel- und Naturschutz in Bayern e. V. (Bavarian Society for the Protection of Birds and Nature). The study began with a preliminary assessment in 2020 across 13 roads and paths in the Bavarian Alps, followed by a three-year monitoring program from 2022 to 2024 covering 20 roads and paths in the Allgäu Alps. In 2025, the monitoring was scaled back to 10 relevant roads and paths. Surveys were conducted eight times annually between mid-May and mid-September, each covering a 1.6-kilometer stretch. During each visit, researchers documented both live and dead specimens, as well as the types of path users. Motor vehicles were the primary cause of road-related fatalities, with cyclists also occasionally responsible. Restricting motor vehicle access on one of the surveyed routes led to a significant reduction in the number of animals killed by vehicles. The monitoring program was funded by the Bavarian Nature Conservation Fund (Bayerischer Naturschutzfonds)—supported by proceeds from the GlücksSpirale lottery—and by the

Government of Swabia (Regierung von Schwaben) through biodiversity-related funding.

MALETZKY ANDREAS[1], KAUFMANN PETER[2] & SCHUBERT TORBEN[2]

[1]ENNACON environment nature consulting KG, Altheim 13, A-5143 Feldkirchen bei Mattighofen
[2]Haus der Natur, Museum für Natur und Technik, Museumsplatz 5, A-5020 Salzburg
Kontakt: maletzky@ennacon.at

Abstract translated from german original via AI

No reason to see black – the Alpine salamander in Austria and what it still hides from us

It is an absolute master of its trade, our glossy-black, viviparous endemic of the Alps and Dinarides. Austria lies at the centre of its distribution range and therefore bears a very high responsibility for the preservation of this charismatic amphibian. The talk takes us to where the Amphibian of the Year has its densest populations in Austria and where it lives syntopically with the natterjack toad, the green toad or the great crested newt. We visit the few places where it co-occurs with the fire salamander, and the only sites of the species in the continental biogeographical region. Beyond that, there is a lot more to tell about the "Regenmandl", and many more open questions.

ORLOVA, SVETLANA

Hochschule für Nachhaltige Entwicklung, Fachbereich Wald und Umwelt, Alfred-Möller Straße 1, 16225 Eberswalde
Kontakt: sveta.v.orlova@gmail.com

Abstract translated from german original via AI

Analysis of the habitat of *Salamandra atra* in the Allgäu Alps

The talk is based on the results of a Bachelor's thesis (HNEE, Germany) and is devoted to the analysis of various habitat-related parameters that characterise the habitat of *Salamandra atra*. The study is based on the LBV monitoring data from 2024–2025 within the biodiversity project "Protection of the Alpine Salamander in Swabia" as well as own field surveys. The evaluation conveys a differentiated picture of the ecological requirements of the species with regard to terrain structure and climate, and identifies favourable site conditions. In addition, the study underlines the sensitivity of the species to anthropogenic disturbance and provides important foundations for targeted nature conservation management of its habitat in the Allgäu Alps.



Lebensraum des Alpensalamanders im Allgäu. Foto: A. Kwet

LUCA, RONER[1,2,3], ANDREA, COSTA[4] , EMMA, CENTOMO[3], PABLO, BURRACO[5], GERMÁN, ORIZAOLA[1], ANTONIO, ROMANO[2]

[1]University of Oviedo, Zoology Unit, Department of Biology of Organisms and Systems, C/ Catedrático Rodrigo Uría s/n, 33071 Oviedo, Asturias, Spain.
[2]National Research Council, Institute of BioEconomy, Via dei Taurini 19, I-00185 Rome, Italy
[3]MUSE - Science Museum, Research and Museum Collection Office, Conservation Biology Unit, Corso del Lavoro e della Scienza 3, 38122 Trento, Italy.
[4]University of Genova, Department of Earth, Environment and Life Sciences (DISTAV), Corso Europa 26, 16132 Genova, Italy
[5]Spanish National Research Council (CSIC), Doñana Biological Station, Avenida Américo Vespucio 26, 41092 Sevilla, Spain.
Contact: lucaroner@gmail.com

Monitoring Alpine salamanders: from double-observer counts to weather-dependent surface activity

Wild population monitoring plays a pivotal role in evaluating species conservation status. However, obtaining reliable abundance estimates across different sites for Alpine salamanders (*Salamandra atra*) is challenging due to their elusive behaviour, weather-dependent surface activity, sampling effort and difficulties in individual recognition. To address these challenges, we applied double-observer methods to estimate abundance and investigated the factors affecting salamander counts in two subspecies in northeastern Italy. For *S. a. atra*, we employed dependent double-observer counts and multinomial N-mixture models to estimate abundance and density without capturing or marking salamanders. Estimates were similar to those obtained using the removal method, with lower sampling effort. We also evaluated the influence of environmental variables on abundance, finding positive associations with terrain ruggedness and canopy cover. For *S. a. aurorae*, we investigated the relationship between weather conditions and surface activity, and its consequences for population estimates. We performed repeated double-observer counts in 25 forest plots during 12 sampling sessions. Using Bayesian multinomial N-mixture models, we estimated detection probability and surface availability, accounting for

temporary emigration. Surface availability varied among sessions and was influenced by the interaction between recent and antecedent rainfall. Recent rainfall increased surface activity mainly after periods of low antecedent rainfall. Detection probability among available individuals was high (0.88), while estimated density accounting for temporary emigration was 145 individuals/ha (90% CrI: 122–169). These results highlight the usefulness of double-observer methods and the importance of weather conditions for planning monitoring activities and interpreting population estimates.

SCHMIDT, BENEDIKT[1], LILOIA, DIANA[2]

[1] info fauna karch, Bellevaux 51, CH-2000 Neuchâtel
[2] Institut für Evolutionsbiologie und Umweltwissenschaften, Universität Zürich, Winterthurerstrasse 190, CH-8057 Zürich
[3] Institut de biologie, Université de Neuchâtel, Rue Emile-Argand 11, CH-2000 Neuchâtel
Kontakt: benedikt.schmidt@infofauna.ch

Abstract translated from german original via AI

Alpine salamander monitoring in Switzerland

Monitoring serves to describe long-term population trends. In Switzerland there are several monitoring programmes for amphibians, but mostly only pond-dwelling species are recorded. info fauna karch has started a collaboration with the Swiss Ornithological Institute in order to carry out monitoring of the Alpine salamander and thus close an important gap in knowledge about population developments of amphibians in Switzerland. In the talk we describe the set-up of the monitoring and show first results from the programme. Important questions here are how well the Alpine salamander is detected, how well occurrence and abundance can be estimated, and ultimately how well population trends can be assessed.

SEIDEL, UWE[1] & BRANDES, FLORIAN[2]

[1]Citizen Conservation Foundation gGmbH, Reichenbergerstr. 88, 10999 Berlin
[2]Wildtier- und Artenschutzstation, Hohe Warte 1, 31553 Sachsenhagen
Kontakt: uwe.seidel@citizen-conservation.org

Abstract translated from german original via AI

The Alpine Salamander Competence Centre

In October 2024, German authorities confiscated the considerable number of more than 80 rare Alpine salamanders. The animals seized are forms with a very limited local distribution range, specifically the Aurora Alpine salamander (*Salamandra atra aurorea*), the Pasubio Alpine salamander (*Salamandra atra pasubiensis*) and Lanza's Alpine salamander (*Salamandra lanzai*). With the consent of the Lower Saxony State Agency for Water Management, Coastal Defence and Nature Conservation, which owns the animals, and with financial support from Citizen Conservation, the Alpine Salamander Competence Centre could be established to ensure permanent care in the interests of species conservation. The primary aim is to acquire sound expertise in the breeding and care of Alpine salamanders by keeping the existing animals and – where possible – to build up ex-situ populations. In addition, cooperation with the countries of origin of the animals is to be intensified in order to gain deeper insights into the biology of these species and, if necessary, to be able to make salamanders available for species conservation purposes. The Competence Centre is operated at two sites in Lower Saxony, the Wildtier- und Artenschutzstation e.V. in Sachsenhagen and the Erlebniszoo Hannover.

SUNJE, EMINA

Evolutionary Ecology Group, Faculty of Science, University of Sarajevo, Zmaja od Bosne 33-35, 71000 Sarajevo, Bosnia and Herzegovina

Fragmented Populations of the Alpine Salamander in the Dinarides: Current Status and Conservation Perspectives

Isolated populations of the alpine salamander (*Salamandra atra prenjensis* Mikšić, 1969) persist across the Dinaric Arc as relicts of a formerly more continuous Pleistocene distribution. These fragmented "sky-island" populations experience contrasting environmental conditions driving geographic variation in genetic, morphological, and physiological traits.

In this work I present aspects of biological variation among Dinaric populations and assess their adaptive potential and conservation prospects. Genetic analyses revealed the distinct evolutionary history of Dinaric populations, evidence of historical connectivity, and the importance of Mt. Prenj as a diversification center. Morphological comparisons between Alpine (*S. a. atra*) and Dinaric (*S. a. prenjensis*) populations identified differences in body length, costal groove number, and head/jaw morphology. Physiological analyses, within *S. a. prenjensis*, further revealed variation in evaporative water loss, with individuals from drier habitats exhibiting greater resistance to desiccation.

Species distribution modelling under future climate scenarios predicted substantial losses of climatically suitable habitat, ranging from 52–87% in the Dinarides, with a marked decline in habitat suitability in the next 45 years.

These findings highlight the conservation vulnerability of geographically isolated Dinaric populations, which harbor distinct evolutionary diversity but face severe climate-driven habitat contraction. Although observed biological variation suggests some adaptive potential, it remains uncertain whether this will be sufficient to withstand the projected pace and magnitude of climate change.

TRCKA-ROJAS, CAROLINA[1], MIKSCHL, KATHARINA[2] & ZAHN, ANDREAS[3]

[1]Naturschutzbund Österreich, Projekt AmphiLINK, Museumsplatz 2, A-5020 Salzburg
[2]Bund Naturschutz in Bayern e.V., Projekt AmphiLINK, Stetten 51, D-84494 Niedertaufkirchen
[3]Bund Naturschutz in Bayern e.V., Projekt AmphiLINK, H. Löns Str. 4, D-84478 Waldkraiburg
Kontakt: katharina.mikschl@bund-naturschutz.de

Abstract translated from german original via AI

AmphiLINK project – underestimated dangers for amphibians: from cattle grids and storage ponds

The cross-border Interreg project "Amphibienschutz LINKED" (AmphiLINK, 2025–2028) is dedicated to reducing causes of threat and improving amphibian protection in Bavaria, Tyrol, Salzburg and Upper Austria. In addition to protective measures on roads, the restoration of spawning waters and the development of a digital recording app, the focus is on citizen science, knowledge transfer and cross-border exchange of experience.
One focus of this poster is the trapping effect of anthropogenic structures. Cattle grids, gullies, and light and ventilation shafts in particular can become deadly traps for migrating amphibians. Because there are no means of escape, the animals often die from desiccation, starvation or drowning. In the project, cattle grids are being retrofitted with suitable escape aids, existing protection approaches are being supported and further developed together with authorities and stakeholders from agriculture and forestry. Proven methods, best-practice examples and practical experience are being collected and brought together in a fact sheet.
Another focus is the threat to amphibians from the management of storage ponds in ski areas. In particular, the rapid draining of the water bodies for operational reasons can lead to considerable losses of amphibians and their developmental stages. Building on existing recommendations, suitable protective measures are being discussed with ski-area operators and experts, tested for practicability and optimised.

The resulting fact sheets are intended to support the implementation of amphibian-friendly solutions, promote knowledge transfer and contribute in the long term to reducing avoidable amphibian mortality.

Allgemeine Hinweise / Remarks

Veranstalter / Organizers
AG Feldherpetologie und Artenschutz
PETER POGODA, KLAUS HENLE, MARTIN SCHLÜPMANN, FELIX VOGT-POKRANT
info@feldherpetologie.de
Deutsche Gesellschaft für Herpetologie und Terrarienkunde (DGHT) e. V.
AXEL KWET

Haus der Natur Salzburg, PETER KAUFMANN
Österreichische Gesellschaft für Herpetologie (ÖGH) und Societas Europaea Herpetologica (SEH), ANDREAS MALETZKY
info fauna karch, BENEDIKT SCHMIDT

Herausgeber / Publisher
AG Feldherpetologie und Artenschutz
Deutsche Gesellschaft für Herpetologie und Terrarienkunde (DGHT) e. V.

Gebühren / Conference fees
Für die Teilnahme an der Tagung wird eine Gebühr von € 45,00 für Mitglieder der DGHT bzw. ÖGH und € 55,00 für reguläre Teilnehmer erhoben.
€ 45,00 for DGHT and ÖGH-Members
€ 55,00 Regular fee

Redaktion / Editors
PETER POGODA, AXEL KWET, KLAUS HENLE, PETER KAUFMANN, ANDREAS MALETZKY, BENEDIKT SCHMIDT
Layout: PETER POGODA

Stand zum Zeitpunkt der Drucklegung / As of the date of printing
05. November 2026, Änderungen vorbehalten

Impressum
AG Feldherpetologie und Artenschutz der DGHT
Vertreten durch:
PROF. DR. KLAUS HENLE
MARTIN SCHLÜPMANN
FELIX VOGT-POKRANT
DR. PETER POGODA



DER ALPENSALAMANDER

Lurch des Jahres 2026







Steckbrief: Gesamtlänge bis 15 cm; Grundfärbung oberseits lackschwarz, glänzend, Unterseite bleigrau; Kopf flach mit großen Augen; nierenförmige Ohrdrüsen; Rumpf durch 11–13 Rippenfurchen segmentiert; beiderseits der Rückenmitte eine Reihe von Warzen mit Drüsen.

Lebensraum: Misch- und Nadelwälder mit reichlich feuchtkühlen Verstecken (Felsspalten, Steine, Totholz, Wurzelhöhlen, Kleinsäugerbaue), Blockschutthalden, Gehölze an Gebirgsbächen, oberhalb der Baumgrenze Zwergstrauchheiden, alpine Grasmatten.

Lebensweise: unabhängig von Gewässern rein terrestrisch; je nach Höhenlage nur 4–6 Monate (Mai bis Oktober) aktiv, insbesondere nachts bei Regen; lebendgebärend, nach 2–4 Jahren Tragzeit Geburt von nur 1–2 voll entwickelten Jungtieren; Nahrung: diverse Insekten, Würmer, Tausendfüßer, Spinnentiere, Schnecken, Asseln.

Gefährdung: Rote Listen: Deutschland „ungefährdet", Österreich „Gefährdung droht", Schweiz „nicht gefährdet"; Rückgangsursachen: Lebensraumverschlechterung durch Wegebau und erhöhte Nutzungsintensität in Wäldern, Intensivierung der Almwirtschaft durch Düngung und Beweidungsdichte, Klimawandel, Straßenverkehr.

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Weitere Informationen finden sich in der Broschüre bzw. im Faltblatt zum Lurch des Jahres 2026. Bezug oder Download: DGHT (Anschrift unten), Internet (www.dght.de).

Herausgeber des Posters:
Deutsche Gesellschaft für Herpetologie und Terrarienkunde e.V. (DGHT)
Vereinssitz/Distr. Dr. Ave. Kurt, Fallbach

Kontakt: DGHT-Geschäftsstelle,
Postfach 21 04 0280, Bahnhofsviertel
Tel. (0211) 60 21 221,
E-Mail: gs@dght.de,
Web: www.dght.de

DGHT-Arbeitsgruppe Feldherpetologie und Artenschutz
Web: www.feldherpetologie.de

Text: Renate Pelzmann, Mannheim

Bildnachweis:
Andreas M. (1), Bjoern Thiel (1), Michael Wurmbrau (1)

Gestaltung:
Andreas Gies & Sandra Trier, Forth
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Dank an die Sponsoren für die Unterstützung.

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