

## Euro Speleo Project: Diving in Megalodontencanyonsiphon, Hirlatzhöhle, Upper Austria



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### Introduction and objective

Hirlatzhöhle is Austria's 3<sup>rd</sup> longest cave with a total length of over 113 km. The current focus of exploration is at the far west, the far east and the highest parts of the cave. All those areas are only reachable by long camping trips lasting several days. Diving in Hirlatzhöhle has also been of interest for a long time – there are several sumps to be found in the cave, and diving through them lead to discovery of long passages. As Hirlatzhöhle is one of Austria's most prominent caves it has been attracting cavers from all over Europe for a long time.

One sump that was not dived until February 2022 is the siphon at the end of *Megalodontencanyon* in the west of the cave. A first attempt to dive that sump by Peter Hübner and Barbara Wielander in February 2019 was aborted when both divers reached their gas-turnaround point before being able to resurface. However, it was noticed that the spacious underwater passage continues as big as before. It is believed that the water in this sump drains into Waldbachursprung, a spring approx. 140 m below *Megalodontencanyon* (fig.1).

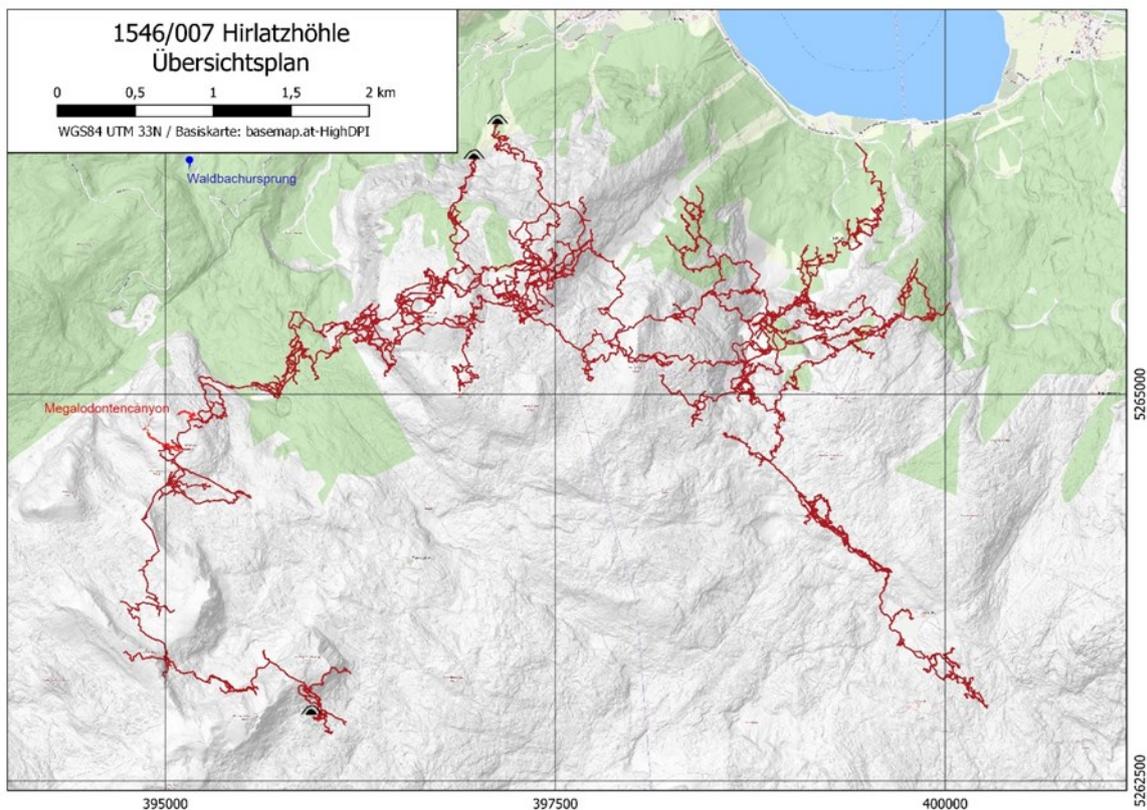


Figure 1: Map of Hirlatzhöhle, showing a plan-view of the cave, Megalodontencanyon, the cave-entrances and the spring Waldbachursprung. Map: Axel Hack

The sump is located at the end of *Megalodontencanyon* in the area of *Wilder Westen*, approx. 10 hours from the cave-entrance. To reach the sump, divers and supporters have to set up their camp at *Grünkogelbiwak* approx. 8 hours from the cave entrance. The way to this camp leads through mostly large passages and pits equipped with ladders. From there another 1-2 hours are needed to pass

*Megalodontencanyon*. In this narrow canyon, several obstacles like pitches and traverses need to be passed. At the end of the canyon a spacious sump is situated. Diving is carried out downstreams. Although the current is not noticeable during periods of low water, diving can only be done in winter (otherwise there is too much water in the lower parts of the cave). The aim of the expedition was to dive the sump at *Megalodontencanyon* and to explore and map possible passages behind this sump.

## Results

Figure 2: Group-Picture of the expedition-team in the clubhouse in Obertraun, preparing for the trip. Back (left to right): Erik Birkhoff (NI), Lisette de Graauw (NI), Zsolt Nemeth (Hu), Attila Szoradi (Hu), Lajos Sass (Hu), Ferenc Kovacs (Hu). Front: Barbara Wielander (A) and Stefan Gaar (A). Photo: Barbara Wielander

Aided by an international support team consisting of 6 cavers from Hungary and the Netherlands Barbara Wielander (A) and Stefan Gaar (D) managed to dive through *Megalodontencanyon Siphon* in the West of Hirlatzhöhle for the first time and thus got a little closer in linking Hirlatzhöhle to the nearby karst-spring Waldbachursprung (fig. 2). The group started their ascent to the cave on Saturday morning (5.2.2022) – the steep slope leading up to the cave was covered in snow and the final ladder leading to the cave entrance had to be dug out before the group could enter the cave (fig.3). In the entrance part *Zubringer* beautiful ice-formations were found (fig. 4) and all cavers enjoyed this scenic part of the cave. On their long way to the west the group decided to stop in the camp *Halle des Staunens Biwak* for the first night (approx. 6 hours from the cave-entrance) before continuing their way to the west and reaching their final camp *Grünkogelbiwak* on Sunday, 6.2., (fig. 5) around noontime. The rest of the day was devoted to setting up camp, sight-seeing and relaxing. On Monday (7.2.) the group started the descent to *Megalodontencanyon-Siphon*. The start of the canyon, which also serves as water-supply for camp, is situated approx. 20 (comfortable) minutes downhill from camp.

After a few meters the passage narrows to an awkward canyon that proved tiresome to negotiate with the heavy bags full of diving-gear (fig. 6). Still the team enjoyed the journey downwards and everyone was impressed by the huge amounts of nicely washed out *Megalodonts* (fig. 7) which give the canyon its name.



Figure 3: Wintry ascent to the cave. Photo: Barbara Wielander



Figure 4: Erik Birkhoff admiring ice-formations in Zubringer. Photo: Barbara Wielander



Figure 5: Stefan and Ferenc in Grünkogelbiwak, packing gear. Photo: Barbara Wielander



Figure 6: Resting at one of the more comfortable places in Megalodontencanyon. Left to right: Zsolt Németh (top), Lisette de Graauw (below), Erik Birkhoff, Attila Szórádi. Photo: Barbara Wielander

Some obstacles had to be equipped with rope which slowed down the progress (fig. 8). Around noontime on Monday the team finally reached the sump, where crystal-clear water greeted the divers. Changing into diving-gear took some time, but finally the two divers were able to disappear into the sump.

The sump proved to be very easy and comfortable to dive (as opposed to the canyon before) – the maximum depth was 10 m, the water continued to be very clear, and there was enough space for both divers to comfortably dive side by side and enjoy the

dive. As they were diving into the sump downstream (with a little current due to the water flowing through the canyon) both were very cautious regarding their air supply, planning on using only a sixth of their total air supply on their way in. After only 6 minutes (respectively a distance of 65 m) they managed to surface again and found themselves in a spacious chamber where the stream disappears again into a narrow canyon that could maybe be explored by cavers not worrying about tearing their drysuits on sharp megalodonts (fig. 9). Wetti and Stefan were more interested in a gallery leading upwards at an angle of approx. 30° (fig. 10). They managed to follow this roomy passage easily, and after only a few metres the water of the stream could not be heard anymore. Deep, water filled pools along that passage suggest that this gallery is flooded at least occasionally (fig. 11). After surveying approx. 100 m in this gallery, Wetti and Stefan reached a pit where they stopped the survey.



Figure 7: Megalodonts. Photo: Barbara Wielander



Figure 8: Stefan descending a step in Megalodontencanyon. Photo: Barbara Wielander

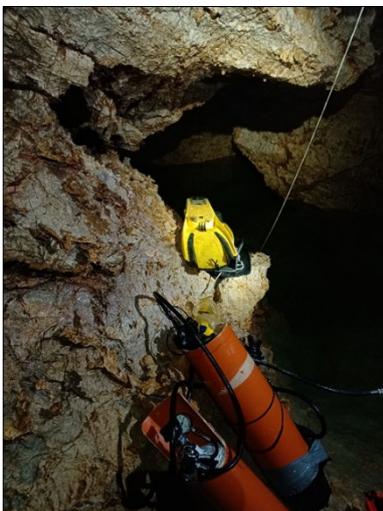


Figure 9: Place of surfacing after passing the sump. Photo: Barbara Wielander



Figure 10: Stefan Gaar exploring the newly found gallery behind the sump. Photo: Barbara Wielander



Figure 11: Stefan looking at one of the pools in the new gallery. Photo: Barbara Wielander

The gallery seems to continue at the bottom of the pit. Both divers returned after three hours and were greeted enthusiastically by their support-team. After another night and an uneventful trip back to the cave entrance the group left the cave on Tuesday (8.2.) afternoon.

### Description of the new parts:

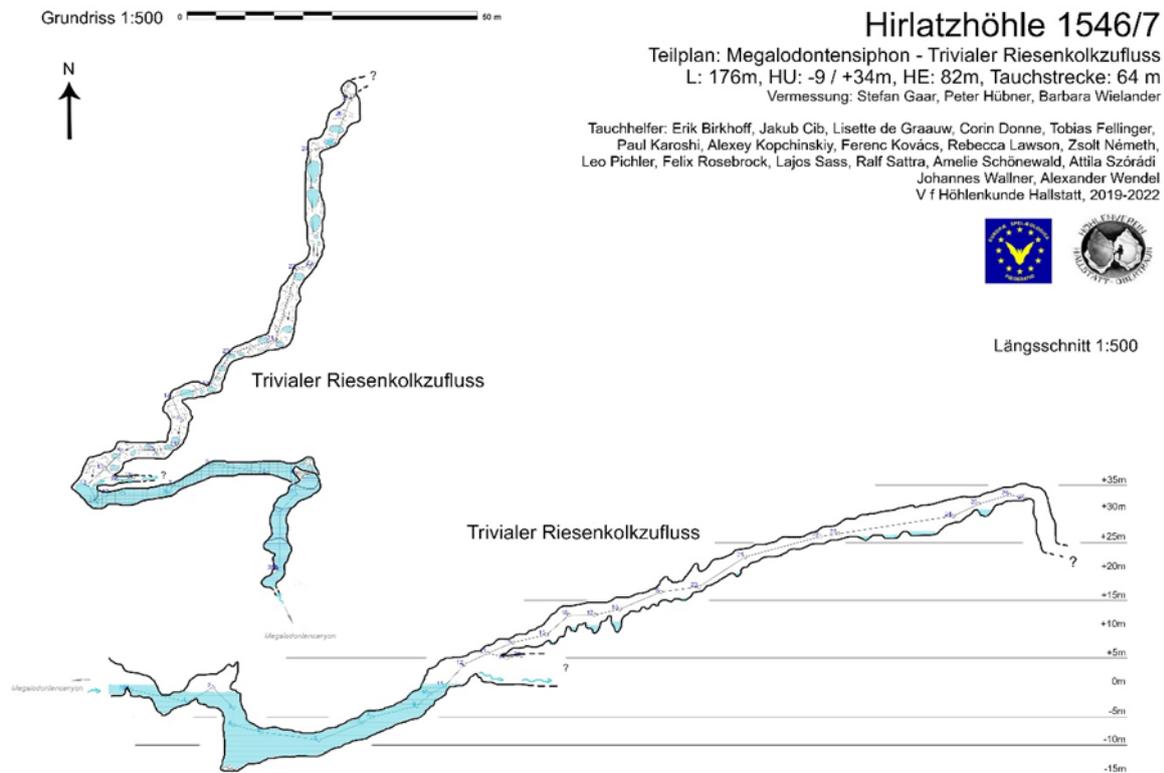


Figure 12: Map of the siphon and the new passages behind the siphon. Map: Barbara Wielander

The siphon consists of two parts: The first part of the siphon continues North, the same direction as the canyon before. After 5 metres (depth approx. 3 m), a small air-filled chamber is reached. In 2019, when this chamber was discovered, it was noticed that there the water level is 1 m below the water level of the entrance-pool to the siphon, suggesting that occasionally the water-level in the whole siphon is lower and the chamber is sufficiently airtight to keep air trapped against the rising water-table at least for a while.

The continuation from this chamber is a water-filled pit, approx. 8 m deep. After descending this pit, the water-filled passage (approx. 1,5 m wide and 3 m high) continues to the west. After approx. 45 m the siphon ends at a shallow pool. Just after the pool the water disappears into a narrow canyon (maybe penetrable), leading eastwards. The main continuation is a spacious gallery heading upwards to the north-east. The gallery was surveyed to a length of 103 m, before a pit of approx. 10 m depth was reached. The pit seems climbable but given the remote location, it will need the help of a handline to descend it. At the bottom the passage seems to continue as before. The main feature of the passage are large pools filled with water. Hence the passage was named *Trivialer Riesenkolkzufluss* ("trivial inlet with large potholes") – fig. 12.

### Outlook

For November 2022 it's planned to dive in *Kleiner Schritt zur Seite*. This part of the cave is also located near *Grünkogelbiwak* and is much easier accessible than *Megalodontencanyon Siphon*.

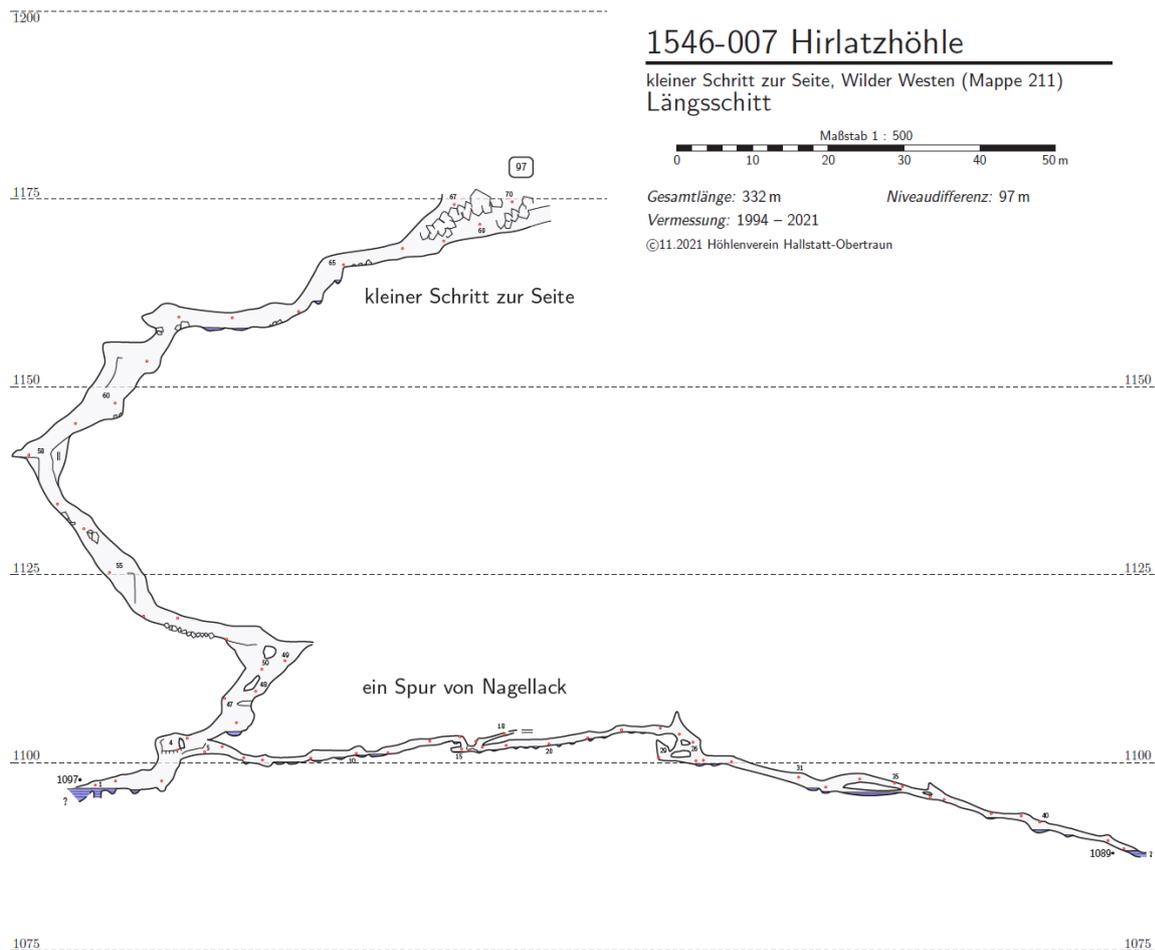


Figure 13: Profile view of Kleiner Schritt zur Seite. Map: Axel Hack



Figure 14: Tobias Fellinger sitting at the entrance of the eastern siphon in Kleiner Schritt zur Seite. Photo: Barbara Wielander

Basically, a steep but climbable fissure can be followed to a depth of approximately 80 m. There a horizontal gallery is met. To the east the main passage can be followed for several meters before a sump is met. To the west a rather low passage *Eine Spur von Nagellack* can be followed for approx. 100 m before it sumps out (fig. 13). This part of the cave has been mapped in the 1990ies, but then no further attention was paid to it. When re-surveying it in autumn 2021, it was noticed that the siphon at the eastern end is spacious enough to attempt a dive (fig. 14). Unfortunately, the siphon at the western end (which is only 150 m linear distance from the newly found gallery behind *Megalodontencanyon Siphon* – fig. 15) is rather small, so the first attempt will be to dive the eastern siphon, hoping that the passage is heading back towards *Trivialer Riesenkolzfluss* behind the sump. This seems possible as both nearby passages indicate that they act as overflow drains during high water levels (e.g. snowmelt or floods) and therefore are connected. If no progress in *Kleiner Schritt* can be made, the exploration of the passages behind *Megalodontencanyon Siphon* will continue next winter.

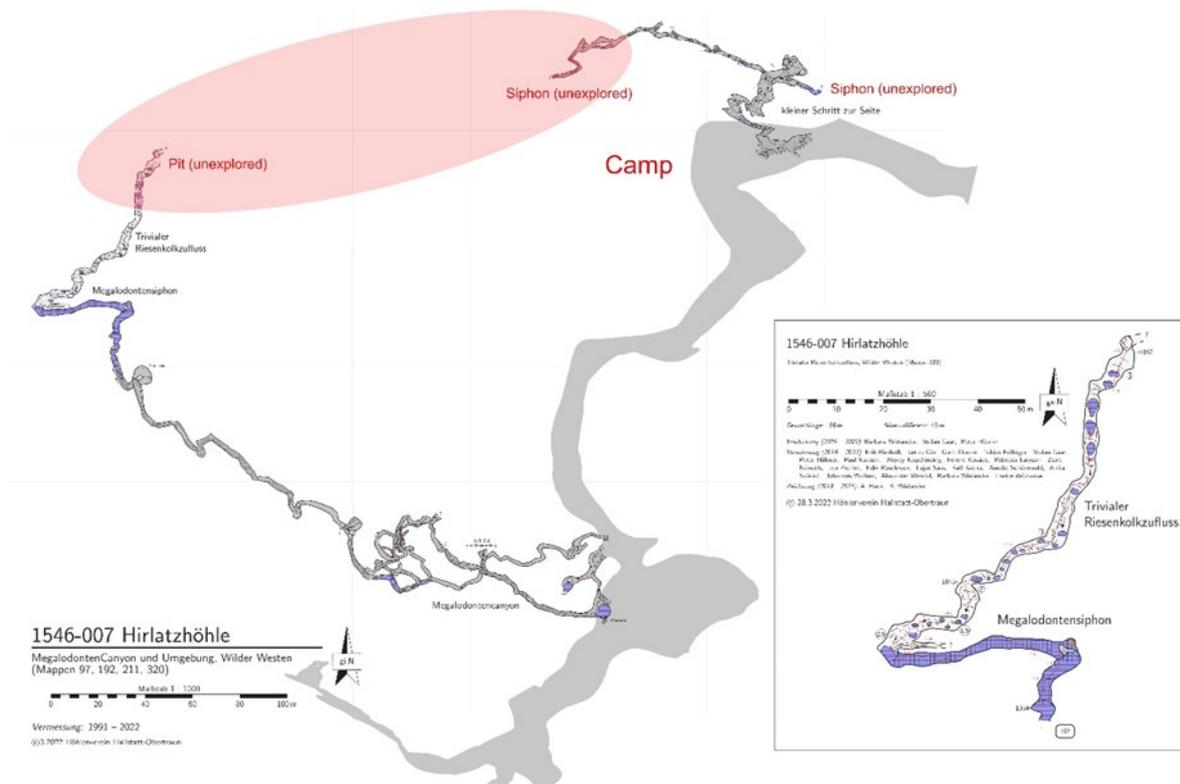


Figure 15: Overview (plan) of the area around Grünkogelbiwak, showing the camp, Megalodontencanyon and Kleiner Schritt zur Seite. Map: Axel Hack

## Thanks

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