The Student who was sucked under by quicksand (Utah, U.S.A. 2011)

America student Rob Tesar was nearing the end of a twenty-five-day survival exploration, hiking and camping with three friends as they followed the course of Utah’s Dirty Devil River. The group was travelling along a trail that led down to a section of bank on the eastern side of the river when they ran into trouble. The bank appeared to be mostly mud and sand rather than rock, but they were confident they could cross the river at this point. Tesar volunteered to go down and check it out.

He was about twenty feet clear of dry land when he noticed he was having difficulty moving his feet. Sensibly, he decided to turn back immediately, but before he could move any further his boots suddenly disappeared beneath the surface. Very quickly he found himself up to his knees in mud. One of his friends had also been sucked under, but fortunately only one foot was trapped in the ooze.

Tesar realised they had struck a patch of quicksand, a natural phenomenon that occurs when fine particles of sand are held together by friction in a slippery mess of mud and water. From a distance it looks perfectly ordinary, but when the mixture is disturbed, for example during an earthquake, the sand effectively liquefies, meaning it can no longer support any weight. Under the right circumstances the process needs only a small disturbance to set it off, and – as the two students were now finding out – it can be as little as the pressure of someone walking on it.

Sometimes it’s possible to spot quicksand by looking out for areas of ground without any vegetation, or large expanses of bright green moss. But hikers often don’t realise what they’re standing on until it’s too late. The liquefaction takes just a second or two, which was what happened that afternoon on the bank of the Dirty Devil River.

The good news is that, unlike in films, the nature of quicksand means that anyone stepping onto it will sink only halfway, no matter how deep the sand or how heavy the person. The bad news is that once someone is stuck up to the waist it’s impossible to climb out on their own. Bystanders can’t help much either, since the strength needed to pull them out would be about the same as to lift a solid object weighing a tonne or more.

Unsurprisingly, the other two members of the group didn’t know this and hoped they could pull them out. The main worry at this time was the weather. Eastern Utah in November is a chilly place, and with the temperature dropping to around 4c at night anyone in wet clothes and unable to move is at serious risk of hypothermia.

After struggling to free themselves for about fifteen minutes, the two realised that all they were doing was wasting energy. Fortunately, their friends had a rope with them, as well as the equipment climbers use to lower themselves into narrow rock canyons. The two on the shore managed to rug up a pulley system, attaching one of the ropes to a secure rock on the bank in the hope they could use it to free their friends.

It took an hour, and with only one foot trapped in the quicksand it was eventually possible to pull the first free. Tesar wasn’t so lucky. He was stuck fast and becoming exhausted. In an attempt to take the weight off his feet he managed partly to lie down on the sand. But this meant his clothes began to absorb water and his hands went numb from the cold in less than a minute.

By 3 p.m it was colder still, with the sun beginning to sink behind the rocks of a nearby canyon. Aware of the dangers posed by the falling temperature they decided to activate a device designed for precisely this kind of emergency. A Personal Locator Beacon, or PLB, uses coded satellite signals to alert search and rescue parties to the location of someone in danger.

While waiting for help to arrive, Tesar’s friends found pieces of driftwood and managed to build him a makeshift platform. By twisting round slightly he could rest his upper body and keep it out of the water. Hot food was also on its way, prepared using the group’s portable stove. But Tesar was now desperately cold, and even after a warming meal of sausage, cheese and couscous his hands and lower body still felt numb.

It was eight o’clock in the evening when they heard the distinctive sound of rotor blades echoing off the canyon walls. A helicopter touched down shortly afterwards, by which time Tesar was thigh-deep in the quicksand with the water almost up to his waist.

Initially the rescue crew decided to pull him free using the power of the helicopter. They threw straps and webbing across the sandbank and Tesar was instructed to make a harness. This would be attached to part of the helicopter and then, hovering just above his head, the pilot would gently ease him out of the quicksand.

It sounded good in theory: a powerful, modern helicopter versus several feet of wet sand, or man versus nature. Tesar felt confident that technical ingenuity would win the day, but he was wrong. He realised very quickly that far from lifting him free of danger, the helicopter was at risk of tearing him in half.

Signalling to the pilot, he brought the rescue attempt to an end, and little more than an hour after arriving at the scene the helicopter flew off to get further help. During this time several more hikers arrived, and Tesar tried to dig himself free using a shovel one of them had brought. This didn’t work either. Unable to get sufficient leverage to dig properly, every time he managed to dig a little hole it quickly filled with the deadly mix of sand and water. Clearly, he would have to rely on expert help rather than his own dwindling strength.

When the helicopter re-appeared, it was carrying several inflatable rafts. Two were floated out to Tesar, each carrying four or five volunteers. While two of them supported his upper body as best they could, the remainder busied themselves trying to free his legs.

The work was hard and painfully slow. Half the rescuers were digging away with shovels, but just as important were the others who used their hands to prevent the sand and silt from the river flowing back into the spaces left behind. It was as if every effort to free Tesar from the oozing surface was matched by an equal effort on the part of the quicksand as it held on to its prey.

As midnight came and went Tesar was still stuck. Working fast but methodically, the diggers had been at it for well over half an hour. No one had taken a break yet they seemed to have made no progress. A third raft was positioned between the work party and the river bank, so that Tesar could clamber onto it once he was out of danger. But nearing one o’clock in the morning it was still drifting empty.

It took a solid forty-five minutes of digging before Tesar thought he could feel any progress, and then suddenly he was sure of it. Although numb from the waist down, he told the diggers that his right boot had moved slightly. And when his leg seemed to shift, he was even more confident that the rescue was working.   
His leg hadn’t moved more than an inch but it was enough to spur the diggers on. Desperate to loosen the quicksand’s paralysing hold, and with everyone digging calmly but faster than before, he pulled as hard as he could. At first nothing happened, but then one leg came up and seconds later the other did too. Tesar was finally free of the quicksand.

Incredibly, it had taken nearly thirteen hours to wrestle him free, half the day and half the night since his boots had first slipped beneath the surface. It was another three days before the feeling returned to his legs, but with no permanent damage to his nerves – and no serious after-effects from the near-freezing temperature – Rob Tesar rejoined his group and went straight back out on the trail.