

Saving the Caspian Salmon



Searching for the Caspian salmon

Blue Marine Foundation's intrepid project manager, Rory Moore braves bullets and goes fishing with a poacher in an effort to save the Caspian salmon.

In 1953, the vast and imposing Mingachevir dam was built across the Kura River in Azerbaijan to create the largest reservoir in the Caucasus mountains. The reservoir produced hydroelectricity and provided for expanding agriculture under the Soviet State regime. It was also the first nail in the coffin towards the extinction of several species of anadromous (fish born in fresh water, spends most of its life in the sea and returns to fresh water to spawn) endemic fish, which could no longer reach the

cold, oxygenated spawning grounds, which they rely on for their survival. The sturgeon and salmon were stopped in their tracks.

64 years later I was standing over a flapping and jumping pile of what appeared to be brown trout (*Salmo trutta*) at a state run fish farm in the remote mountain village of Goygol in Western Azerbaijan and talking fish with Tahir, a retired ecologist and expert on Caspian salmon, one of the largest trout in the world. Tahir was regaling stories from the years after the construction of



Caspian salmon samples at the Ministry of Environment



The poacher's favourite trout fishing spot

the dam, when as a young biologist he would see the fish queuing up before the great wall with nowhere to go. "There were so many fish, you could walk across the river" he said, and of course the local inhabitants helped themselves. "Are these fish what you remember as Caspian salmon (*Salmo ciscaucasicus*)?" I asked. "It's possible, said Tahir, but these fish have never been to sea, have never changed their diet and have never had a chance to grow large and silvery so it's hard to tell – we will have to compare the genetics." "Compare the genetics to what", I said – no one has seen a Caspian salmon in these rivers for decades". "Don't worry", said Tahir "I took samples back in the 1960s and preserved them in formaldehyde – I think they are in the attic". Brilliant!

At this point, the proud and committed farm manager, Ilham stepped in. "Look, these are Kura trout – I bought the stock from Russia 35 years ago. I breed them and release 100,000 into the sea and rivers every year. I also have rainbow trout and I release these into the Goygol Lake." I asked Ilham if the trout were naturally spawning in the upper river systems and he said they were, but only in the winter months and only on the border of Nagorno-Karabakh,

a landscape occupied by Armenia with a violent history, widespread military presence and by default, inaccessible to poachers. The thought of being near a semi-war zone troubled me and the question of the provenance of these brown-looking, red-spotted trout left me mystified – the Caspian salmon must be a seatrout, but had we hung on to the original genetic strains?

On this note, we decided to call it a day and head upstream for supper. The Azeris pride themselves as great hosts and quite rightly so. We feasted on rainbow trout (farmed) and grilled lamb by a mountain stream, surrounded by mountains home to wolves, bears, wild boar and a few rare Persian leopards.

The next morning I awoke energised and took an early morning stroll around the farm to collect my thoughts. BLUE's project in Azerbaijan was designed to save five critically endangered species of sturgeon and one species of salmon from extinction and has been going well under difficult circumstances. Poaching was rife, enforcement low and habitats had been degraded under industrial pressure. We have already persuaded the authorities to ban the import of gillnets, cleaned up river mouths of



Lake Goygol,
Western Azerbaijan

'ghost nets', developed plans for alternative employment in coastal areas and persuaded the Ministry of Environment to create the first marine reserve in the Caspian Sea to provide refuge for the last remaining wild sturgeon and salmon. It was going well but how on earth could we get these fish back to their spawning grounds – it was fundamental.

Firstly, I had to see where the trout existed, even if they were isolated from the sea. We charged into the mountains to find Goygol Lake. The lake was untouched and stunning beyond words. All I could think to do was grab my fly fishing rod, wade into the water and clamber onto a solid looking rock, drenched and slightly self-conscious – no one had ever fly fished in the lake, in fact, I'm not sure that anyone had ever fly fished in Azerbaijan. I saw a few fish rise next to some bulrushes but I couldn't catch one. After a few hours on my rock, I called it a day and waded back into the forest.

The lake was beautiful, but it wasn't the spot for any self-respecting anadromous fish; I needed a river. I spoke to Afa, my colleague – a young biologist, born in Baku, educated at Oxford and employed by our partner NGO, International Dialogue for Environmental Action (IDEA). Her

speciality was leopards and bison, but she was learning fast about fish. Afa spoke to Ilham, Ilham to Emin, our trusty driver and after a few hasty calls to the Ministry, we were given permission to head up to the Nagorno-Karabakh border. Nerves were tense as we drove into the hills passing armoured trucks, military camps and a convoy of aid vehicles flying white flags.

We found a perfect spot, where Ilham had seen the fish lay in the summer months. It looked the perfect upstream trout/salmon river, with fast, shallow rapids and deep pools overhung by granite cliffs and riparian forest. I fished the pool with every lure I could think of but the fish were either not biting or not there. The river was perfect – untouched, fast running, deep pools but it lacked the crucial ingredient for big fish: uninterrupted flow to the Caspian sea.

Suddenly the sound of bullets was all around us and smoke grenades hit the ground. This was it, I thought – I'd pushed this one too far! Two trucks hurtled down the hill towards us and there was loud shouting. We had inadvertently driven into an area used by the young Azeri soldiers for target practice and were told in no uncertain terms to leave immediately. "Emin, drive for God's sake – these men have machine guns!"



Afa (IDEA) and Rory
thinking about genetics



The Demirapara River, Gabala.
Looking upstream into the
Greater Caucasus Mountains

The fishing was certainly over, so we retreated, heads down to the safety of the trout farm.

It was time to move on. Ilham was doing an admirable job rearing his precious trout, but I wanted to head towards Mingachevir dam. I knew of a few rivers that ran down from the Caucasus Mountains and joined the great Kura River below the barrier. We left early and drove across an arid plain for hours until I glimpsed the mountains that lie between Azerbaijan, Dagestan and Georgia. We were in 40 degree heat, but the mountain peaks were still showing patches of snow. We were greeted by several men driving various Ladas. One man stood out as I explained that I was here to try and find any sign of migrating fish. He was a big with a shaven head, no neck and a gun. I whispered to Afa, "Who's that man?" and she whispered back that he was Rashad, head of the government's anti-poaching unit. It made sense – I jumped into his truck and we set out upstream.

It was immediately obvious from the state of the rivers that the season was just too dry and the rivers too low to even dream of finding fish, but Rashad had another idea. The head of the anti-poaching unit called, of all people, the local poacher and together we tore off the road into a dust ball in order to go and meet this poacher and so find the best spot to catch the fish. I thought that this would be an appropriate moment to broach the particularly sensitive poaching issue. Rashad warmed up and spoke freely about the problems he faced in his role. Poachers came on land, came by boat, came over borders, came at night, some local, some foreign, some armed, some children – it was an insurmountable issue to tackle with sixty men, all part time. "Give me 500 men, 20 boats, vehicles and guns and I will solve the problem." We left it there.

We met the poacher (name unknown) and he guided us through acres of parched farmland to an oasis of poplar trees. It seemed improbable that trout were here, but he assured me that this was his favourite poaching spot. He also mentioned that it was the wrong time of year to catch these fish – something that I had feared before I left London. However, I could hear water and we snuck down into the valley to find a small waterfall and some lovely pools. I could see that this spot had potential, but on this day, in the middle of a heatwave, neither I nor the poacher were able to tempt a fish from the depths of the pools.



Fly fishing a likely looking pool on the Kurakchay river



Mingachevir dam, built in 1953



The Mingachevir dam as seen from space (or an aeroplane)



Juvenile brown trout



Fish sold as Caspian salmon on the black market



Rory setting up his fly fishing gear at Lake Goygol

As we travelled to another fish farm, my attention returned to the genetic issue. Had millions of brown trout (*Salmo trutta*) been released into the Caspian, were they breeding with Caspian salmon in the wild and, if so, were the descendants fertile? Only genetic comparisons could tell. To confuse the situation even more, the brown trout in the next farm looked completely different to those great fat red-spotted fish under Ilham's supervision. These fish were silvery-green with a few dark spots – more like a sea trout but the farm manager assured me that they were fed on a similar diet to Ilham's and that they had certainly never been to sea and back. It was time to go home – we said our goodbyes to our crew of enforcers, poachers, fish farmers and mountain guides and set out for the metropolis of Baku.

The next morning, I scrubbed off the trout scales and dust, put on a fresh shirt and went to the government's offices to debrief the Director of IDEA and the Ministry of Environment. Diagnosis of the situation was threefold:

1. Genetic: We need to identify *Salmo ciscaucasicus* – we had Tahir's picked samples and I had heard that these fish were still naturally spawning in the Terek river that flows from Georgia through Russia to the Caspian. Once we had identified the species, we could set up a special aquaculture unit to breed a genetically diverse stock.
2. Physical: We need to bring in experts from the UK and the US to get these fish around the dams. There are several ways to do this including 'fish ladders', which enable fish to

overcome barriers by swimming up a series of low steps. Once they are around the dams, we need to ensure that there are suitable gravel beds for spawning and enough water in the streams to facilitate fish movement (i.e. managing withdrawal for agriculture).

3. Human: We need to allow these fish to migrate upriver by continuing to remove the gillnets and increasing protection in certain areas. Rashad's anti-poaching unit needed support and alternative livelihoods should be developed to reduce the need for locals to take these protected fish.

We all agreed, shook hands and I promised to return in the autumn. As I flew out over the Greater Caucasus mountains, I peered out of the window and caught a glimpse of the Mingachevir dam. It was hard not to marvel at this mammoth example of Soviet engineering – this dam wasn't going anywhere, but one must never underestimate the determination of a plucky charity and an anadromous salmon to overcome large obstacles in order to reach their goals.

Blue Marine Foundation

'BLUE' exists to create marine reserves and establish new models of sustainable fishing. We rely on political influence, diplomacy and our agility as a small organisation to drive conservation gains. This has yielded results beyond our expectations. BLUE's work is now global, from massive marine reserves in the UK Overseas Territories to shellfish restoration in our local waters, conserving grouper populations in the Maldives to protecting Aeolian Islands' waters. Our sustainable fishery in Lyme Bay, hailed as a win by both conservationists and fishermen, has established a powerful blueprint. Our small, dynamic team has helped to protect 4 million km² of ocean. In today's uncertain political landscape, it is up to marine charities like BLUE to show the benefits that marine conservation can bring in terms of food security, the fortunes of small-scale fishers and our shared environment.

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