

Breaking the Cycle

Central Asia

Executive Summary

Dr. Kate Leeming OAM



Explorer and expedition cyclist, Dr Kate Leeming, will take on an epic four month, 10,000km bicycle journey through the heart of Central Asia.

Her route will follow the Syr Darya (Jaxartes River) from its source in the Tien Shan, Kyrgyzstan, to the Aral Sea, and from there, trace the course of the Amu Darya (Oxus River), concluding with a search for its mysterious, undiscovered source in the Wakhan Corridor, Afghanistan.



Introduction



Formed by the forces of nature, shaped by human interventions, the waters of the Syr Darya, Amu Darya and the Aral Sea are the lifeblood of Central Asia, an inextricable part of its many cultures.

The shrinking of the Aral Sea to roughly a tenth of its size since the 1960s is considered one of the worst man-made environmental disasters in history. It is also a warning to the rest of the world, of what might happen if we all don't take better care of it. Kate aims to not only explore the causes and impacts of this ecological catastrophe, but also find out what is being done to preserve, restore, adapt and improve threatened livelihoods.

Central Asia is the hub of the ancient Silk Route. It has been a crossroad of civilisations for millennia, where distinctive cultures have connected, mutually influencing each other. For the six nations that share the water resources of the Aral Sea Basin, managing and solving the water issues requires the same enduring legacy of the historic Silk Roads; cultural understanding, open dialogue, innovation and collaboration.

Travelling by bicycle will give Kate an intimate, grounded perspective of how the region fits together; the landscape and the local people - their history, cultures, the issues they face and their hopes for the future.



The Syr Darya meanders through the Kyzylkum Desert

Dr. Kate Leeming OAM

Cycled almost 2.5x the Earth's circumference (100,000km), on all seven continents

Major expeditions

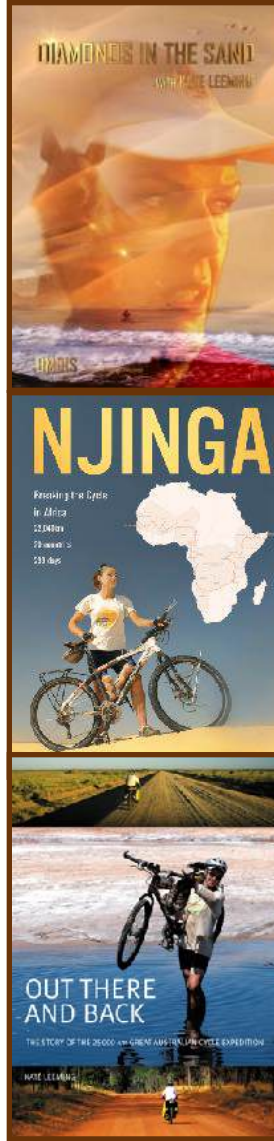
- The Trans-Siberian Cycle Expedition - 13,400km, St Petersburg to Vladivostok
- The Great Australian Cycle Expedition - 25,000km; 7000km off-road
- Breaking the Cycle in Africa - 22,040km, Senegal to Somalia
- Breaking the Cycle Skeleton Coast - 1621km, sand cycling Namibia's entire coastline
- Breaking the Cycle Across Australia - 8617km, Cape Byron to Steep Point

Films and books

- *Diamonds in the Sand* - Global TV series, feature doc. (Namibia, 2021, 25M+ viewers)
- *The Lights of Ladakh* - documentary (India, 2021, streaming on Adventure Plus)
- *Njinga* - book, award-winning feature documentary (Africa, 2014)
- *Out There and Back* - book (Australia, 2007)

Awards and achievements

- Medal of the Order of Australia (OAM, 2023)
- *Spirit of Adventure Award* Australian Geographic (2023)
- Honorary Doctor of Education degree (The University of Western Australia, 2016)
- Fellow of the Royal Geographic Society (UK)
- Member of The Explorers Club (New York)
- Honorary Advisor for The Duke of Edinburgh's International Award (Australia)
- Scout Ambassador (Scouts Victoria)



The Journey



Dates: 22nd March (World Water Day) - 10th August 2025 (4.5 months)

Distance: 10,500km

Roads: Everything from sandy 4WD tracks, rugged mountain passes and river crossings, to good gravel and asphalt.

Timing: The journey has to be timed to fit in with the seasons. The high mountain passes are usually closed until late June and the deserts regularly exceed 45C in summer. Therefore, to fit the whole route in, Kate will begin from the Fergana Valley in March at the start of the Syr Darya and return to complete the Naryn River section after the Pamir section and before the Wakhan Corridor.

*The proposed route below may be adapted

map: [CLICK HERE](#)





Naryn River
Kyrgyzstan

Storyline



Part 1

Naryn River

(1100km)

In the UN International Year of Glacier Preservation, high in the Tien Shan mountains, Kate begins her epic journey from the glacial-fed source of the Naryn River, the primary tributary of the Syr Darya. It is a pristine environment where the main concern of local livestock herders is the rapidly warming climate. The glaciers are receding at an unprecedented rate and there is significantly less snowfall affecting the pastures on which their yaks and horses graze. In this region, often referred to as Central Asia's "water tower", temperatures have risen at twice the global average since the 1950s.

From over the handlebars, this is a physically demanding section of Kate's journey; high altitudes and rugged tracks. The river rapidly gains momentum as it descends steeply through spectacular gorges.

Where possible, Kate will speak to residents along the river about their relationship with the Naryn. She plans to stop at places such as Kara-Say, Naryn, Ming Kush (a decommissioned Soviet uranium mine), Saimaluu Tash (petroglyphs), Toktogol Reservoir (hydropower) and Kyzyl-Beyit (a village isolated by the damming of the Naryn).

This section ends in the Fergana Valley at the confluence of the Naryn and Kara Darya rivers - the start of the Syr Darya.



Cotton harvest
Fergana Valley
Uzbekistan

Part 2

Fergana Valley

(372km)

Surrounded by high mountains, the Fergana Valley is an extremely fertile, densely populated enclave divided between Uzbekistan, Kyrgyzstan and Tajikistan.

For over 3000 years, Silk Road travellers from east and west have converged in the Fergana Valley to trade locally made goods and access its rich array of natural resources. Today, as throughout its history, the 300km x 140km region is home to a diverse blend of ethnic groups.

It is the great rivers - the Naryn and the Kara Darya, which converge to form the Syr Darya in the Fergana Valley - that are responsible for the region's fertility. The rich soil is due to silt that has washed down from the mountains over time, and the abundant water sources used for irrigation.

In Soviet times, the production of thirsty crops such as cotton, rice and fruits was ramped up adding unsustainable pressure on water resources. With the break up of the Soviet Union, national boundaries were drawn along ethnic lines, but these borders were particularly

difficult to define in the Fergana Valley. As a result, conflicts over who owns and manages the resources bubble up at times. The discovery of oil has added fuel to the fire.

Beginning at the start of the Syr Darya, Kate follows the river closely, stopping to explore the ruins of Axsikent, a fortress built in the 3rd century BCE, and then heads south across the valley through intensely irrigated cotton fields. She looks for evidence of the infamous Mungbulak Oil Spill, the worst ever oil spill on land, that occurred in 1992. Kate pauses to learn from traditional artisans about silk production, ceramics and wood carving and visits the historic cities of Kokland and Khujand (founded by Alexander the Great almost 2500 years ago).

Part 3

Syr Darya (Jaxartes River)

(1677km)

Kate diverts northwest to Uzbekistan's historic capital, Tashkent before returning to the Syr Darya. In this region Alexander the Great used the Jaxartes River, the northeastern boundary of his empire, as a shield to defeat the Scythian nomads in the Battle of Jaxartes in 329BCE. It is considered his most famous victory.

In keeping with the theme of water conflict and (mis)management, Kate ventures slightly south to see Sardoba dam, which collapsed in 2020. Large swathes of farmland were inundated, and lives lost in this part of Uzbekistan and across the Kazakhstan border. It sparked more debate around water conflicts and the need for cooperation between Central Asian countries.

Kate continues to Lake Aydar, formed accidentally in the 1960s when the Syr Darya River, swollen by heavy rains, broke its dam walls. The waters flooded the arid plains and gave birth to the accidental lake, which has since become a vital ecosystem in the desert.

Kate crosses into Kazakhstan at Shardara and follows the river as it meanders through the Kyzylkum Desert bringing life to adjacent communities. About 300km further along the river, she diverts to Turkistan, an important Muslim city, stopping to investigate the ruins of the ancient Silk Road cities of



Otrar and Sauran that all depended on the Syr Darya's water supply. Over the last 800km of the Syr Darya, Kate passes through the cities of Kyzylorda and then Baikoner. There she hopes to access permits to visit the cosmodrome where Yuri Gagarin famously became the first person to be launched into space in 1961.

About 200km from the mouth of the Syr Darya, Kate reaches the river delta and opts to follow the winding course as closely as possible, taking adjacent 4WD tracks, passing through small villages and ghost towns. Here, the river's flow is being carefully managed to ensure that all water not taken up by human consumption over its 2500km course, flows steadily into the North Aral Sea.

Near the river mouth is Kok-Aral Dam and levy banks, co-funded by the World Bank and Kazakhstan government in 2005, to hold the Syr Darya's water and save the North (Small) Aral Sea. The result continues to be transformational. The water level of the sea rose by several metres in the first few months and continues to rise, reducing water salinity and reviving the fishing industry and with it, livelihoods. Some locals are returning to the villages they had previously abandoned due to lack of economic opportunity.

Kate hopes to gain an in-depth appreciation of the restorative programmes in the region; the greening of parts of the Aralkum Desert - the dried sea bed of the South Aral Sea - to curb the release of saline and toxic dust into the atmosphere, and create a micro-climate that helps to reduce evaporation.

Part 4

Aral Sea

(1136km)

From the town of Aralsk, Kate continues on 4WD tracks around the west side of Aral Sea North, exploring the fishing villages; some abandoned, some reviving with the improved economic opportunities. Off the southern shore of Aral Sea North is Barsakelmes Nature Reserve. Once an



A fisherman wades along a marshy shore, Aral Sea North. From 1980s until about 2012, this was a dusty edge of the desert. Now the water is rising due to the Kok-Aral Dam

island, in Soviet times it became a sanctuary for threatened species. As the sea dried up, the island, locally known as “the land of no return,” transformed into a desert. While some species have been relocated, remaining wildlife such as the kulan (Trans-Caspian wild ass) and saiga antelope have adapted. It is also a UNESCO Biosphere Reserve.

In Kazakh language Aral Sea translates to “Sea of Islands” as it contained more than 1000 islands of at least one hectare in size. Farther south, another former island was used for far more sinister purposes by the Soviets, as the centre of its bioweapons programme. During the Cold War, Vozrozhdeniya (“Rebirth”) Island was a top-secret testing ground for deadly Soviet super-pathogens, such as anthrax, bubonic plague and smallpox. Unfortunately, the sea that effectively formed a moat around what was known as Aralsk-7 is no longer. This makes the decaying village of Kantubek, testing laboratories and buried caches of toxic and dangerous disease antigens a very hazardous place. Although now decommissioned, a visit here would have to be guided with all the necessary precautions.

Kate follows dusty tracks along the west coast of the larger Aral Sea South and into Karakalpakstan, an autonomous republic within Uzbekistan...a “stan within a stan.” The edge of the Ustyurt Plateau (once the bed of the Tethys Sea) doubles as the western shoreline of the Aral Sea. Kate comes across crumbling fortresses that served the ancient caravans of the Silk Route, such as Kurgancha Kala and Urga beside the partially restored wetland, Sudochie Lake.

Kate crosses the dry sea bed to reach the once bustling port at Muynak. A fleet of rusty ships sits at the bottom of the erstwhile harbour. Where a few decades ago, water lapped the shoreline at Muynak, now the water has receded over 100km. In 1959, the port town produced 21.5 million cans of fish: bream, barbel, pike perch.



Part 5

Karakalpakstan & the Amu Darya Delta

(722km)

Of Central Asia's two great rivers, the Syr Darya is slightly longer but historically, the Amu Darya (Oxus River) has a significantly greater volume. However, the demands on it as a water resource are so great that it now fizzles out before it reaches its natural terminus, the Aral Sea. Kok-Su reservoir (near Porlatau village) was built in the 1980s to manage the river's diminishing water flow. Now, a sluice regulates a trickle of water: the last drops of the Amu Darya. Kate will attempt to follow the dry river bed as far as she can over what is now the desiccated seabed, possibly 80km, to then begin her journey up the Amu Darya from its mouth to its sources in Wakhan.

The ancient fortresses of Khorezm that dot the desert landscape of the Oxus delta are evidence of millennia of civilisation and of times when this region was a fertile oasis. The history of irrigation here dates back at least 3000 years. However, the Soviets built 16,000km of canals in this region alone. Aware of the damage they were doing to the Aral Sea Basin, Stalin's 'Great Plan for the Transformation of Nature' was the zenith of the larger Soviet scheme to impose a cotton monoculture on the Aral Sea Basin.

Now, by contrast, the Amu Darya's delta is basically ground zero for ecological devastation caused by Soviet and post-Soviet (mis)management in the 20th and 21st centuries. The FAO estimates 95 percent of the land in Karakalpakstan is now saline. Dust storms carry soil from the desiccated seabed that contains sulphates, phosphates and other toxic substances found in fertilisers and pesticides as far as the Tien Shan. Soaring rates of cancer, liver ailments, and other diseases have been recorded in Karakalpakstan since the 1980s. The rate of infant mortality was 60/1000 live births in the late 1980s.

Kate aims to focus on this region, the issues facing it, and what is being done to improve people's livelihoods, health and the environment in which they live. She hopes to table the thoughts of local farmers, students, scientists and non-government organisations. Uzbekistan's current leader, President Mirziyoyev, champions the idea of transforming the Aral Sea region into a zone of ecological innovations and technologies and Kate is keen to find out what is being done in this space.





A USSR postage stamp from 1951 celebrating the beginning of construction of Stalin's Main Turkmen Canal

Part 6

Uzboy River

(985km)

The Amu Darya hasn't always drained into the Aral Sea. For long periods in history, most "recently" from 7th Century BCE to 5th Century CE and from 12th to 17th Centuries, the Oxus, or at least a branch of it, flowed into the Caspian Sea. Water flowed from the Oxus delta via Sarykamysh Lake which in turn drained into the Uzboy River, that 750km later entered the Caspian Sea. The Uzboy, when flowing, supported an agricultural riverine civilisation and served as a route for trade and cultural exchange as a part of the Silk Roads network. When the Oxus suddenly changed course, the Uzboy abruptly ceased to flow and the civilisations that depended on it dissipated. Today, the Uzboy is largely a dry riverbed meandering through the Karakum Desert with a few oxbow lakes, some saline, some fresh water, and crumbling remnants of past civilisations.

In 1717, Peter the Great sent an expedition to explore the realms of the Uzboy to determine whether they could open its channels for shipping, thus linking Imperial Russia to Central Asia via the Volga River, the Caspian Sea and the Uzboy.

In the early 1950s, the Soviets started work on building the Main Turkmen Canal, designed to drain 25 percent of the flow of the Amu Darya, lower the level of the Aral Sea to free up more land for cotton production and connect the Amu Darya Delta to the Caspian Sea. The canal was to be constructed in the dry bed of the Uzboy River. The aim was to use the canal for irrigation of the Karakum Desert, opening it up for agriculture and, as Peter the Great dreamed, connect the Kremlin with the Caspian

Sea via the Volga River and the Main Turkmen Canal into Central Asia. Construction was abandoned with the death of Stalin in 1953.

Over the last two decades, the dry course of the Uzboy has again featured in an ambitious plan to bring prosperity to the Karakum Desert. The project, initiated in 2009, is to channel water across hundreds of kilometres of desert to create a vast inland sea. The Golden Age Lake is to be filled with drainage water from the country's cotton fields, transported through a network of canals, including a part of the Uzboy, to fill the vast Karashor Depression. So far, the project has cost billions of dollars for limited success due to the high evaporation rates, the leaky canals filling with sand, and the water collected contains pesticides and fertilisers from the cotton fields...

Kate hopes to gain permission to follow the course of the ancient Uzboy from the Amu Darya Delta to the Caspian Sea, the adventure adding 950km to her journey.

Part 7

Amu Darya & Karakum Canal

(1095km)

Heading upstream from the Amu Darya delta (Khorezm), the river is a linear oasis dividing the Kyzylkum and Karakum deserts, Turkmenistan and Uzbekistan. The Silk Route followed the river and Kate's ride is punctuated by the ruins of caravanserais, ancient roadhouses that provided rest stops and helped to protect travellers. Kate follows the edge of the thin green strip through the desert, taking a break after 400km at Turkmenabat - historically known as Amul. This is believed to be where the name Amu Darya comes from.

After a further 250km, Kate reaches the point on the Amu Darya where 45 percent of the river's water is drawn for the Karakum Canal. Construction of the Karakum Canal began in 1954, a year after Stalin's death, when the the Great Turkmen Canal project was abandoned, and was completed in 1988. One of the world's largest canals, the Karakum Canal traverses almost the entire country of Turkmenistan, 1375km from east to west across the desert, providing water for its cities and towns and, of course, for irrigation, mainly cotton. The Karakum Canal is not very efficient, with about a quarter of the water entering it leaking into the ground, and there are issues with silt from the fast flowing Amu Darya



Great Kiz-Kala Fortress
Merv

collecting in its channels. The withdrawal of almost half of the Amu Darya's water has had dire consequences downstream and is a key contributor to the desiccation of the Aral Sea.

Kate follows the first 400km section of the canal (constructed in 1959) via small tracks from village to village to the regional capital of Mary. Set in the fertile delta of the Murghab River, known as the Margiana Oasis, Mary was developed by the Soviets as a centre for the cotton and natural gas industries. However, the first agricultural settlements in the Murgab River delta appeared in the 7th millennium BCE and were contemporary to the Mesopotamian and Indus Valley civilisations.

About 40km from Mary's city centre are the ruins of the ancient city of Merv that existed between the 3rd millennium BCE and the 18th century CE). At its peak in the 12th century CE, Merv was one of the largest and most cosmopolitan cities in the world with a population of over half a million. Kate explores the ancient city, an important Silk Road centre, before venturing to the more recently discovered Gonur Depe archeological site, 60km north of Merv. Long before Merv raised its first tower, Bronze Age settlements dotted the Margiana Oasis. Gonur Depe, the largest of these settlements, dates back to 3000BCE. Gonur was the birthplace of the first monotheistic religion, Zoroastrianism. The adjacent sites have revealed four fire temples, as well as evidence of a cult based around a drug potion prepared from poppy, hemp and ephedra plants. It is believed the city was slowly abandoned during the Bronze Age as the Murgab River changed course, depriving the city of water.

Crossing the east Karakum Desert on the way back to Turkmenabat, Kate stops at Repetek Nature Reserve, a part of UNESCO's Man and the Biosphere Programme. It is one of the hottest places in Central Asia.



Part 8

Zarafshan-Karakum Corridor (Merv - Bukhara - Samarkand)

(1280km)

Arising in the mountains of Tajikistan, the Zarafshan River gushes down to the steppe, and passes through the legendary city of Samarkand where much of its water is taken up by the Dargom Canal. Samarkand, Bukhara and all towns along its route are totally reliant on the Zarafshan's water. Once a key tributary of the Amu Darya, the river whose name translates to "the spreader of gold" no longer makes it. The last drops disappear into desert sand just before Turkmenabat.

Within the vast network of trails that make up the Silk Roads, the Zarafshan-Karakum Corridor is perhaps the most important hub. Routes from every direction converged here, leading to the establishment of some of history's grandest cities.

Stretching across a distance of almost 900 kilometres, the Zarafshan-Karakum Corridor was a melting pot of ethnicities, where people from across the world brought their own cultural influences, and where powerful empires left their mark. For almost two millennia, from the 2nd century BCE to the 16th century CE, the corridor evolved, not only as a trading route, but also one of the most important places in the world for the exchange of artistic and scientific ideas.

Starting from the Merv Oasis, Kate aims to cycle along the corridor, firstly tracing the ancient caravan roads across the Karakum Desert to Turkmenabat (Amul). Once back in Uzbekistan, she will pick up the fertile Zarafshan valley and follow it through Bukhara to Samarkand. Time permitting, Kate hopes to finish this route by diverting into the mountains. Khisorak Fortress, 275km from Samarkand, acts as a bookend to the 34 sites that make up UNESCO's 2023 World Heritage inscription.



Millennia before the development of the Silk Route, the Zeravshan Valley, a part of the Inner Asian Mountain Corridor, served as a refuge for early human populations. The region was a major migration route during the Palaeolithic period, up to 150,000 years ago, when early human, Denisovan and Neanderthal populations were likely to have interacted. Kate hopes to visit the Soii Havzak archeological site near Panjakent in the Zerafshan region to learn more about our human ancestors.

From Samarkand, Kate heads south across the foothills of the Pamirs and through what once would have been the Bactrian Empire to the banks of the Amu Darya that now forms the Uzbekistan-Afghanistan border.

Part 9

Panj River

(873km)

Back at the Amu Darya, Kate investigates the ruins of the ancient city of Kampyrtepa, identified by scientists as the legendary Alexandria on the Oxus (Alexandria Oxiana), built by Alexander the Great in the 4th Century BCE. The fortress presides over the mighty Oxus while a lower settlement would have been the port at a strategic crossing point on the river.

Termez, 30km to the east, is another archeologically rich city that dates back to Alexander the Great, with stories relating to Greek legionnaires, Arab and Mongol invaders, cosmopolitan traders, travelling people of wisdom and of course the Silk Road. The Afghanistan-Uzbekistan Friendship Bridge near the



town, was ironically the main entry point for Soviet troops who poured into Afghanistan in 1979, and the exit point for the remnants who limped home a decade later.

Just after crossing the Uzbekistan-Tajikistan border, on the Afghanistan side of the Amu Darya, is the point at which water will be drawn from the river for the Qosh-Tepa Canal. Afghanistan contributes about 12 percent of the Amu Darya's flow but is currently excluded from the Almaty Agreement, signed by Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan in 1992, to regulate the allocation of water between the countries. The canal is intended to turn 550,000 hectares of barren land into much-needed farmland for growing wheat and vegetable oil, and it will provide jobs for 250,000 Afghans. But the implications for the Amu Darya and Aral Sea environments, and all who live downstream of this point are a major concern; the river's flow could be reduced by half.

As Kate continues to follow the river as it winds in a northeasterly direction, there are many points of interest; temples, forts and natural wonders. Tigrovaya Balka Nature Reserve, beside the Vaksh River, was one of the last strongholds of the Caspian tiger, whose tracks were seen in the reserve for the last time in 1953. The confluence of the Vaksh and the Panj rivers, is the start of the Amu Darya.

East of the Vaksh, Kate is now following the Panj River, gradually ascending into the Pamir Mountains. Water cascades through the gorges with immense power. Scenically this land is wild and spectacular. Discovered in 2012, Kala-i Kukhna, or Castle Karon, the fortress "located at a height," is set high above the raging Panj and the village of Rivat. Considered the Macchu Pichu of Tajikistan, the 4000 year old fortress is rare in the mountains of the Silk Roads.

This section finishes in the town of Rushan, at the junction of the Panj and Bartang rivers. Before the Soviet annexing of Tajikistan in 1932, it was known as Kalai-Vamar, its fort built at the confluence of the two rivers by local people in defence of Chinese advancements in the Pamirs.



Lake Sarez

Part 10

Bartang, Murghab & Aksu Rivers

(587km)

There has been conjecture about the true source of the Amu Darya/Oxus River for at least the last two centuries. Kate plans to follow each of the four tributaries of the upper Panj River (which becomes the Amu Darya) in her effort to follow the river from its mouth to its source(s). Firstly, starting from Rushan, Kate will follow the longest tributary, along the Bartang, Murghab and Aksu rivers.

A journey through the Bartang Valley is a remote and challenging route for bike-packers to access the high Pamirs. Bartang means “narrow passage” and Kate will gain almost 2000m over 300km following a rocky track with many river crossings on the way to Karakul Lake.

Before the construction of the track, getting into the depths of the valley would have required ladders, platforms and tenuous paths cut into the land itself. The path of the river often shifts from year to year, eroding its surroundings, and necessitating an ongoing cycle of construction and reconstruction. In 1911, a powerful earthquake caused a landslide that blocked the Bartang/Murghab rivers burying villages and forming a natural dam, the Usoi Dam and what became Sarez Lake. Kate diverts to see the 75km long lake and possibly take a kayak out onto its crystal clear waters that mirror the mountains and glaciers towering 2000m above.

Kate reaches the Pamir Highway near Karakul Lake and climbs the 4655m Ak Baital Pass before descending to Murghab and following the river of the same name along the Tashkurgan Road. The road follows the Aksu River almost to the Afghanistan-Tajikistan border, 5km from the Aksu's source, Lake Chaqmaqin in the Wakhan Corridor. Kate intends to access the lake, a source of the Amu Darya, from the Afghanistan side.



Part 11

Zorkul Lake & Pamir River

(503km)

About 100km west from where the Aksu River enters Afghanistan is Lake Zorkul, another of the sources of the Amu Darya/Oxus River. The 33km long lake lies at an altitude of 4125m and takes its water from glaciers. The Pamir River flows out of Zorkul and into the Panj River.

The lake is on the path of the Silk Road, referred to as "Great Dragon Pool" in Chinese historical records. Although it is probable that Marco Polo travelled past the lake, the first European confirmed to have visited it was the British naval officer John Wood in 1838. Naming the lake after his queen, Victoria, Wood claimed he had discovered the source of the Oxus River. This region subsequently became famous for its part in the Great Game between the British and Russian empires. In 1895, the first pillar was established at the eastern end of the lake to define the border between Afghanistan and the Russian Empire. The pillars and the border are still the same today.

To preserve the unique nature of the east Pamir, Lake Zorkul and its surrounding territory was made a nature reserve in 2000. The Zorkul Nature Reserve is on the UNESCO World Heritage tentative list.

Kate hopes it is possible to follow the rough 4WD tracks across the unspoiled lunar landscape of the high mountains and wide plateau to Lake Zorkul. The Eastern Pamirs have been populated by nomadic ethnic Kyrgyz since the 17th century. (If not possible to take this route, the team will have to return to Murghab and then Kate will pedal the Pamir Highway before diverting east to Lake Zorkul, adding about 80km to the route.)



From Lake Zorkul, Kate follows the Pamir River along the Tajikistan-Afghanistan border to Landar, known for its petroglyphs, at the confluence of the Pamir and Wakhan rivers; the start of the Panj River. She continues to follow the Panj, along Tajikistan's Wakhan Valley. The river is a part of the Silk Route and the ruins of forts built high above the valley were built to protect residents and passing travellers and control the flow of people and goods across the Wakhan Valley.

Kate visits Vrang, Yamchun Fortress, Khakha Fortress, Ishkashim, Khorog and other towns and ruins on the way back to Rushan.

Part 12

Wakhan Corridor, Afghanistan

The source of the Oxus River

(435km or 885km including Badakhsham section)

The final phase of the expedition is to cycle along the Wakhan Corridor and the Afghan Pamir in search of the source of the mighty Oxus River/Amu Darya.

Created at the conclusion of the "Great Game", the Wakhan Corridor served as a buffer between the territories of the British and Russian empires; the source of the Oxus was to mark the border but it was never found. Afghanistan's part of the Wakhan is now called the Wakhan Corridor, as opposed to Tajikistan's Wakhan Valley. Three mountain ranges - the Hindu Kush, Karakoram and Pamir - converge in Wakhan to form what is called the Pamir Knot.



A Kyrgyz game of Buzkashi
(Dead Goat Polo)
Wakhan Corridor

The only border crossing between Tajikistan and Afghanistan currently open is Shir Khan Bandar near the confluence of the Vakhsh and Panj rivers. Kate will be driven back to this point where she will be met by her new team from Ishkashim, Wakhan. It is a 450km journey across Badakhsham Province to reach Ishkashim and the start of the Wakhan Corridor.

As Kate follows the Panj and Wakhan rivers to Lake Chaqmaqin and the Wakhjir River to its glacial-fed source, she is also tracing the footsteps of intrepid explorers and traders who travelled along this principal route of the Silk Road. Hsuan Tsang, the 7th century Chinese monk who went in search of Buddhist teachings; Marco Polo (unconfirmed), who in the 13th century journeyed overland to China; Mirza Muhammad Haidar, who chronicled the Moghul Empire in the 16th century; Lt John Wood and Lord Curzon, who searched for the source of the Oxus River in the 19th century and Sir Aurel Stein (20th Century) are a few of the most famous explorers.

The Wakhan District is Afghanistan's panhandle, a narrow strip of land separating Tajikistan and Pakistan that juts eastward some 350km to meet the Chinese border. The district has two distinct parts; the Wakhan Corridor and the Afghan Pamir. All of Wakhan lies at elevations higher than 2000m and the Afghan Pamir lies above 3500m.

Wakhan is home to hardy mountain people - Wakhi farmers and herders and the last remaining Kyrgyz nomads, whose yurts dot the fertile grasslands of the Afghan Pamir. In 1916, Kyrgyz shepherds fled chaos and conscription as Central Asia rose up against Russian colonialism. With no roads at all east of Sarhad, the Wakhi and the Kyrgyz were cut off from the outside world, seemingly unaware of the recent conflicts. In 2023, the Taliban government finished a gravel road through the corridor to the Chinese border. There are plans to open the border with China at Wakhjir pass for economic purposes.



**Bozai Gumbaz, an ancient mausoleum
Little Pamirs
Wakhan Corridor**

The true source of the Oxus River has been a matter of conjecture for at least 200 years; since the Great Game. Lt Wood first asserted that it was Lake Zorkul (Lake Victoria) in 1858. Lord Curzon in 1893 discovered a glacial ice cave at the head of the Wakhjir River and claimed it was the source. The longest tributary of the Oxus, the Bartang/Murghab/Aksu rivers flow out of Chaqmaqin Lake. In 2007, Bill Colegrave led an expedition in search of the true source of the Oxus and concluded that it was the Chelab, a small stream flowing down from the Nicholas Range (Named after Tzar Nicholas II during the Great Game). The stream bifurcates after about 12km; the west-flowing branch enters the Little Pamir River (which 15km later joins the Wakhjir to become the Wakhan River), the east-flowing rivulet ends up in Lake Chaqmaqin. This means water from the Chelab can flow into either of the two main tributaries of the Oxus/Amu Darya. Therefore, the source of the Chelab should be considered the true source of the mighty Oxus River.

But no one has ever identified and recorded the actual Chelab source. Bill Colegrave will join Kate for the final section of the journey (in the support vehicle). They visit Chaqmaqin Lake and then the ice cave. They compare the measurements taken by Curzon in 1893 and by Colegrave 114 years later, to see whether the cave has changed - the region is undergoing significantly faster glacial melting due to the changing climate.

The finale to the expedition will be to follow the Chelab stream on foot from the point where it bifurcates, into the Nicholas Range, to locate the source of the Oxus and at last solve the age-old conundrum of one of the world's most historically important rivers.



The ice cave at the head of the Wakhjir River in 2004



Outcomes

- A 4x60 minute TV series with many story angles; a personal perspective, geographic, environmental, cultural, historic, agricultural ... an adventure
- Education programme
- Raising funds for water.org to help bring clean water and sanitation to the world.
- Social media campaign - coordinated by Overland Europe, Water.org
- Web page and blogs during and after the expedition (also published in Overland Europe)
- Magazine articles
- Presentations
- A book



@overlandeuropa



Series production



A-OK Media House



A UK production company specialising in factual television will be producing the documentary series. A-OK's critically acclaimed TV series have been watched by millions and aired at prime time by leading international broadcasters. www.aokmediahouse.com



DIAMONDS IN THE SAND

PRESENTED BY: **OMDIS** BUILDING FUTURES IN ORANJEMUND

Case Study



This team has a proven track record having produced and distributed a global 4-part TV series (2021):

Diamonds in the Sand

<https://vimeo.com/462048683>

PRODUCER: AOK Media House

DISTRIBUTOR: Boulder Creek International

IN PARTNERSHIP WITH: OMDIS (Namibian Tourism organisation)

BROADCAST: Primetime

OUTSIDE TV (US): 4.5million

NATIONAL GEOGRAPHIC ASIA: 20million

CNBC: 385 million households

OTHER NETWORKS (so far): Globosat Brazil, Sky Sports NZ, TV Catalunya, A Bola Portugal, PX TV, CBC Canada, Action 24, Spiegel Germany, BNT Bulgaria, RTI Mediaset Italy, Sport 1 Germany

PRESS: National, Cycling and Outdoors press (UK and US)

STREAMING - Across YouTube channels worldwide in 2025 through distributors including Little Dot, Quintos, Night Train Digital and Eccho Rights...





After speaking to the students at Khalsi School, Ladakh

Breaking the Cycle

Education



Kate has partnered with Canadian-based organisation, **Exploring by the Seat of Your Pants** whose mission is to inspire the next generation of scientists, explorers, and conservationists by bringing scientific exploration and interactive resources into the classroom. Since 2015 EBTSOYP has hosted 4,500+ live lessons, connecting over 1.5M students to scientists, explorers and conservationists (including Kate) from 113 countries.

Before, during and after the expedition, EBTSOYP will facilitate Kate's live classes and record these along with regular "Weekly Dives". The recorded content will be linked to resources presented in a Story Map. Kate's regular blogs and an interactive map will complement the learning material and activities.

These educational resources will also be leveraged by the Royal Geographical Society (UK) for British schools and for mentoring The Duke of Edinburgh's International Award Australia participants.

More than half of the Sustainable Development Goals will be addressed during the expedition, in particular: 1, 3, 4, 6, 8, 11, 12, 13, 15, 17.



EXPLORING BY THE SEAT OF YOUR PANTS

Proud to support

THE DUKE OF EDINBURGH'S INTERNATIONAL AWARD AUSTRALIA



THE GLOBAL GOALS



The pristine Jisev Valley
Bartang Region
Tajikistan

Supporting the environment



Kate has partnered with **Carbon Positive Australia** to offset the carbon cost of the expedition. CPA supports tree planting and ecosystem restoration. Its projects are about more than just carbon offsets though—their work supports biodiversity (in one of the world's biodiversity hotspots), meaningful restoration, community tree planting and providing education tools to help everyone understand their climate impact.

Kate is an ambassador for non-profit organisation **2DegreesC** and will collect research-grade scientific data during her journey.



This part of the project is still developing.



Australian Financial Review feature

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