



ENDANGERED *hope*

In remote Northern Sumatra, a unique bond between fishers and scientists is quietly reshaping shark and ray conservation, highlighting the need for collaboration.

Words and photographs by Francesca Page

Sunrise casts a warm glow, blanketing the local fishing harbour. A heavy scent of clove cigarettes lingers in the air. Navigating from one vibrantly painted fishing boat to another, I finally receive a thumbs-up and an 'okay' from Ilham, a local shark researcher and my guide for the week. Barefoot on the salt-worn wooden planks, I stand, rocking gently on a fishing boat that promises to reveal both the horrors and hopes for critically endangered sharks and rays.

In the remote coastal region of Northern Sumatra, I begin my journey to uncover a unique bond between fishers and scientists working together for a healthier ocean. The initiative, 'Kebersamaan Untuk Lautan' (KUL), which means 'Togetherness for the Ocean' in Indonesian, is quietly reshaping shark conservation, offering a glimmer of hope against extinction. Indonesia, the world's largest shark fishing nation, faces a pressing conservation challenge. Critically Endangered sharks and rays such as scalloped hammerheads and wedgefish are frequently caught as valuable bycatch, pushing them to the brink of extinction. KUL addresses this issue by compensating fishers to release these endangered species, providing a beacon of hope for marine life and a lifeline for coastal communities. KUL's vision is clear: to save sharks, you must also help humans.

In the bustling backstreets of Canggu, Bali, I chat with Hollie Booth, a British conservation scientist and founder of KUL. She emphasises the importance of understanding fishers' perspectives: "We need innovative approaches to solve these issues." By working closely with local fishers, KUL promotes effective conservation while improving human well-being. It's one of the first incentive-based marine conservation projects in the world, and the first to use a randomised control trial to evaluate its impacts. They collect data on catches of Endangered species and fishers' well-being from participating and non-participating boats and compare the two groups to evaluate outcomes. Early data indicates that KUL's compensate-to-release programme incentivises conservation actions whilst supporting fisher wellbeing. Additionally, fishers report positive perceptions of the programme even when they are not participating. As these trials continue, the data collected will shape the future of the project and influence other shark conservation initiatives.

In a remote village in Aceh Jaya, laughter echoes throughout the weathered wooden fishing hut as I sit down for a strong Acehnese coffee with local fishers. Armed with Google Translate and scribbles in my notebook, I talk with Hasbi, a local KUL fisher and the Panglima Laot (Commander of the Sea - a customary leader of fishers in Aceh). He emphasises that safeguarding the local environment is ingrained in their ancestral legacy. "If we take care of the Ocean, the Ocean will take care of us," he says, viewing KUL as essential for the survival of both sharks and their community.

Hollie explains that while sharks and rays are not the primary target for the fishers, they "hang out where the other fish hang out", which means they often become entangled in fishers' nets and lines. Then, because they have market value, the sharks and rays are kept to be eaten or sold, forming an important part of small-scale fishers' livelihoods. For KUL's programme to succeed, correct compensation is crucial; too little fails to incentivise releases, while too much may encourage targeting. Research indicates that compensating fishers at around \$1 per hammerhead and \$5-7 per wedgefish hits the 'sweet spot'. In consumer markets in China and Hong Kong, large wedgefish fins can fetch hundreds of dollars, since they are considered high quality 'king of shark fin' containing large amounts of tissue that can be used to make shark fin soup. Here in Aceh, juveniles are primarily caught, which have small fins with lower value. The remaining meat often appears in fish curries at roadside 'Waroeng' restaurants.

| PREVIOUS: One of the main fishing harbours for the KUL project.

| RIGHT: A critically endangered smoothnose wedgefish caught in fishing gear. As the shark was still alive, it was tagged and released shortly after.



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A CRITICALLY ENDANGERED SMOOTHNOSE WEDGEFISH SLOWLY EMERGES FROM THE DEPTHS. I DIVE DOWN, PUSH THE TRIGGER, AND CAPTURE A MOMENT THAT SPEAKS VOLUMES IN THE FIGHT AGAINST EXTINCTION.



Fishers pull up traps, resembling oversized lobster pots. This new form of sustainable fishing, introduced by KUL, reduces bycatch of sharks and rays.

This valuable bycatch supplements fishers' modest earnings. Ilham further explains that capture and retention of sharks and rays in Aceh is driven by demand for fins, skin, and oil, all of which are exported. With this, consumption of shark meat is rising, often without consumers' knowledge. Ilham highlights that the popular Ikan Bakso, fish meatballs, is frequently made with shark meat instead of the traditional snapper, with consumers unaware of the substitution. Eliminating the demand for fins, he says, will dramatically reduce consumption of meat. Fishers in the KUL programme and their families benefit significantly from participating. Darwis explains: "The programme helps us to maintain ocean sustainability because [the sharks] are starting to become scarce, and fishers benefit because the compensation price is fair and helps to cover our daily household needs." Sulastri, a fisher's wife, explains how the compensation helps fund their children's education, adding: "Our income has been stable since joining the programme." Another fisher's wife, Wahyuni, excitedly shares: "We can use the money to save for the future," highlighting KUL's contribution to families' financial security.

The boat's engine hums as we venture into the Indian Ocean, greeted by our first gill net of the day. These expansive nets, extending 300 metres and positioned at depths of 30-40 metres, are like silent predators awaiting their prey. What unfolded next had a lasting impact on



| MAIN IMAGE: Fishers hold the skin of a tiger shark, which will be turned into shark leather.
 | LEFT - TOP TO BOTTOM: Fishers pull in hundreds of metres of gill nets. | A smoothnose wedgefish in a local fishing market. | A shark processing station. | A chest of shark fins.



me. Plunging into the blue waters, I soon encountered a rare sight. A Critically Endangered smoothnose wedgefish slowly emerges from the depths. I dive down, push the trigger, and capture a moment that speaks volumes in the fight against extinction. On the surface, Sajali, a local fisher, gently frees the wedgefish from the sharp nets. Shielding its eyes with a cloth, he tags its dorsal fin, marking a pivotal contribution to research efforts. Cheers erupt among the crew as Sajali lowers the wriggling and splashing ray back into the water.

These rays, being bottom-dwellers, can extract oxygen from the water while remaining stationary by pumping water across their gills. This ability sets them apart from many other shark and ray species that need to keep swimming to breathe. This evolutionary trait proves crucial in their survival within fishing nets, contributing to their successful release in the KUL programme. Fishers report leaving their nets submerged for 12 hours, yet many wedgefish are found alive, allowing for safe release.

Out of the blue, I spot a baby tiger shark tangled in the net. Diving down, I witness the life draining from its eyes as it's pulled against the boat. With a wave's motion, the shark rolls free, slowly descending into the depths. Oxygen escapes from its gills and mouth, illustrating its 'last breath'. The harsh reality of bycatch hits me in the stomach. Despite not targeting sharks, a large proportion of the fishers' catch comprises Threatened and Critically Endangered species.

To qualify for compensation, fishers document safe releases with waterproof cameras provided by KUL. Since 2022, over 1,000 Critically Endangered sharks and rays have been released thanks to KUL. Fishers have also learned tagging and safe handling methods, contributing to scientific research. Hollie explains that wedgefish have a post-capture survival rate of around 80%, whereas the survival rate for hammerheads is generally lower.

Interviews with local fishers and researchers reveal a troubling pattern: most catches consist of young, Critically Endangered sharks and rays. Kusuma, a local officer for KUL, shows me shocking photos from his iPhone revealing piles of baby sharks caught as bycatch. In a single day during high season, one boat can haul in up to 300 baby scalloped hammerheads, along with other endangered species. This alarming discovery highlights the critical need for KUL's programme along this coastline, which has recently been recognised as an Important Shark and Ray Area (ISRA) due to being a critical habitat for hammerheads and wedgefish. For shark populations to thrive, it is essential that juveniles mature and reproduce. Through community engagement, KUL has emphasised the importance of releasing young sharks and rays, so populations can grow. As KUL fisher Abdurrahman passionately states: "We can help save sharks and rays from extinction!"

With 30% of Aceh's economy relying on fishing, balancing marine conservation with community livelihoods is crucial. Compensation from KUL stabilises incomes, enabling fishers to support their families and invest in their communities. Beyond compensatory payments, fishers also receive training in sustainable fishing and research practices. As part of these wider efforts, KUL is leading a transition from gill nets to traps, a move aimed at avoiding bycatch of sharks and rays altogether. These traps, resembling oversized lobster pots and adorned with palm leaves, create miniature ecosystems that attract marine life such as cuttlefish and squid, while minimising bycatch because sharks and rays are typically too large to enter the traps. Despite their higher cost, with increased funding KUL could facilitate broader adoption of this more sustainable method. During a conversation with local fisher Rusdi, he proudly displays photos on his phone showcasing the bountiful catch from the morning's haul - a trap teeming with fish and crabs but devoid of sharks. He expresses: "I'll never return to gill nets. These traps allow me to work less, earn more, and are better for the sharks."

KUL has equipped more than 35 fishing boats, each with two to three fishers, with waterproof cameras to record the safe release of sharks and rays to receive correct compensation. I follow Kusuma on his daily rounds to chat with fishers and collect footage of releases. As we approach the local harbour in Aceh Jaya, there's a palpable sense of excitement in the air. Fishers like Adliyas, celebrated as the 'shark hero' for releasing the most sharks, have transformed conservation into a friendly competition. With his waterproof camera in hand, he approaches Kusuma. "I released five sharks today," he exclaims.

Without financial support from the Save Our Seas Foundation and the UK Darwin Initiative, and the commitment of the local and national government and partner universities, the KUL programme would not be possible. With two years of grant funding remaining, KUL is exploring long-term financing strategies to establish a community-based conservation fund, supported by divers and dive shops across Indonesia. "We want to develop mechanisms and institutions to sustain KUL's success," says Hollie. The project has already won support from fishers and regional leaders who recognise the interconnectedness between their community's future and the health of marine ecosystems. Azwar Anas, the chairman of fisheries in Aceh province expresses: "The Ocean is for the people, it is the source of their lives. This is why we are proud to be a part of [KUL]."

As we journey back to shore, the day's experiences weigh heavily on my mind, but KUL stands as a beacon of hope, illuminating the path towards a sustainable future for both oceans and people. **O**

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| TOP: A local fisher, now dedicated to conservation, tags a smoothnose wedgefish. Photograph by Liam Webb.
| BOTTOM: Fishers provide footage of sharks and rays safely released, allowing them to be compensated.