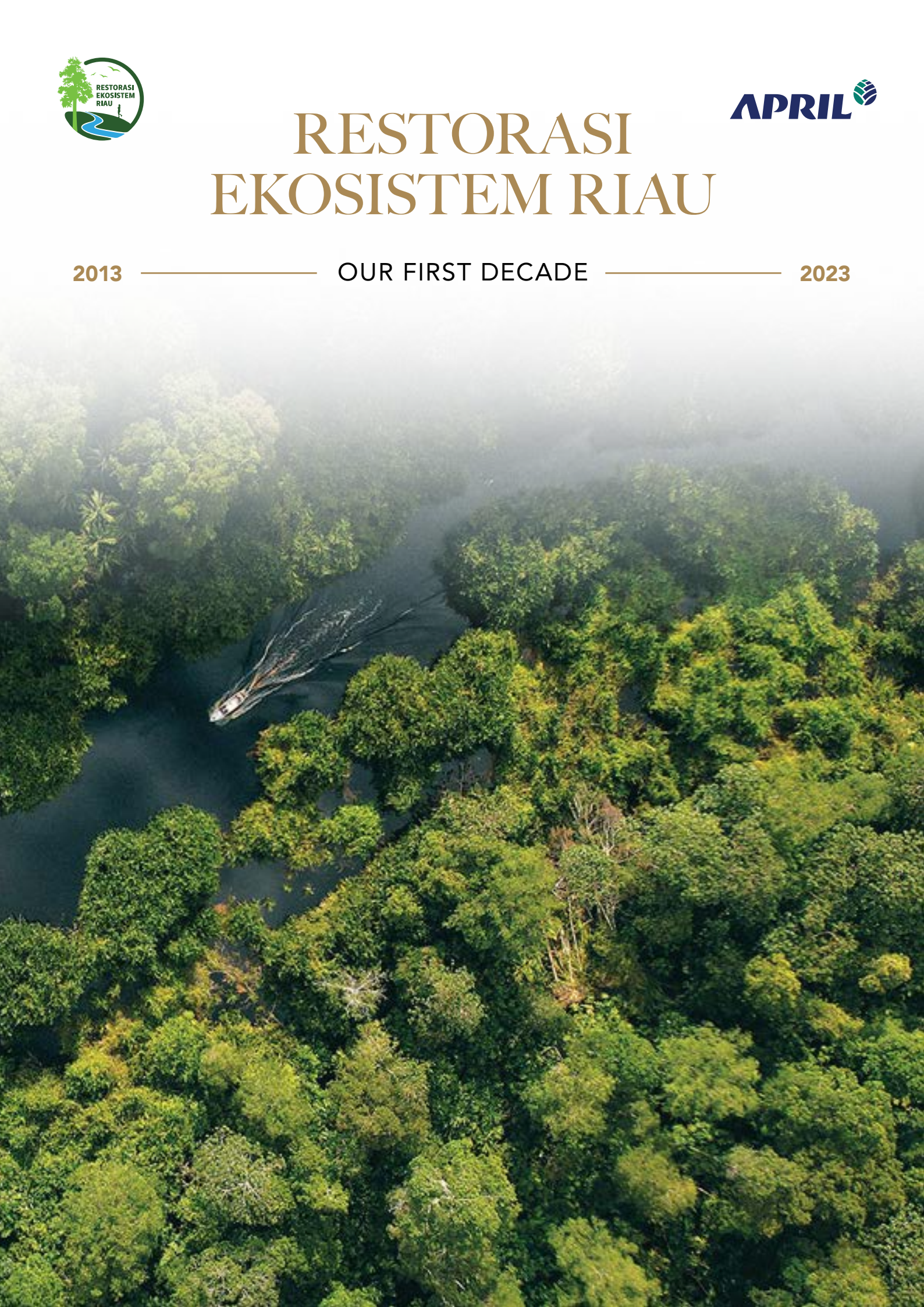
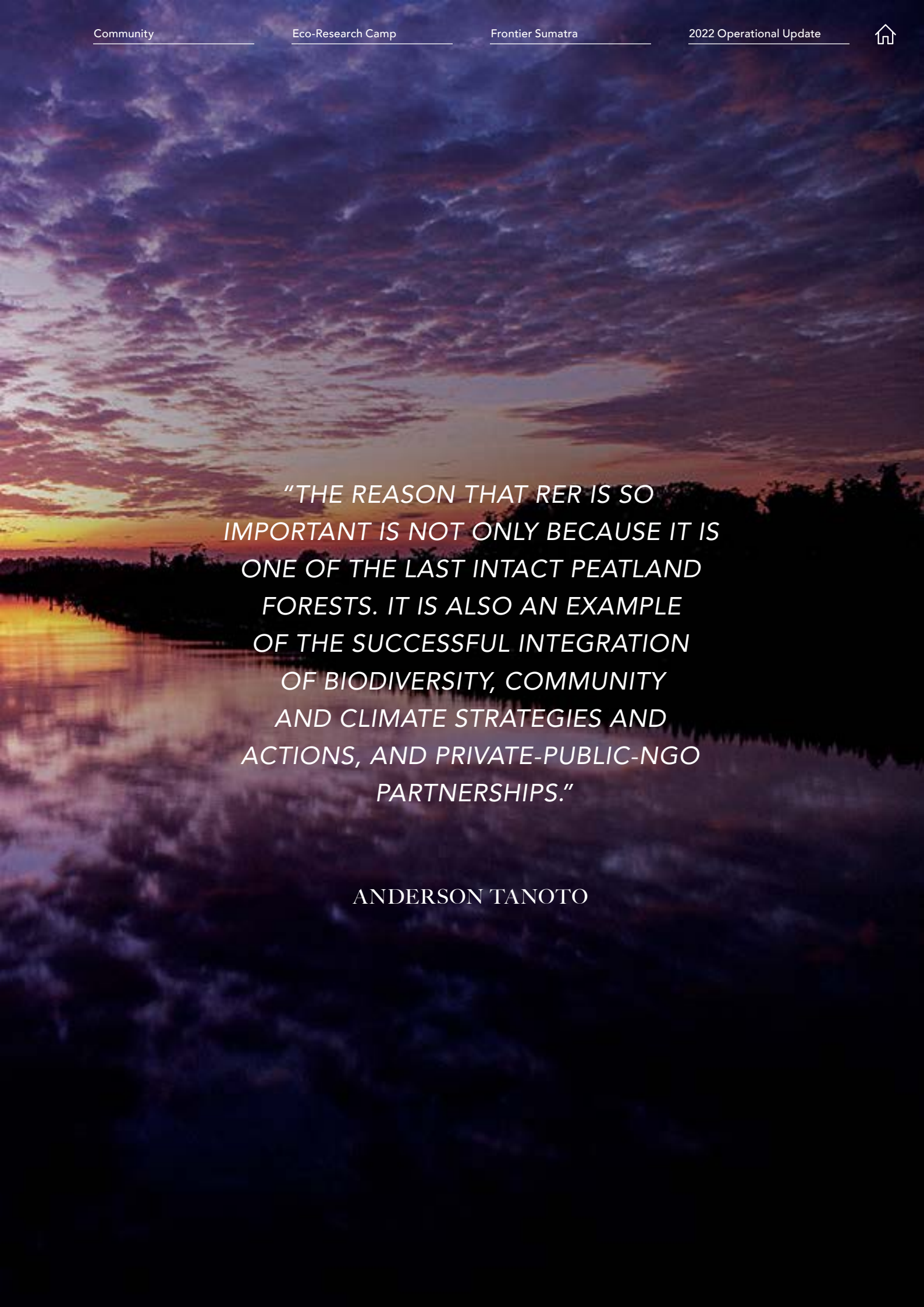
RESTORASI EKOSISTEM RIAU

2013 — OUR FIRST DECADE — 2023





"THE REASON THAT RER IS SO IMPORTANT IS NOT ONLY BECAUSE IT IS ONE OF THE LAST INTACT PEATLAND FORESTS. IT IS ALSO AN EXAMPLE OF THE SUCCESSFUL INTEGRATION OF BIODIVERSITY, COMMUNITY AND CLIMATE STRATEGIES AND ACTIONS, AND PRIVATE-PUBLIC-NGO PARTNERSHIPS."

ANDERSON TANOTO

CONTENTS

A PATHWAY TO PROGRESS

RESTORASI EKOSISTEM RIAU OR RER IS A NATURE-BASED SOLUTION TO THE CLIMATE AND NATURE CRISES.

At its core, RER is about investing in nature and biodiversity protection.

When it was established a decade ago, RER delivered a production-protection approach that integrated production forestry alongside conservation and restoration forest. This provided consistent and long-term access to the significant financial and technical resources needed to protect tropical peat swamp landscapes at scale in Sumatra, Indonesia.

Unique to APRIL in Indonesia, RER set out to mitigate years of selective logging and canal construction by previous land license holders and illegal loggers, securing the protection of a vitally important tropical peat swamp forest and the biodiversity it supports. This story is powerfully captured in Frontier Sumatra, a full-length documentary that tells the story of RER that has screened globally.

Then and even more so today, RER demonstrates that it is possible to integrate long-term private sector landscape restoration at scale in Indonesia as part of a business model that's committed to serving climate, nature, people and sustainable business growth.

RER is a solution for our times. Global forums frequently contemplate the levers we need to collectively pull across the public and private sectors to accelerate investment in nature-based solutions and encourage corporate investment in forest restoration at scale.

Hosting visitors to RER from around the world, I typically receive the same response: we didn't understand the scale of what you've achieved here, and now that we do, how can it be replicated elsewhere?

While the context and complexities that RER addresses are unique to Indonesia and the landscape it occupies, it is now a proven model of tropical ecosystem restoration and an example of what can be achieved anywhere through the combined application of science and corporate commitment.

RER's research teams and visiting scientists continue to uncover many of nature's secrets inside the restoration area to inform scientific understanding of peatland landscapes.

MR. ANDERSON TANOTO

MANAGING DIRECTOR, RGE

Collaboration with government, partnerships with science-based experts, and respectful engagement with communities have been central to its success and will continue to underpin its future.

As the call intensifies for increased investment in nature, it's timely to consider how RER's blueprint can be applied to other restoration efforts in Indonesia, and also as a nature-based solution globally.

Accelerating the sharing of knowledge and practices across the various restoration projects in tropical and boreal landscapes can help catalyse new projects across Indonesia and around the world.

Ecosystem restoration doesn't need to belong solely to the forestry sector, though our skill sets and knowledge make natural sense for it. That doesn't diminish the opportunities to create new partnerships across sectors to evolve the science, technology and financial mechanisms supporting them.

And we need to continue to support governments to establish more restoration programmes in place on the ground if we are to meet the planet's climate goals.

RER's first decade has established a foundation to build on, and it couldn't have come at a more important time. As our visitors note, our collective ability to establish more RER's will go a long way to securing the planet's biodiversity. RER is here as one of many paths in our collective pursuit of nature-positive future.

CHAIRMAN'S MESSAGE

THIS YEAR MARKS THE TENTH ANNIVERSARY OF RESTORASI EKOSISTEM RIAU (RER), ONE OF THE WORLD'S LARGEST AND MOST ECOLOGICALLY SIGNIFICANT TROPICAL PEAT SWAMP RESTORATION PROJECTS LOCATED IN SOUTHEAST ASIA.

Situated on the eastern coast of Riau Province, Sumatra, in Indonesia, it spans 150,693 hectares across the core of the Kampar Peninsula as well as part of the neighbouring Padang Island.

The ring of production forestry plantations that surrounds and protects the RER landscape is an approach which has now come to represent our unique production-protection approach, where the scientific and technical knowledge and resources required to undertake such a massive restoration project over a sustained period of time are generated by sustainably managed production forestry.

While we celebrate this milestone, we might reflect that a decade isn't a particularly long time in the history of a tropical peat forest that's been thousands of years in the making. Left undisturbed, nature in this landscape moves slowly at a delicate undisturbed pace. This forest's journey has been far longer and more patient than the story of our own company.

But for all its long history, this decade just passed may well be one of this forest area's most important. Over the past 10 years, the RER team has worked tirelessly to repair the damage caused by earlier intrusion of canals that supported selective logging in the Kampar Peninsula's interior over the preceding years, carefully assimilating with the presence of production forestry on its perimeter to restore the form and function of RER at a landscape scale.

RER's 10-year journey is marked by these values, but also a spirit of partnership and discovery and a commitment to science and transparency. Three examples stand out.

RER's scientific commitment is best exemplified by the efforts of the early survey teams, led by experts from foundation partner, Fauna & Flora International. These teams scoured the vast, remote interior of the RER area to measure and record peat soil depths, observe and document evidence of fauna and flora and position cameras that would in turn disclose the forest's secrets in the form of many rare and endangered species.

These pioneers laid the foundations for the understanding of the area's carbon store, its biological footprint and its biodiversity. In just ten years we have recorded 861 (by June 2023) species of plant and animal, including 78 species of mammals, 106 species of amphibians and reptiles, 318 bird species, 199 species of plants, 89 species of fish and 71 odonata species.

MR. BEY SOO KHIANG

CHAIRMAN, APRIL GROUP

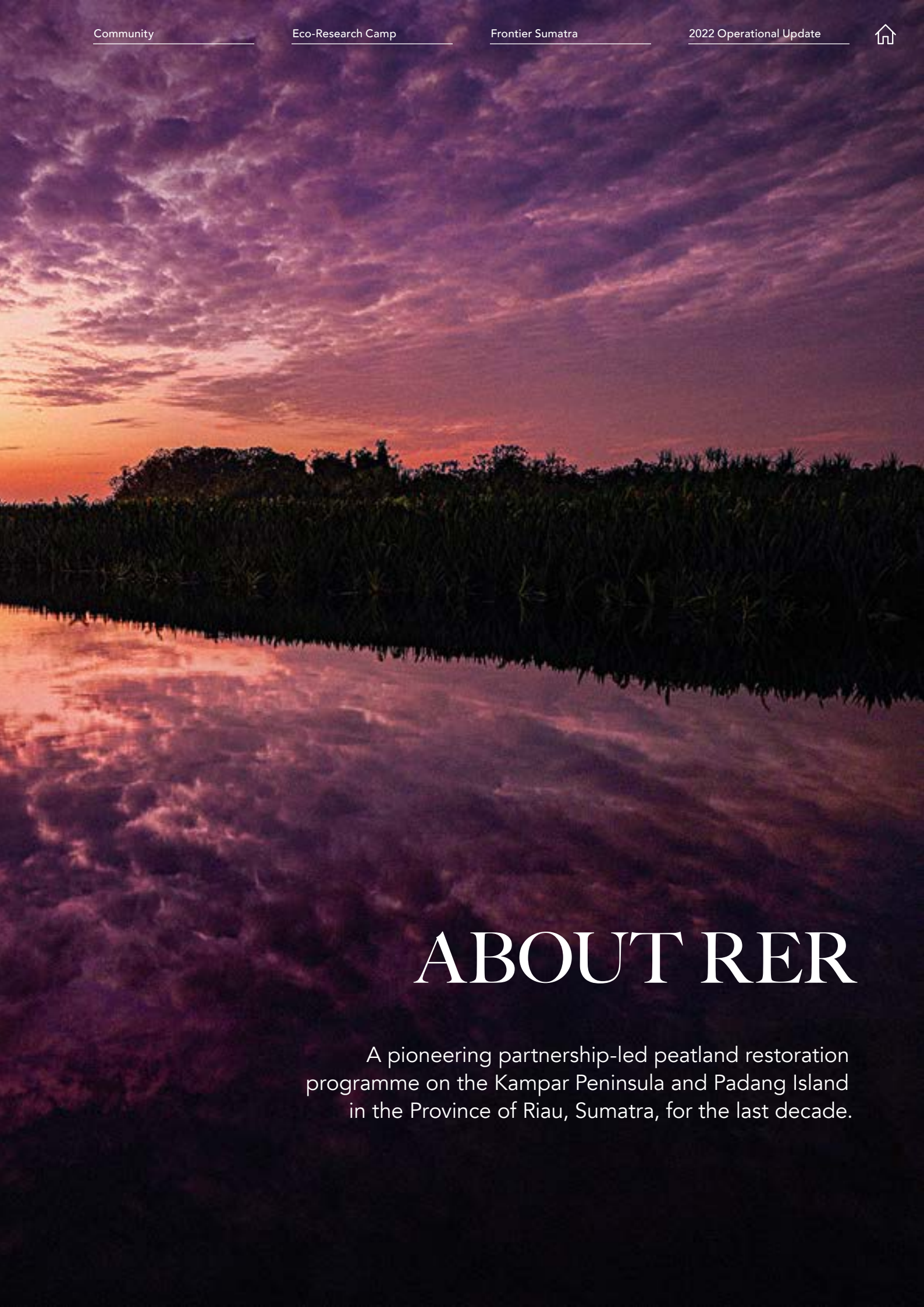
CHAIRMAN, RER ADVISORY BOARD

The same spirit drove the team behind the Frontier Sumatra documentary film project, who endured the global pandemic as well as the Kampar's arduous and demanding terrain to compile a compelling visual story of RER, bringing the project to life for global audiences in partnership with Discovery Asia.

And more recently, an Eco-Research Camp has been established on RER's perimeter to allow scientists, researchers and other interested stakeholders an opportunity to visit or study this rare landscape first hand. The investment in the Eco-Research camp reflects that we have much to learn yet, and the RER's role in the development of more in-depth worldwide knowledge and sharing on tropical peatland landscapes.

In the following pages you will read much more about those who have contributed to the first of many decades of restoration work at RER. On behalf of RER and APRIL, I would like to take this opportunity to thank you all for the belief you have shown, along with the expertise you have brought to the programme.

Together we have learned over the past decade that tropical peat swamp forest restoration takes a great deal of time and collective action. Our time with this landscape to date is but a fraction of what we hope will be a continuing story of discovery, learning and collaboration for forest restoration in Indonesia and globally. Together we can be proud that we took the first step to protect and restore this large tropical peatland swamp for the benefit of our future generations.



ABOUT RER

A pioneering partnership-led peatland restoration programme on the Kampar Peninsula and Padang Island in the Province of Riau, Sumatra, for the last decade.

1.

THE KAMPAR PENINSULA IN RIAU PROVINCE, ON THE EASTERN COAST OF SUMATRA, INDONESIA, INCLUDES ONE OF THE LAST LARGELY INTACT LOWLAND TROPICAL PEAT FORESTS IN SUMATRA, A SINGLE BLOCK OF FOREST THAT EXCEEDS 344,000 HECTARES (3,000 SQUARE KILOMETRES) IN SIZE.

The peat swamp forests on the Peninsula extend some 70 kilometres north-south at its widest to the west, and 110 kilometres west-east from the dryland western boundary to the meeting of the Kampar and Siak rivers. There are two peat domes—the broad, flat and elevated areas of organic peat that are at the highest point of a peat hydrological unit—within this area, roughly centrally positioned, and several lakes. From these lakes, five rivers flow away from the centre of the peninsula to Selat Panjang in the north, and the Kampar river to the south.

Despite years of logging and degradation of the landscape by previous land license holders, large tracts of the forest in the area remain pristine and are home to hundreds of plant and animal species, many of which are classified as vulnerable or endangered, including the Sumatran tiger, the Malayan sun bear, the Flat-headed cat and dozens of bird species.

This uniquely sensitive forest ecosystem is the primary focus of RER, which was established 10 years ago by APRIL Group to protect a large area of forest on the Kampar Peninsula and on nearby Padang Island. At the time, this move by a private sector company to assume direct responsibility for the protection of a vast area of forest in Southeast Asia was, to our knowledge, unprecedented.

Today, RER covers a total area of 150,693 hectares, about twice the size of Singapore. The area comprises approximately 130,095 hectares at the heart of the Kampar Peninsula with another 20,599 hectares on Padang Island.

EARLY DAYS

RER WAS FORMALLY LAUNCHED BY THE FORMER INDONESIAN MINISTER OF FORESTRY, ZULKIFLI HASAN, IN MAY 2013.

At the time, the programme area was made up of 20,265 hectares of peat forest granted through an ecosystem restoration concession (ERC) license from the Indonesian Government.

Speaking at the launch, Minister Hasan said: "This license is significant as it is the first to be granted to an organisation with a collaborative structure involving the private sector and civil society groups. I see this model working for a common purpose as an innovative boost to the Government's efforts to ensure a balance in responsible forest industry development with conservation of important forest areas."

Several key elements that have underpinned the successful operation of RER have been present from the very start. These include a commitment to engage with local communities, monitoring of local wildlife and plant species, active protection and patrolling of the concession areas to limit illegal encroachment and close collaboration with NGOs, civil society groups and local Government agencies to implement agreed actions to progress RER's goals.

1. RER Landscape in Kampar Peninsula.
2. Minister of Forestry, Zulkifli Hasan (sixth from left), launches the Restorasi Ekosistem Riau in 2013.

2.

EXPANSION

AT THE COP21 MEETING IN PARIS IN DECEMBER 2015, APRIL ANNOUNCED THE EXPANSION OF RER TO A TOTAL AREA OF MORE THAN 150,000 HECTARES.

The company also committed US$100 million over a 10-year period to support conservation and restoration initiatives. This followed the announcement the previous year of its 1-for-1 commitment, to conserve one hectare of natural forest for every hectare of fibre plantation. RER forms an integral part of this 1-for-1 commitment.

Today, RER consists of four concession areas on the Kampar Peninsula, which form a contiguous natural forest, with an additional concession located on nearby Padang Island.

Concession	Size (hectare)	Location	Year of concession
PT. Gemilang Cipta Nusantara (GCN-KP)	20,123.33	Kampar Peninsula	2012
PT. Gemilang Cipta Nusantara (GCN-PPD)	20,598.53	Padang Island	2013
PT. Sinar Mutiara Nusantara (SMN)	32,781.06	Kampar Peninsula	2014
PT. The Best One UniTimber (TBOT)	40,665.67	Kampar Peninsula	2014
PT. Global Alam Nusantara (GAN)	36,524.78	Kampar Peninsula	2014
Total	**150,693.37**		

In late 2020, as part of its APRIL2030 agenda, APRIL introduced a new funding element pledging to invest US$1 for every tonne of plantation fibre supply per year in landscape conservation and restoration. This has already delivered US$47 million of funding to date.

1.

2.

PRODUCTION-PROTECTION

The Kampar Peninsula and Padang Island are home to communities, community forests, natural reserves and plantations managed and operated by APRIL or other companies. To manage the needs of these diverse land uses, APRIL employs an integrated production-protection landscape approach. This approach is based on the sustainably managed fibre plantations located on the perimeter of RER, which serve to protect the interior peat swamp forest and peat domes.

These plantations create a buffer zone that helps to protect the forests from human encroachment, illegal logging and fires. This production-protection approach has proven to be a reliable, consistent and effective way to support forest restoration in Indonesia and deliver the significant financial and technical resources required to maintain RER over time.

The RER team also works with surrounding communities as part of this approach. Together with APRIL, RER collaborates with communities to find ways to use the forest in sustainable and ecologically friendly ways through education and training, while at the same time improving livelihood opportunities.

1. RGE Managing Director, Anderson Tanoto (third from left), launches APRIL commitment to invest US$100 million to support conservation and restoration initiatives.

2. Production-protection model.

PARTNERSHIPS

Over the last ten years, RER has partnered with Fauna & Flora and BIDARA.

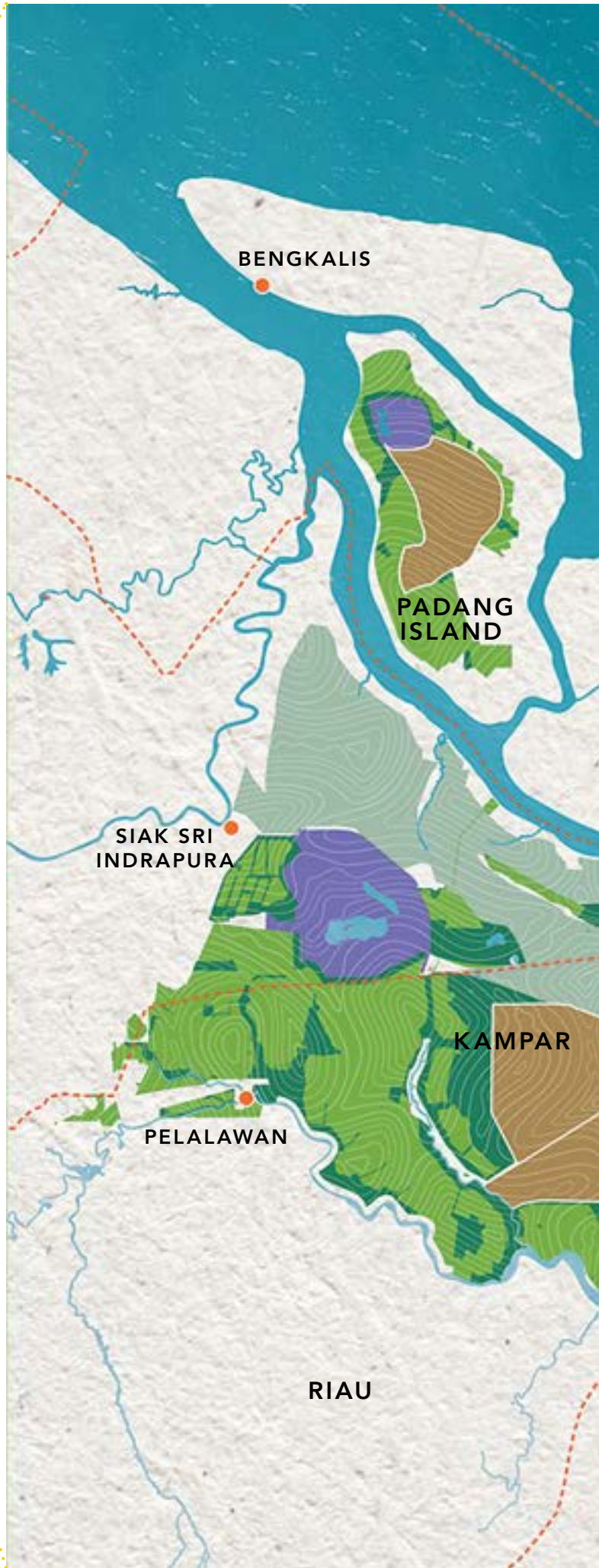
Fauna & Flora serves as a technical partner supporting RER's science-based restoration approach. Fauna & Flora has extensive experience in integrating innovative restoration methods with social needs to deliver sustainable conservation solutions. BIDARA specialises in community empowerment and social capital initiatives. It works with rural communities on the Kampar Peninsula to ensure their long-term social welfare with a focus on education, health and economic opportunities.

The RER team also works with Laskar Alam Foundation, based at Padang Island, which helps to empower communities to develop sustainable agriculture through community farming, agroforestry education, and school activities.

In recent years, RER has begun working with Tropenbos Indonesia and Wildlife Conservation Society. Tropenbos Indonesia is assessing the livelihood needs of local villages on the Kampar Peninsula, while Wildlife Conservation Society is collaborating with APRIL to implement strategies to prevent the trade in illegal wildlife in the RER area.

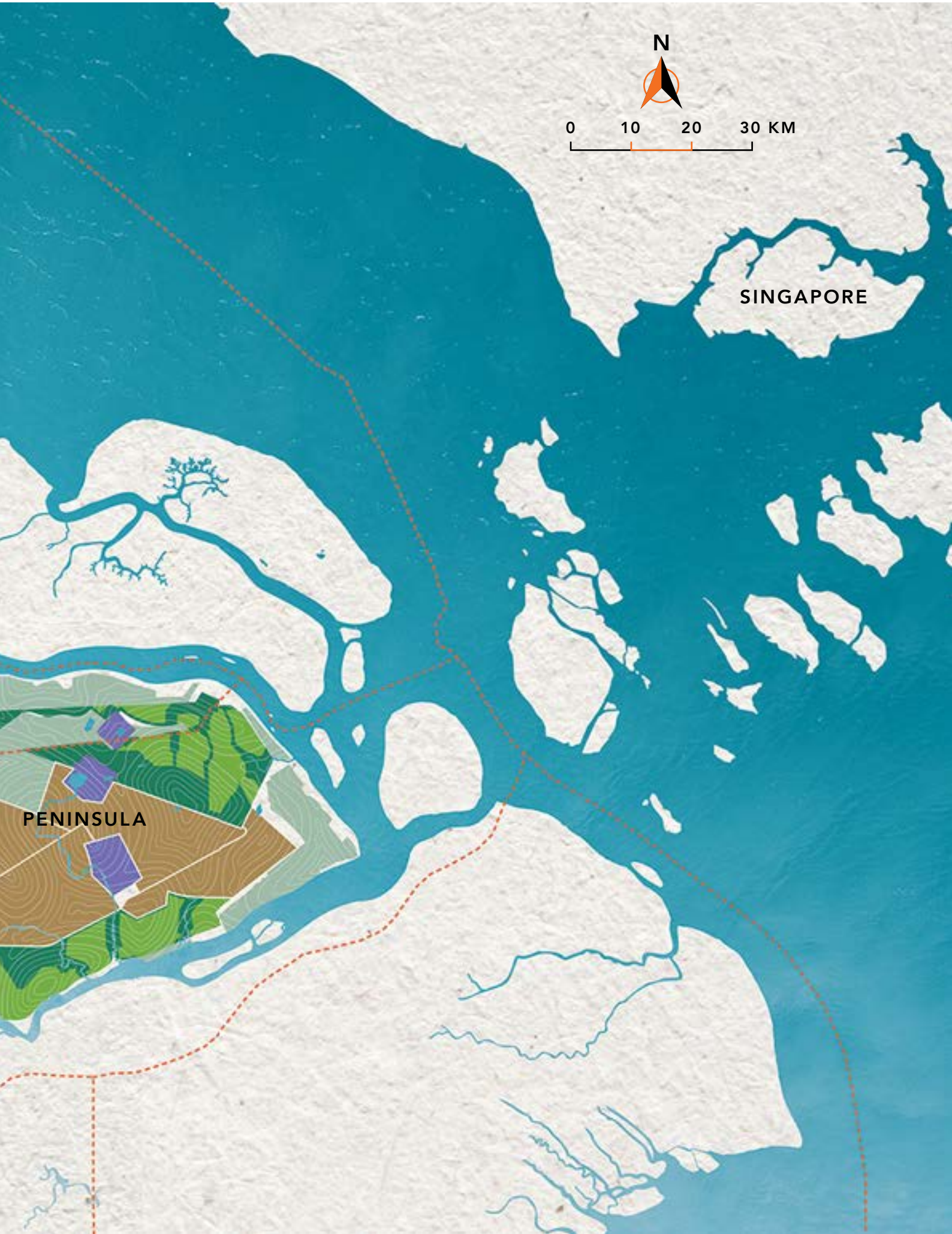
In 2017, RER also worked with The Nature Conservancy to carry out a scoping and assessment project to help develop a land use management plan for the Kampar Peninsula. The project team identified that the Kampar Peninsula contains over 344,000 hectares of lowland peat forest, the largest block of peat forest in Riau.

MAP OF RESTORASI EKOSISTEM RIAU



LEGEND

- RESTORASI EKOSISTEM RIAU (RER)
- APRIL CONSERVATION
- APRIL PLANTATION
- CONSERVATION AREA
- OTHER COMPANIES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GOVERNANCE

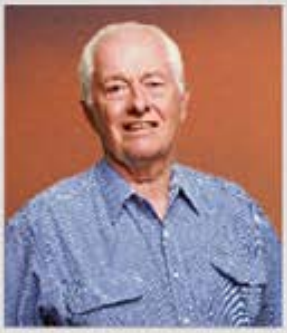
RER'S MANAGEMENT TEAM IS GUIDED BY AN ADVISORY BOARD THAT INCLUDES EXPERTS ON CONSERVATION, COMMUNITY ENGAGEMENT AND LANDSCAPE MANAGEMENT.

RER ADVISORY BOARD

BEY SOO KHIANG

Chairman,
APRIL Group
Chairman,
RER Advisory Board

Bey Soo Khiang was appointed Vice Chairman of the RGE group of companies in March 2011 and is also Chairman of APRIL Group. A former aviation executive and distinguished national defence leader, he oversees sustainability across the RGE Group of companies.



JEFFREY ARTHUR SAYER

Professor of
Forest Conservation,
University of
British Columbia

Jeffrey Arthur Sayer is an expert in ecology and has worked throughout his career either as a researcher or programme manager, mostly at the interface between research and practical natural resource management. At present, he is Professor of Forest Conservation at University of British Columbia.

PAUL HOTHAM

Senior Conservation
Director,
Fauna & Flora

Paul Hotham has oversight of Fauna & Flora's Americas & Caribbean, Asia-Pacific and Eurasia regions and the Wildlife Trade programmes. Paul graduated from the University of Wales Aberystwyth with a BSc (Hons) in Countryside Management and an MSc in Protected Landscape Management.

KARTINI SJAHRIR

Indonesian
Anthropologist

Kartini Sjahrir was the first female chair of the Indonesia Anthropology Association. She has a Master's degree and PhD from Boston University and an undergraduate degree in anthropology from University of Indonesia. She has also served in various posts as a diplomat and worked in senior government positions.

LUCITA JASMIN

Director for Sustainability & External Affairs, APRIL Group

Lucita Jasmin has a global base of expertise in sustainability and strategic communications in the intergovernmental and private sectors. She leads the advancement and implementation of APRIL's sustainability commitments, policies, and programmes, including the ambitious APRIL 2030 agenda and also leads stakeholder engagement and communications.

RER MANAGEMENT TEAM

BRADFORD SANDERS

Head of Operations, Restorasi Ekosistem Riau

Brad first joined APRIL in 2003 as Firefighting Coordinator. From 2012–2015, Brad worked as Technical Advisor for the UK-based Royal Society for the Protection of Birds. Brad rejoined APRIL in 2016 as Deputy Head of Conservation for RER. He obtained his BSc and MSc in Forest Management from Clemson University.

NYOMAN ISWARAYOGA

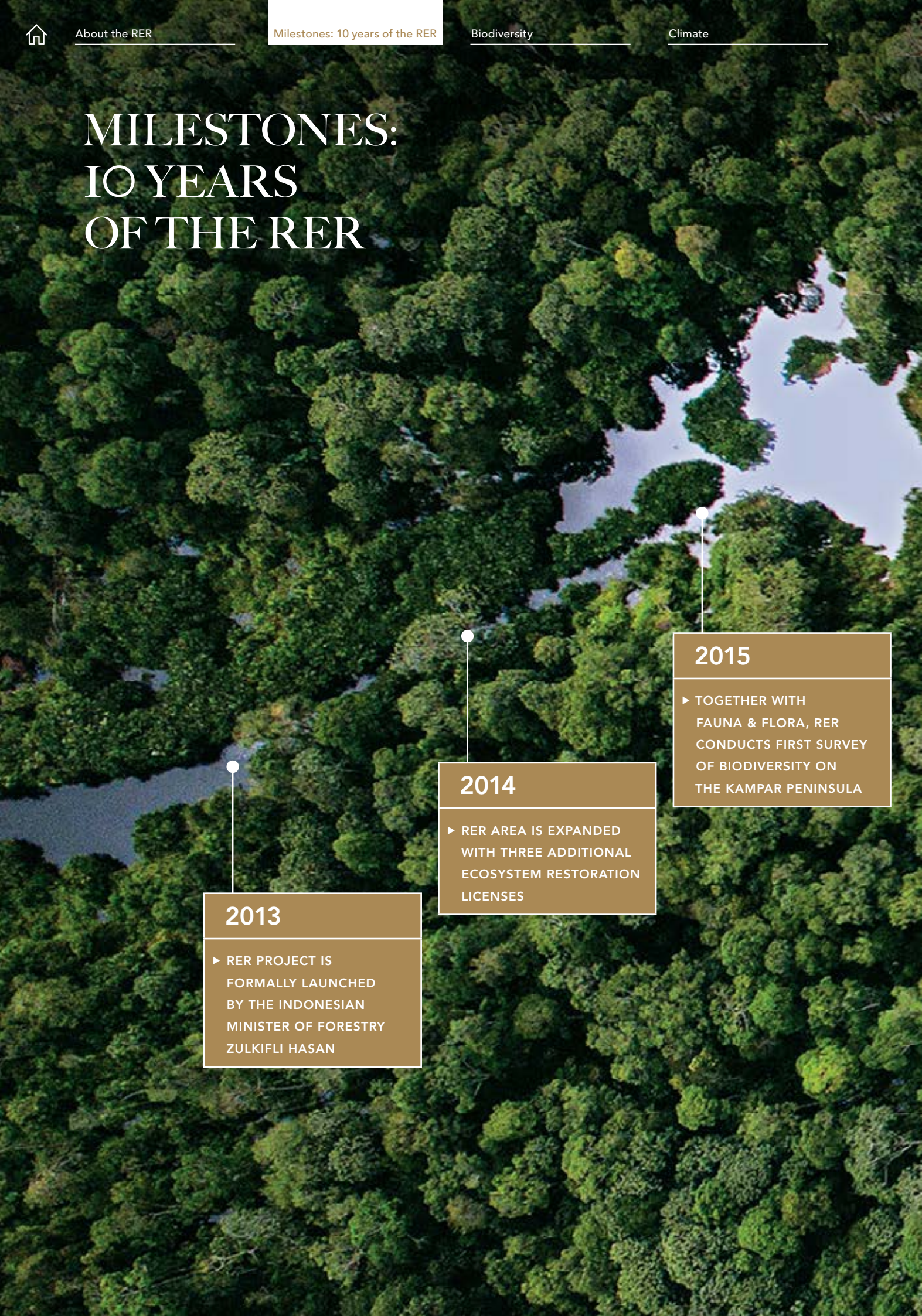
Head of External Affairs & RER Communications, APRIL Group

Nyoman Iswarayoga is Head of External Affairs APRIL Group, and was previously External Affairs Director of Restorasi Ekosistem Riau. Before this, Nyoman was with the World Wide Fund for Nature (WWF) Indonesia where he started in managing its climate and energy program and was then later its Director of Communication and Advocacy.

MILESTONES:

IO YEARS OF THE RER

MILESTONES: 10 YEARS OF THE RER



2013

- RER PROJECT IS FORMALLY LAUNCHED BY THE INDONESIAN MINISTER OF FORESTRY ZULKIFLI HASAN

2014

- RER AREA IS EXPANDED WITH THREE ADDITIONAL ECOSYSTEM RESTORATION LICENSES

2015

- TOGETHER WITH FAUNA & FLORA, RER CONDUCTS FIRST SURVEY OF BIODIVERSITY ON THE KAMPAR PENINSULA

2015

- AT COP21 IN PARIS, APRIL GROUP ANNOUNCES US$100M FOR CONSERVATION AND RESTORATION

2017

- THE NATURE CONSERVANCY COMPLETES ASSESSMENT FOR DEVELOPMENT OF LAND USE MANAGEMENT PLAN FOR THE KAMPAR PENINSULA

2018

- RER INITIATED RESTORATION ON 58.2 HECTARES OF DEGRADED FOREST, OUR LARGEST ACCOMPLISHMENT TO DATE

2019

- FOREST HEALTH ASSESSMENT RESULTS SUGGEST THAT FORESTS ARE BECOMING HEALTHIER DURING RER'S MANAGEMENT

2019

- RER COLLABORATES WITH SINTAS TO CONDUCT FIRST DETAILED FIELD SURVEY OF SUMATRAN TIGERS ON THE KAMPAR PENINSULA

2020

- RER WORKS WITH IUCN ODONATA SPECIALIST TO CONDUCT FIRST BASELINE SURVEYS ON DRAGONFLIES AND DAMSELFLIES

2020

- A FEMALE SUMATRAN TIGER IS RELEASED BACK TO THE WILD IN THE KAMPAR PENINSULA

2021

- COMPLETION BY FAUNA & FLORA OF THE FINAL BIODIVERSITY BASELINE STUDY IN PT. GAN

2021

- FRONTIER SUMATRA DOCUMENTARY PREMIERS ON DISCOVERY ASIA

2021

- RER ECO-RESEARCH CAMP, INCLUDING A DEDICATED PEAT LAB, BECAME OPERATIONAL

2021

- COMPLETION OF ASSESSMENT, VALIDATION AND REGISTRATION OF THE RER'S CARBON PROJECT

BIODIVERSITY

Plant and animal monitoring is an essential part of any restoration project and is a key operational task that the RER team undertakes each year.

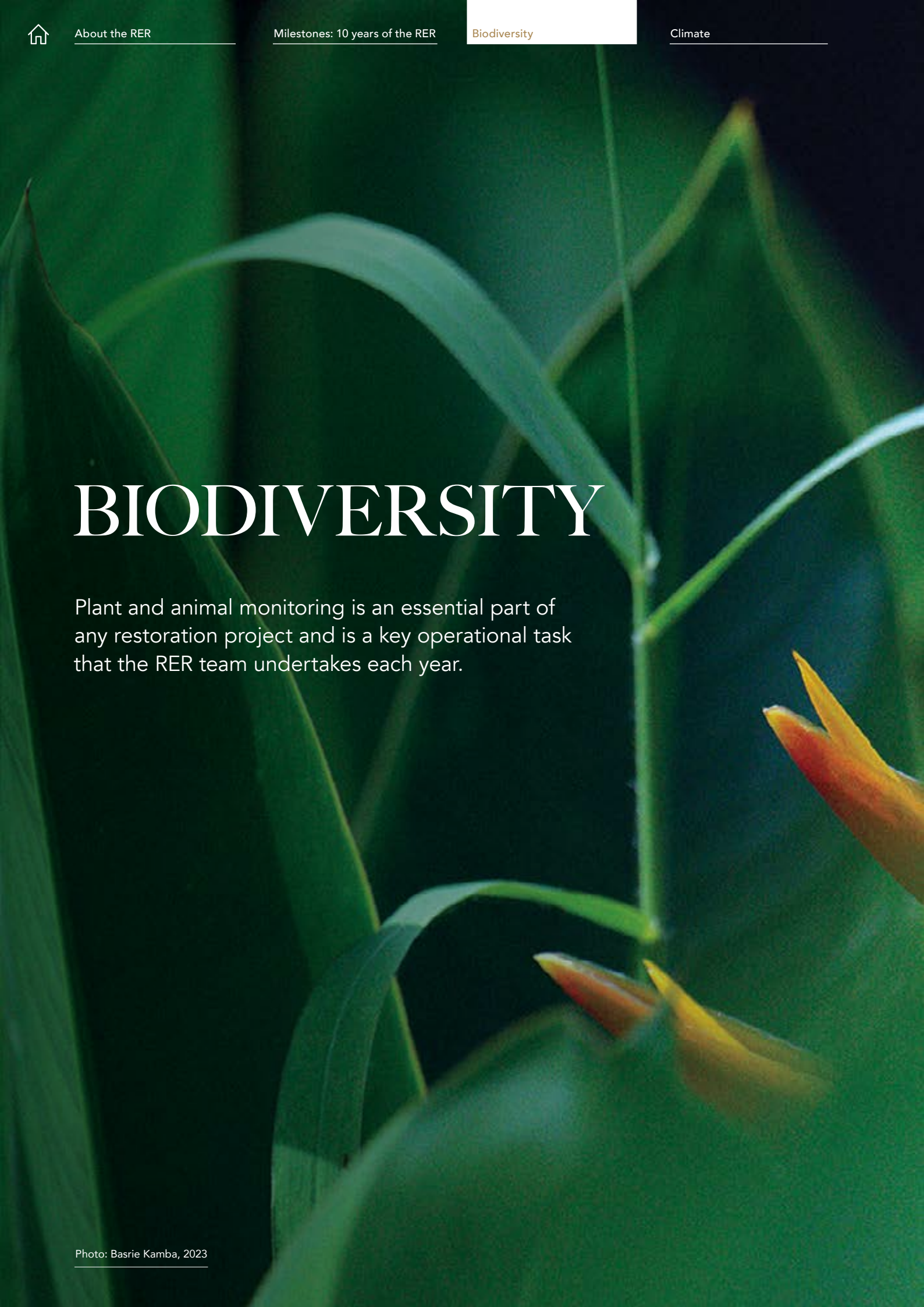
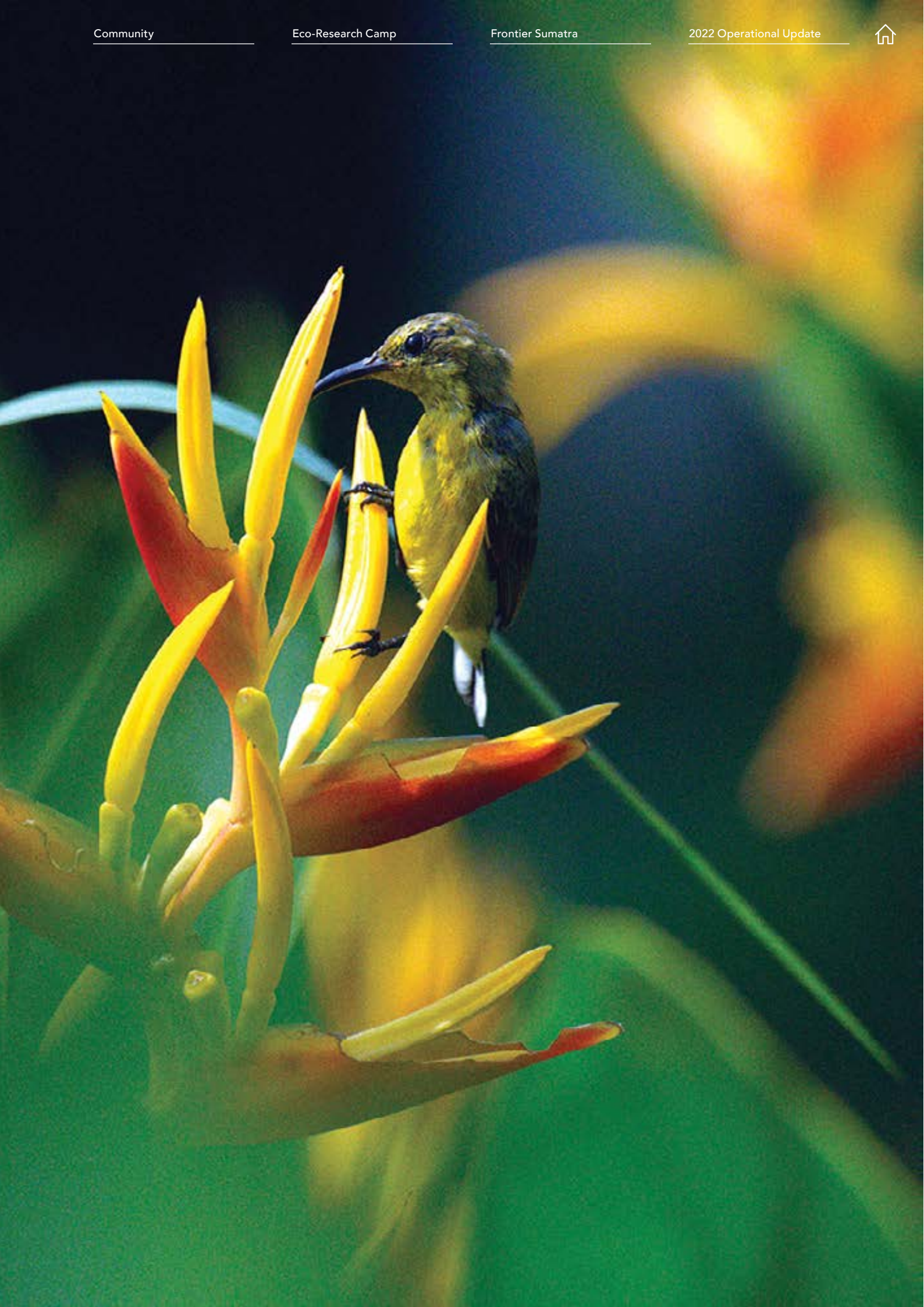


Photo: Basrie Kamba, 2023



GETTING TO KNOW THE FOREST INHABITANTS

RER INVESTS CONSIDERABLE RESOURCES IN DATA COLLECTION TO IDENTIFY THE RER'S DISTINCT PLANT AND ANIMAL SPECIES, WHICH HELP TO REFINE AND ENHANCE EXISTING FOREST PROTECTION AND RESTORATION STRATEGIES.

To date, RER teams, with the support of Fauna & Flora, have identified 861 (by June 2023) species of plants and animals. Many of these are considered for the IUCN Red List as critically endangered such as the Sumatran tiger *(Panthera tigris sumatrae),* Sunda pangolin *(Manis javanica),* and Bornean river turtle *(Orlitia borneensis).* There have also been recorded sightings of five out of six Sumatra cat species and eight of nine hornbill species in Sumatra, making RER an important landscape for conservation and wildlife protection.

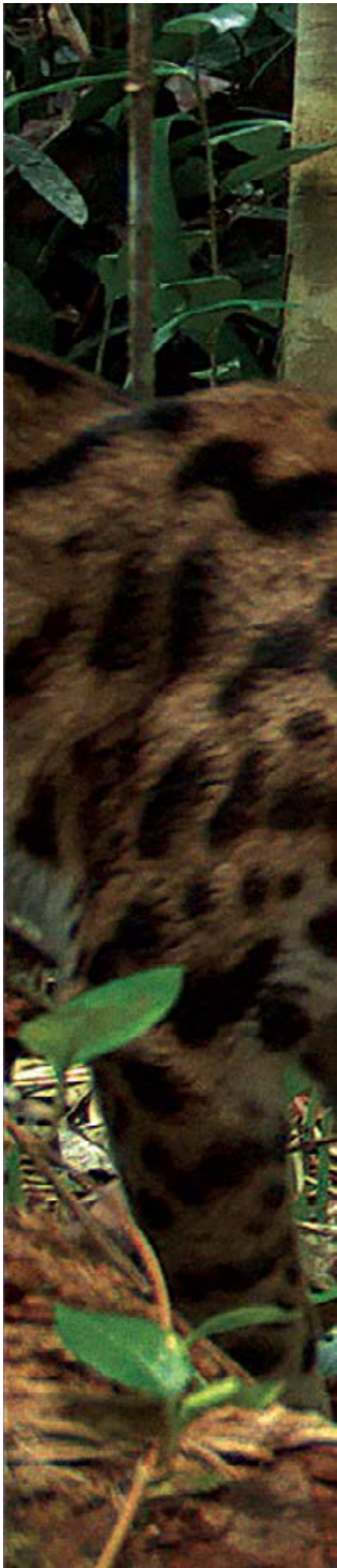
The first efforts to compile data on biodiversity in RER were conducted in 2015 by a team from Fauna & Flora. The team aimed to create a baseline on species presence in three RER's concessions—PT. Gemilang Cipta Nusantara (GCN), PT. Sinar Mutiara Nusantara (SMN) and PT. The Best One Unitimber (TBOT)—encompassing approximately 90,000 hectares on the Kampar Peninsula.

The inventory was conducted by deploying survey teams, who established field camps in the forest. A set of 32 transects and 220 camera trap stations were established across the three ecosystem restoration concessions with five survey teams, covering plants, mammals, birds, and reptile and *herpetofauna*. The surveys resulted in the identification of 549 species of animals and plants, including 44 species listed on the IUCN Red List as Critically Endangered, Endangered or Vulnerable. Since then, RER teams have continued to build on this data using a range of monitoring tools.

In 2020, Fauna & Flora started a survey in another RER concession, PT. Global Alam Nusantara (GAN), as a continuation of the surveys done in 2015 to provide reliable biodiversity baseline data in the 130,095 hectares of the RER Kampar Peninsula concessions.

The survey teams found 228 species present in the GAN concession, including two additional mammal species that were not previously observed in the 2015 surveys: the Pen-tailed tree shrew *(Ptilocercus lowii)* and the Sumatran porcupine *(Hystrix sumatrae).*

The surveys also showed that the peat forest in GAN has a wide level of plant biodiversity. Using the Shannon-Wiener/H' Diversity system, the team calculated a maximum index value of 3.45. To compare, in 2015 surveys, the maximum index value was 3.35.



The Leopard cat *(Prionailurus bengalensis)* is one of four small wild cat species captured by camera trap.

OBSERVING ANIMALS IN THEIR NATURAL HABITATS

1.

2.

1. Sunda-clouded leopard.
2. Flat-headed cat captured by camera trap on RER forest.
3. Brown-throated sunbird.

THE LANDSCAPE OF A PEAT SWAMP FOREST POSES UNIQUE CHALLENGES FOR BIODIVERSITY MONITORING. DUE TO THE HEAVY, WATER LOGGED TERRAIN, THESE FOREST AREAS ARE DIFFICULT TO TRAVERSE ON FOOT, WHICH IN TURN MAKES IT HARDER TO ENCOUNTER AND IDENTIFY WILD ANIMALS, ESPECIALLY MAMMALS.

Camera traps are therefore important for biodiversity monitoring and understanding the landscapes. The camera traps provide valuable data on species location, population sizes and how wildlife interacts with its surroundings. This information is used by the RER team to inform site specific restoration strategies.

A camera trap is a digital camera equipped with infrared, heat and/or motion sensors that can be used to observe the lives of animals. They need to be durable as the RER teams have found several units damaged by sun bears or macaques. Also, acidic and moist peat swamp conditions are not ideal for electronic equipment, especially over a prolonged length of time. Each unit is equipped with a securing strap and the height can be adjusted depending on the target species for monitoring.

Occasionally, the camera traps record unexpected footage. In footage taken by the camera trap, the elusive Flat-headed cat *(Prionailurus planiceps)* was recorded in RER. Updates on these first recordings of the species on the Kampar Peninsula were then published in the prominent conservation journal, Oryx. Last year, through the camera traps, the teams were also able to obtain the first visual sighting of Corina, a female Sumatran tiger who had been caught in a poachers' snare, rehabilitated over many months and then released into the RER forests in 2020 with a GPS collar. Based on the footage, the tiger looked healthy and active.

MONITORING THE BIRD COMMUNITY OF THE KAMPAR PENINSULA

RER SITS AT THE HEART OF A SITE CLASSIFIED BY BIRDLIFE INTERNATIONAL AS AN IMPORTANT BIRD AREA (IBA).

The Kampar Peninsula covers about 344,000 hectares of this 550,000 hectare Siak Kampar landscape, which is considered significant for the international conservation of bird populations.

Bird populations on the Kampar Peninsula were first comprehensively assessed in 1991–92. From 2015, RER teams also carried out regular bird monitoring. These studies have shown that RER is filled with a wide array of birds that are characteristic of tropical peat swamp forests, from resident species to regular migrants.

Resident species that are most commonly found include peat swamp specialists such as the Hook-billed bulbul (VU) and the Grey-breasted babbler, as well as lowland specialists such as the Bonaparte's nightjar and the Wrinkled hornbill.

3.

Photo: Basrie Kamba, 2023

MONITORING THE BIRD COMMUNITY OF THE KAMPAR PENINSULA

Several galliforms—heavy ground feeding birds, such as the Black partridge (VU) and the Malay crestless fireback (CR)—have been recorded in the area. Also, 15 nocturnal birds are known inhabitants of the landscape, including six owl species *(Strigidae, Tytonidae),* four nightjars *(Caprimulgidae)* and five frogmouths *(Podargidae).*

Padang Island and the Kampar Peninsula are located in the midst of the East Asian-Australasian Flyway making it an important area for staging or wintering habitat for migratory birds flying to the southern hemisphere. Thousands of birds' flock to the RER forests to rest or stage, with migration peaking every year between August to December (southbound) and February to April (northbound). RER and Fauna & Flora observers have identified the repeated presence of migratory birds, such as the Lesser sand plover, Common greenshank, Oriental honey-buzzard and the Chinese sparrowhawk.

Extensive inventories undertaken across the Kampar Peninsula since 2010 have recorded 317 species of birds, representing more than 40% of Sumatra's 758 bird species. Of these, 250 (79%) are resident, 57 (18%) are migrant and nine (3%) are both resident and migrant.

Four pheasant species have been recorded, including the Black partridge, which was only detected in this landscape in 2016, representing a range extension for this species in Riau Province.

Birds have multiple ecological roles as predators, pollinators, scavengers, seed dispersers, seed predators, and ecosystem engineers. There are nine species of hornbills known to exist in Sumatra and of these, eight have been recorded in the Kampar Peninsula. These large birds are sometimes considered to be the farmers of the forest.

As they feast on various fruits and seeds, they also are able to commute over long distances, and help in the dispersal of seeds and tree reproduction. Their ability to connect fragmented forest landscapes is important to ensure the diversity of tree species in the Kampar Peninsula and in Sumatra.

1.

2.

1. Black-and-yellow broadbill.
2. Black-winged kite.
3. Rhinoceros hornbill.

3.

The RER team contributes to global knowledge in this area by participating in Migratory Raptor Monitoring and the Asian Waterbird Census. The Census is conducted every January and February throughout the Asia Pacific region and is an integral part of the International Waterbird Census (IWC), with local coordination by Wetlands International—Indonesia.

The data collected is shared with global conservation organizations such as IUCN and the Ramsar Convention. RER has participated in this activity since 2017 and has recorded more than 1,800 individuals from 24 water bird species. In 2021, RER recorded the first sighting of Asian openbill *(Anastomus oscitans)* during the Asian Waterbird Census in Indonesia, highlighting the importance of the RER landscape for water birds. This species was only first recorded in Indonesia in 2019.

RER also participates in biannual migratory raptor monitoring that is held during the spring (northbound) and autumn (southbound) migration on the Kampar Peninsula and Padang Island. The activity focuses on species counts of raptors that fly between the northern and southern hemisphere to escape the cold of winter or to breed. In total, RER teams have recorded more than 700 individuals from 17 species since 2016, with the Oriental honey buzzard as the most dominant species recorded.

THE SMALL INHABITANTS IN THE RER AREA

ALTHOUGH MORE THAN 861 (BY JUNE 2023) SPECIES HAVE BEEN RECORDED IN RER, THERE ARE STILL MANY SPECIES OF INVERTEBRATES THAT HAVE YET TO BE RECORDED. THESE INCLUDE ODONATA, A GROUP OF CARNIVOROUS FLYING INSECTS SUCH AS DRAGONFLIES AND DAMSELFLIES, WHICH ARE TYPICALLY FOUND IN AREAS NEAR WATER BODIES, SUCH AS FIELDS, MARSHES, OR PONDS.

Although small in size, odonata are critically important to the RER team's better understanding of the landscape. This order of winged insects is dependent on water for the development of their larval stage and serve as surrogate indicators of the water quality and ecosystem health of the environment where they are found. In 2020, RER began a partnership with Dr. Rory Dow, a well-known expert on tropical odonata species and a member of the IUCN Odonata Specialist Group, to conduct the first of four planned odonata surveys.

From the two surveys completed, as of December 2022, the team reported a total of 58 species of dragonflies and damselflies in RER, two of which are listed as Endangered (EN), and one being listed as Vulnerable (VU) according to the IUCN Red List.

Of those 58 species, one was recorded for the first time in Indonesia, and another was recorded for the first time in Sumatra. Another three were recorded for the first time in mainland Sumatra, nine were recorded for the first time in Riau Province and at least one species was new to science.

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According to several scientific studies, the Odonata of Sumatra are poorly understood with little information on their presence in Riau Province. Through the partnership with Dr. Dow, RER aims to develop a Dragonfly Biotic Index (DBI) for the Kampar Peninsula. The DBI is a highly sensitive index that can detect changes in habitat conditions caused by pollution, degradation, or alien species invasion. It also serves as a measure for a habitat's recovery process.

Once developed, the DBI can be used to monitor habitat recovery and will help RER to prioritise sites that need special conservation attention or restoration.

1. *Elattoneura aurantiaca.*
2. *Brachygonia ophelia.*

A HOME FOR THE SUMATRAN TIGER

THE KAMPAR PENINSULA HAVE BEEN ACKNOWLEDGED AS HUGELY SIGNIFICANT FOR BIODIVERSITY BY INTERNATIONAL ORGANISATIONS INCLUDING THE WORLD WIDE FUND FOR NATURE (WWF) AND THE WILDLIFE CONSERVATION SOCIETY (WCS), WHICH CONSIDER THE AREA CAPABLE OF SUPPORTING 50 OR MORE INDIVIDUAL SUMATRAN TIGERS.*

These tigers are among the most critically endangered mammal species in the world due to habitat loss and poaching, so providing a safe habitat for them is crucial for their survival.

With males weighing up to 140 kilogrammes and females up to 110 kilogrammes, Sumatran tigers have been observed near camera traps which have been set up in the forest and close to temporary camp sites set up by RER teams.

The Sumatran tiger is one of several flagship species identified in RER and plays a critical role in the long-term functioning of the forest ecosystem. Without them, these ecosystems could become imbalanced, with negative effects on plants and other animal species. For example, the tigers' prey species would increase in number and, as these are mostly herbivores, there would be reduced growth of certain types of trees and plants due to overgrazing by these animals.

* Sanderson et al. (2010). Setting priorities for conservation and recovery of wild tigers: 2005–2015. Tigers of the world: the science, politics and conservation of *Panthera tigris*. 155.

Photo: Shutterstock

SUMATRAN TIGER SURVEY

THE GOVERNMENT OF INDONESIA SET UP THE SUMATRA-WIDE TIGER SURVEY (SWTS) TO GET POPULATION ESTIMATES IN A GIVEN LANDSCAPE AND TO PROVIDE THE RIGHT CONSERVATION INTERVENTION FOR THE SPECIES.

First conducted in 2007–2009, it identified tiger occupancy across nine landscapes in Sumatra.

APRIL's concessions in the Kampar Peninsula, including the RER areas, are considered important as habitat extensions outside of prime protected areas and can potentially facilitate connectivity among main habitats, such as Giam Siak Kecil, and Kampar-Kerumutan. In the years since the survey was done, an urgent need was identified to reassess the island-wide population to evaluate the performance of past conservation programmes and to guide future interventions to better protect tigers and their habitat.

The SINTAS Foundation was set up in 2018 by a group of conservation practitioners as a non-profit organization that focuses on the conservation of neglected species and/or habitats. In 2019, RER began work with SINTAS to survey 517,500 hectares on the Kampar Peninsula. The Peninsula is one of 12 landscapes in Sumatra surveyed as part of the second Sumatra Wide Tiger Survey to update on the status of Indonesia's 2010 National Tiger Recovery Program (NTRP).

The NTRP aims to double the number of critically endangered Sumatran tigers with the goal of identifying conservation gaps, formulating conservation strategies and priority actions, and directing funds to maintain and recover their population. The results from the survey showed that the occupancy of this critically endangered species in this unique habitat is in fact much higher than in previous estimates.

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1. RER team installing camera trap.
2. Camera trap catching Sumatran tiger in RER area.
3. Corina, female Sumatran tiger, was previously found injured and snared in a community plantation on the Kampar Peninsula.

CORINA RETURNS TO THE WILD

IN DECEMBER 2020, FOLLOWING NINE MONTHS OF REHABILITATION AFTER BEING CAUGHT IN A POACHERS' SNARE, A FEMALE SUMATRAN TIGER NAMED CORINA WAS RELEASED FROM CAPTIVITY BACK TO THE FOREST IN RER.

This was the culmination of concerted efforts led by the Ministry of Environment and Forestry to return her to her habitat on the Kampar Peninsula.

Corina's story in RER began in March 2020 when she was found injured and snared in a community plantation on the Peninsula. She was rescued and brought to the Dharmasraya Sumatran Tiger Rehabilitation Centre (PR-HSD) by the Riau Nature Conservation Agency (Balai Besar Konservasi Sumber Daya Alam Riau—BBKSDA Riau). During her rehabilitation, Corina was able to recover her wild instincts and was deemed by experts to be ready for release.

3.

CORINA RETURNS TO THE WILD

After consultation with several conservation NGOs including Forum Harimau Kita, the SINTAS Foundation, Fauna & Flora and the Zoological Society of London, RER developed an action plan to prepare for Corina's release. After reviewing several proposed release sites based on factors including ease of access, distance from human settlement and prey availability, BBKSDA Riau and RER agreed on a location inside RER and began preparations for the release.

In a rarely used procedure, the plan involved the attachment of a GPS/VHF transmitter collar to Corina to understand her movements following release. In December 2020, Corina was transported by helicopter from PR-HSD in West Sumatra to the release site in the Kampar Peninsula. The short journey of about one hour did not require the use of anaesthetics, minimizing health risks to the tiger.

Corina was officially released back to the Kampar Peninsula on 20 December 2020, under the supervision of the Director General of Conservation of Natural Resources and Ecosystems, Ministry of Forestry and Environment. After her release, Corina was successfully tracked using the GPS collar for five months. In June 2022, the team received new information on her whereabouts through camera trap footage.

The return of Corina marked a significant step towards supporting the conservation of Sumatran tigers and showed how public and private sector organisations can collaborate on successful biodiversity-related initiatives. Every individual member of this critically endangered species is of value, especially a female that can produce cubs.

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1. Leading the Corina release, Ir. Wiratno, Director of General of Nature Resources and Ecosystem Conservation, Ministry of Environment and Forestry (wearing the blue hat) together with APRIL and RER Management.
2. Attaching GPS collar to Corina's neck.
3. Corina in her habituation cage.
4. RER stakeholders at the Serkap River.

ENGAGING STAKEHOLDERS TO MONITOR AND PROTECT BIODIVERSITY

IN RECENT YEARS, IN ADDITION TO RER'S WORK WITH FAUNA & FLORA, RER TEAMS ARE COLLABORATING WITH A RANGE OF OTHER GROUPS ON BIODIVERSITY INITIATIVES.

These groups include: Tropenbos Indonesia, the Wildlife Conservation Society (WCS), Perkumpulan Jejaring Hutan Satwa (PJHS—Forest Wildlife Society), University of Kent, National University of Singapore (NUS), Gajah Mada University, the SINTAS Foundation, and Dr. Rory Dow from the Naturalis Biodiversity Centre in the Netherlands.

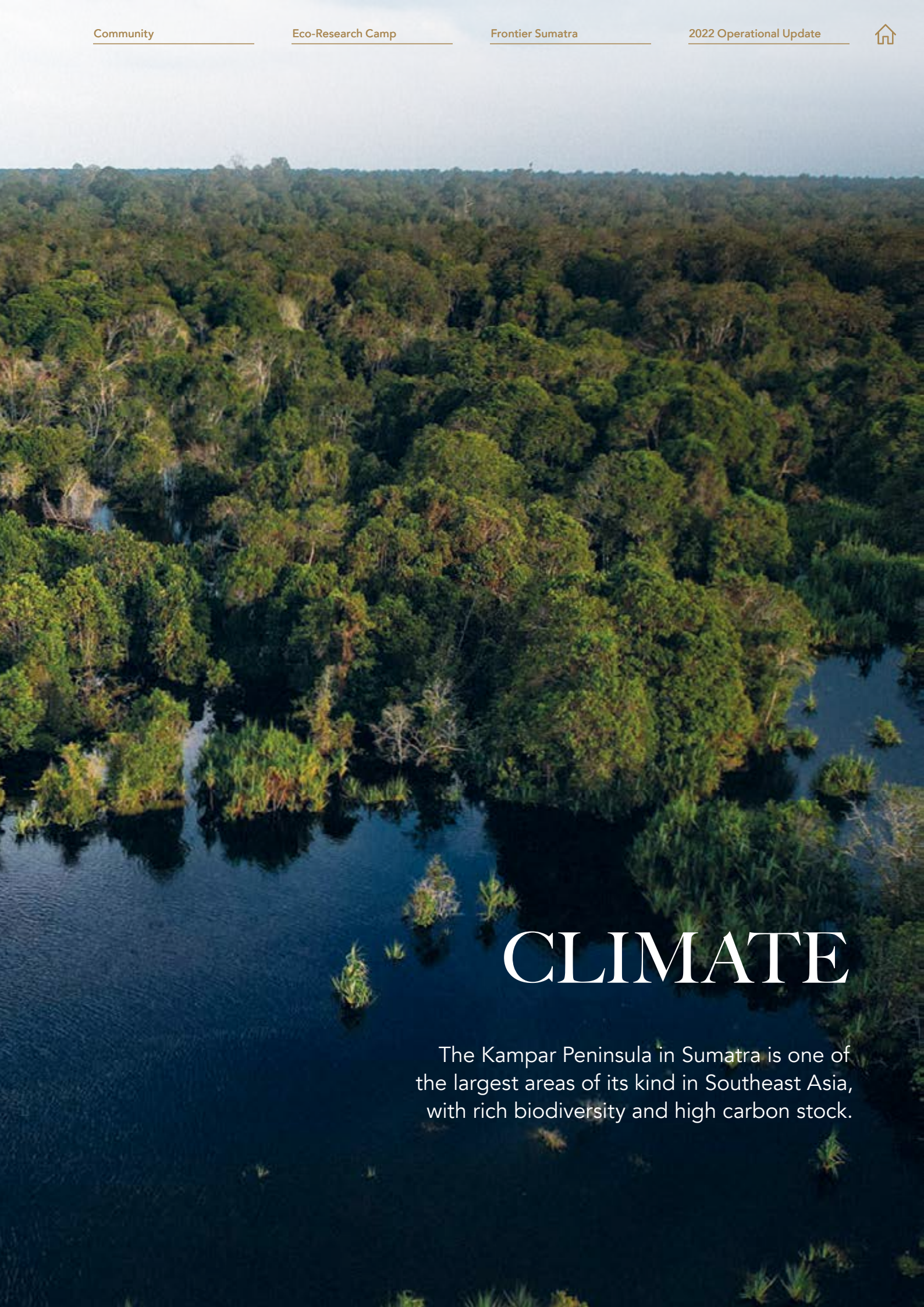
RER also works with the Riau Nature Conservation Agency, the local authority for conservation in Riau Province, and reports on all of its biodiversity-related programmes to the Ministry of Environment and Forestry.

RER works with Tropenbos Indonesia to assess the community livelihood needs of the Serapung and Segamai villages on the Kampar Peninsula and to identify potential risks that may affect the landscape. With WCS, RER is devising a strategy to address illegal wildlife trade, which has been one of the biggest challenges to preserving biodiversity in RER.

RER's collaborations with scientists and academics focus on biodiversity in RER and deployment of nature-based solutions. For example, RER works with Dr. Rory Dow to help expand knowledge of odonata species in RER, while its partnership with the University of Kent has been set up to understand mammal distribution on the Kampar Peninsula and to assess progress since the last baseline survey in 2015. With NUS, RER is supporting the university's work to develop technology-driven approaches to enhance the credibility and integrity of nature-based solutions.

4.

RER continues to monitor biodiversity through the Asian Waterbird Census and migratory raptor monitoring and is working with local communities to ensure their traditional access to rivers, supporting their non-forest timber products, and sustainable agriculture to increase their economic and social welfare, while mitigating impact on biodiversity.



CLIMATE

The Kampar Peninsula in Sumatra is one of the largest areas of its kind in Southeast Asia, with rich biodiversity and high carbon stock.

RESTORING THE FOREST AFTER YEARS OF DEGRADATION

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FROM THE 1970s UP TO THE LAUNCH OF RER, THE PEAT FORESTS THAT ARE TODAY PART OF THE ECOSYSTEM RESTORATION CONCESSIONS HAD BEEN DEGRADED BY YEARS OF COMMERCIAL AND ILLEGAL LOGGING, DRAINAGE CANALS THAT HAD LOWERED THE PEAT WATER TABLE, AND UNCONTROLLED FIRES THAT HAD BEEN USED TO SUPPORT LAND CLEARING FOR AGRICULTURE.

On the establishment of RER in 2013, bespoke forest protection and restoration systems were set up to limit future human disturbance and to repair the forest degradation that occurred over the previous decades. RER teams constructed guard posts at the primary access corridors in the forest, recruited rangers from local communities, and began working with forest users and local fisherman to ensure that increasingly sustainable livelihood practices were adopted.

RER teams collaborated with Fauna & Flora to conduct baseline assessments for biodiversity, carbon stock, as well as social and livelihood status of local communities. Based on these assessments, gaps were identified that acted as starting points for monitoring progress.

In the past ten years, RER has focused on actively restoring the most highly degraded forest areas through advanced forest and water management practices.

ACTIVE REGENERATION

THE MAJORITY OF THE PEAT FOREST CAN BE RESTORED BY PROTECTING THE FOREST FROM HUMAN-CAUSED DISTURBANCES AND ALLOWING NATURAL REGENERATION OF FOREST TREES TO OCCUR THROUGH SEED DISPERSAL.

This technique, although requiring more time to see results, is more cost efficient and effective than transplanting trees to locations where dense shade and numerous seed sources already exist.

RER applies 'active regeneration' to approximately 1% of the forest where intensive logging, drainage and multiple forest fires had occurred prior to 2013. At these sites, natural seedlings are collected from the surrounding forest, tended in tree nurseries by the RER team and then transplanted to the site to accelerate the natural tree regeneration that is occurring.

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Many years of maintenance to control competing weeds are required until the seedlings achieve a height where they can cast shade and minimise weed growth.

1. RER forests.
2. RER team measuring our tree growth in one of our seven native tree nurseries.
3. RER team carrying a batch of native tree seedlings.
4. Critically-endangered Light red meranti *(Shorea platycarpa)* seedlings in RER native tree nurseries.

REWETTING THE PEATLAND

HYDROLOGY MANAGEMENT INVOLVES MAINTAINING PEAT SOIL MOISTURE BY CONSTRUCTING DAMS TO BLOCK WATER FLOWING FROM THE OLD DRAINAGE CANALS THAT REMAIN IN THE FOREST FROM PAST LOGGING OPERATIONS.

Tropical peat soil is one of the largest carbon stores in the world, but only when it remains wet. This is why a key focus for the RER team is protecting and restoring the peat soils by keeping the peat wet, and monitoring GHG emissions.

Peat soil consists of 80% water and 20% organic solids by volume and depends on rainfall to remain wet. Peat soil water levels fluctuate with seasonal variations in rainfall. Drainage canals accelerate peat drying by lowering the water table, causing oxidation and subsidence, increasing the fire hazard, and releasing carbon into the atmosphere.

To avoid the release of GHGs from the peat, sandbag dams placed at 40 centimetre gradients block canals. The sandbags weigh 25–30 kilograms and each dam requires 150–200 sandbags to be transported up to 50 kilometres into the forest by field teams. RER has accomplished 80% of its goal by installing 112 dams to close 36 canals measuring 179 kilometres in length as part of an effort to 're-wet' 11,000 hectares of forest.

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1. Filling the sandbags before using them to close up canals.
2. Locking the sandbags after filling them with a combination of sand and rocks.
3. Installing sandbags to block the canals.

PEAT FORMATION

THE PEAT SOILS IN THE RER AREA FORMED DURING THE LAST 5,100 YEARS ABOVE MARINE CLAY WHERE ANCIENT MANGROVE FORESTS ONCE FLOURISHED.

As sea levels decreased, peat was formed as coastal forests replaced the receding mangroves, depositing organic material that accumulated at various rates depending upon changes in rainfall over the millennia.

Peat accumulation rates were highest (2.2 millimetre/year) at 4800–5100 years BP, continued (1.6–1.7 millimetre/year) during a dry period with evidence of periodic fire (1800–4200 years BP), and then stabilized (1.8–2.2 millimetre/year) again in the past 1800 years BP.

Human influence in Riau's peatlands has mainly become evident over the past century. Climate change is increasing global temperatures and sea levels. The effects of climate change on peat forests and peat accumulation rates remain unclear but demonstrate that science-based forest management and restoration is necessary to optimise peat forest conservation and provide for human needs from peatlands.

K. Anggi Hapsari et al. (2022). Sea level rise and climate change acting as interactive stressors on development and dynamics of tropical peatlands in coastal Sumatra and South Borneo since the Last Glacial Maximum.

PROTECTING THE LANDSCAPE FROM FIRE

THERE ARE TWO DRY PERIODS IN RIAU EACH YEAR, BUT THEY CAN VARY IN THEIR INTENSITY AND DURATION DEPENDING ON REGIONAL AND GLOBAL WEATHER PATTERNS.

The first dry season occurs from late-January to mid-March and the second from June to September. The wet seasons occur from October to mid-January and again in April and May. It is during these dry periods when vegetation may become susceptible to fire ignition.

To anticipate the threat of fire, RER's fire management program focuses on prevention, preparedness and rapid response. Since 2014, the RER areas on the Kampar Peninsula have recorded zero fire incidents despite very dry El Nino Southern Oscillation (ENSO) events in 2015 and 2019.

The production-protection approach effectively separates the forest from threats such as illegal logging, forest encroachment and land-clearing fires. In particular,

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fire use by humans is not a threat within the RER area because there is no land clearing or forest conversion occurring. There have been no recorded incidents of natural fire ignition in RER because rainfall and moist peat soils largely prevent this from occurring.

To prevent human-caused fires, the RER team conduct annual hazard risk assessments identifying potential locations and sources of fire, hold fire awareness training sessions with local communities, and calculate daily Fire Danger Ratings (FDR), showing these updates on information signboards. The teams also conduct forest patrols to directly inform forest users and fishermen of current fire hazards. Unmanned drones are also used to survey the most remote areas for signs of smoke or fire.

The FDR describes the probability of a fire to ignite, spread and require suppression action. Fire danger is assessed by monitoring rainfall, humidity and fuel conditions once a day and a combined index value is calculated for the next 24-hours.

Eight weather stations on the Kampar Peninsula and four weather stations on Padang Island provide data to assess the daily FDR that is described as Low, Medium, High or Extreme. RER's patrol teams intensify their patrol efforts when the FDR is High or Extreme.

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The variables that most affect the probability of fires in dry vegetation are the total rainfall in the past 15-days, the number of days since the last rainfall and activities by individuals to clear forest land to establish a cash crop.

To prepare for the dry season, RER teams use a variety of specialised high-pressure water pumps and hose and hand tools to extinguish fires. Firefighter team training, competitions and equipment testing occur throughout the year to ensure fire preparedness. Rapid response is achieved through early detection of smoke and fire from ground and aerial patrols as well as remotely sensed 'hotspots'; effective communications via two-way radios and hand phones; and having high mobility using 4WD vehicles, motorcycles, river boats and a helicopter.

1. Preparing a hose for the RER team's fire training.
2. RER fire prevention equipment maintenance.
3. Fire training.

ADVANCING CLIMATE SCIENCE

COMPARED TO TROPICAL FORESTS ON MINERAL SOIL, THERE HAS BEEN LITTLE RESEARCH ON THE HYDROLOGY, ECOLOGY, BIODIVERSITY AND EFFECTS OF CLIMATE CHANGE ON PEAT SWAMP FORESTS MANAGED AS PART OF A HUMAN-MODIFIED LANDSCAPE. IN COMBINATION WITH PRODUCTION FIBRE PLANTATIONS.

1.

APRIL peat scientists in collaboration with university researchers from Indonesia and internationally recently published the results of a 5-year study comparing the GHG emissions from *Acacia crassicarpa* plantation, degraded forest and intact forest within the Kampar Peninsula.

In the area monitored, the results found that acacia plantations had lower GHG emissions than degraded peat forest, and that plantation emissions were two times higher than GHG emissions from an intact peat forest, but only half of the current International Panel on Climate Change (IPCC) Tier 1 emission factor estimates for peatlands. The results of this study remove the uncertainty of GHG emission estimates for this specific landscape and contribute to developing improved peatland management practices.

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3.

In 2021, an RER carbon project on the Kampar Peninsula was validated and registered as one of the world's largest carbon emission avoidance projects with an estimated total avoided emission of more than 373 million tonnes of CO_2e during the 57 year project lifetime. The quantification and verification of RER's carbon avoidance potential will contribute to the Government of Indonesia's National Determined Contribution and climate mitigation agenda.

1. A member of APRIL's greenhouse gas science team maintaining the sensors of the GHG flux tower in RER.
2. GHG flux tower in RER intact forest.
3. Peat core sampling.

COMMUNITY

Community participation and sustainable economic activity is a vital aspect of environmental and biodiversity conservation on the Kampar Peninsula and Padang Island.

EMPOWERING LOCAL COMMUNITIES

BEFORE RER WAS ESTABLISHED, THE AREA HAD EXPERIENCED DECADES OF DEGRADATION THROUGH COMMERCIAL AND ILLEGAL LOGGING BY PRIVATE BUSINESSES AND LOCAL COMMUNITIES.

During this time, trees were harvested from the area and networks of canals were built to provide access to locations deep within the peat forest for transporting logs. For years, the drainage canals reduced water levels, drying out the peat and increasing the risk of fire.

Today, RER seeks to support and empower local communities to reduce the drivers of deforestation in the area.

More than 40,000 people live around the RER concession areas—about 17,000 on the Kampar Peninsula and 24,000 on Padang Island.

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RER teams invest considerable time and resources in working with local communities to ensure that traditional activities such as fishing and gathering of honey are protected, small businesses are supported, and that people are informed about the importance of the environment and biodiversity conservation.

In particular, RER teams also focus on education so that members of the community understand the importance of the environment and biodiversity conservation and restoration. To ensure the long-term sustainability of the project, it is necessary to demonstrate how conservation of the forest can in fact create economic and social benefits for local communities.

1. RER Teams work with communities which use the RER river area.
2. RER community development programme.

LIVING FROM THE RIVER

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1. Fishermen with Ikan salai or smoked fish caught in the Serkap River.
2. Fishermen in Tasik Tengah, RER.

2.

THERE ARE FOUR MAIN RIVERS ON THE KAMPAR PENINSULA — THE KUTUP, TURIP, SERKAP AND SANGAR RIVERS — WHICH EXTEND BETWEEN 20 AND 30 KILOMETRES INTO THE PENINSULA'S CENTRAL CORE PEAT DOME.

These rivers are traditional 'highways of life' containing an abundant variety of fish, as well as supporting a diverse population of trees, orchids, birds, mammals and other wildlife.

Ensuring continued community access to these rivers for fishing, transport and other livelihood activities is important to maintaining traditional cultural practices and human well-being in the area.

Before the RER was established, local fishermen who had traditionally fished on the Serkap River — which runs through the RER concession areas — had been known to use unsustainable fishing practices, such as poison or electro-fishing, posing risks to

healthy aquatic life in the river. Similarly, to establish easier access to the river, fishermen sometimes burned the vegetation on the riverside, causing forest degradation and damaging natural ecosystems.

Today, RER works closely with the local Serkap River fishing community group—known as Serkap Jaya Lestari—to ensure access to fisheries and encourage traditional sustainable fishing practices, with the aim of helping community members improve their livelihoods in harmony with the protection and restoration of the forest.

A collaboration agreement was established in December 2016 to help coordinate on a range of issues, including fishing rights, maintaining and improving fish habitats and catches, reporting of fish harvests and sustainable fishing practices. Since the agreement, catches and incomes have improved.

In October 2021, RER hosted a community fishery training session at its Eco-Research Camp attended by communities from five villages surrounding RER. The two-day training session was led by University of Riau experts, who advised on topics including fish processing, the importance of fish restocking, how to improve fish products' shelf-lives, and reducing fish losses during processing.

For example, most fishermen sell their fish fresh or smoked (or 'salai'). So, the training covered how to process catch into fish balls, fish nuggets, fish skins and various kinds of fishcakes to generate additional value.

SERKAP JAYA LESTARI

SEVERAL MEMBERS OF THE SERKAP JAYA LESTARI GROUP ARE FROM FAMILIES THAT HAVE DEPENDED ON THE RER RIVERS FOR GENERATIONS.

Headed by Mr. Bahtiar, this group has sought to pass down sustainable fishing method to the next generation. Currently, there are 27 fishermen who are members of the group.

Apart from providing education on sustainable fishing practices, RER teams also provide support for equipment management and maintenance. When some of the fishermen's huts were not in good condition, RER provided material support, such as wood and tarpaulins and helped with renovations.

In addition, RER provided solar panels for the huts, so the fishermen no longer need to use kerosene-based lamps at night. RER also helps provide fishing nets and fish cages to maintain and cultivate fish, and life jackets.

1. Female fisher in RER.
2. Sustainable fishing practices by local fishermen.

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"THE RER HAS EDUCATED US AGAINST UNSUSTAINABLE WAYS OF FISHING. WITH RESPONSIBLE FISHING METHODS, WE ONLY CATCH FISH THAT FIT THE MARKET STANDARD, SO THAT THE SUSTAINABILITY OF OTHER FISH IS MAINTAINED. THE RER TEAMS ALSO SUPPORT US WITH FISHING EQUIPMENT, AND SOLAR PANELS TO AVOID USING FOSSIL FUEL-BASED LAMPS. IT WAS HARD AT THE BEGINNING BUT WE CAN SEE THE RESULTS NOW."

BAHTIAR

CHAIR, SERKAP JAYA LESTARI

GROWING WITH THE COMMUNITY

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THE RER TEAMS ALSO COOPERATE CLOSELY WITH VILLAGERS FROM SANGAR SUB-VILLAGE AND SEGAMAI VILLAGE ON THE KAMPAR PENINSULA, AND FROM FOUR VILLAGES ON PADANG ISLAND, TO SUPPORT THE USE OF NO-BURN VEGETABLE FARMING.

The programme was set up to reduce the use of slash and burn farming practices, which have been used for decades, and to provide the communities with alternative methods of land preparation that will produce valuable food crops.

The communities are provided with seedlings of mainly vegetable crops, such as red and green chili, red ginger, eggplant, tomato, cayenne and green beans, together with equipment and supplies like hand tools and fertilizers. Field schools are organized regularly to discuss problems and improve techniques for crop productivity.

By 2017, in Sangar sub-village, where the programme is delivered by RER partner BIDARA, 3.5 hectares of land had been cultivated with a variety of vegetable crops.

1. Chili harvesting by our farmer community partner.
2. RER forest ranger checking fishermen activity in Serkap River.
3. Chili farmer activities in Dusun Sangar.
4. RER forest honey.

On Padang Island, RER also works with NGO Laskar Alam to assist farming groups in the four villages with demonstration plots for horticulture. Each group of farmers currently manages the planting and harvesting of chili, cayenne peppers and tomatoes.

In 2018, RER supported eight community groups covering 16 hectares to create no-burn vegetable farms. Harvests for the 2018 planting year generated approximately US$39,745 from an initial investment of US$8,400 by RER. On Padang Island, RER piloted a catfish aquaculture programme and trained the villagers on aquaculture techniques. The first fish harvest in September 2018 generated US$7,350 in additional income for the community.

Besides farming, RER also supports local honey harvesters from the Kampar Peninsula and Padang Island. Most of the honey harvesters are ethnic Melayu people with long-standing ties to the peat forest landscapes of Riau. For generations, they have harvested honey in traditional ways by

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free climbing giant forest trees known as Sialang *(Kompassia excels)* to collect honey for their own use, and to sell or trade to others in their community.

The Sialang tree grows in lowland tropical rainforests near the Equator in Southeast Asia. Its base can exceed two metres in diameter, and it is the tallest tree species in the forest, often reaching a height of 80 metres. Local communities regard the Sialang trees as a protected species and collection of Sialang honey is a long-standing tradition that involves significant skill and bravery.

Riau Forest Honey is the natural honey traditionally collected from the lowland tropical rainforest. Since 2017, RER has assisted the honey harvesters and the communities in which they live by purchasing honey, helping to market and sell the product as Madu Hutan Riau, and returning the profits back to the community in the form of projects or infrastructure.

WOMEN'S GROUPS

IN 2019, 20 MEMBERS OF A WOMEN'S EMPOWERMENT GROUP IN SEGAMAI VILLAGE BEGAN USING COCONUT TO CREATE VARIOUS PRODUCTS, SUCH AS COOKIES, SOAP, WAX AND OIL. HOWEVER, IN 2022, THEY AGREED TO INNOVATE BY FORMING A SNACK BUSINESS TO INCREASE REVENUE.

Now, the group produces a cookie called Simping Kunyit, which is made from rice flour, tapioca and turmeric leaves, as well as turmeric simping cakes, coconut chips and preserves, sweet potato crèmes, cassava chips and banana chips. Previously, there were limitations due to equipment shortages, but RER teams provided frying, boiling and steaming appliances, blenders, electric sealers and other related products.

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NO-BURN FARMING

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1. Two women under the family welfare group (PKK/Pemberdayaan Kesejahteraan Keluarga) working on new fish processing products.
2. Diversification of fish processing products: fish balls, fish nuggets and various kind of fishcakes.
3. No-Burn Farming approach by local farmer.

ON PADANG ISLAND, RER TOGETHER WITH COMMUNITY NGO, LASKAR ALAM, COLLABORATES WITH LOCAL FARMERS AND YOUTH GROUPS TO DEVELOP AGROFORESTRY DEMONSTRATION PLOTS, WITH A FOCUS ON INCREASING AGRICULTURAL YIELD IN A LIMITED LAND AREA SUSTAINABLY. THESE DEMONSTRATION PLOTS USE INTERCROPPING METHODS THAT COMBINE BETEL NUT, RUBBER AND PINEAPPLE.

Training sessions are held on no-burn farming. Many farmers are well aware of the consequences of open burning but lack the tools and knowledge to adopt alternative practices. These no-burn methods have the potential to reduce carbon emissions while simultaneously providing economic and social benefits for farmers.

COLLABORATION WITH HUTAN DESA SEGAMAI

THE FORESTS AROUND SEGAMAI AND SERAPUNG VILLAGES ARE LOCATED ON A STRETCH OF THE KAMPAR PENINSULA, ON THE EDGE OF THE MALACCA STRAIT.

In 2018, illegal logging activities in these forests were getting worse. Open encroachment in the forests was commonplace, with felled logs being floated out of the areas through canals.

The Segamai village forest is flanked by two companies. One of these is PT. Gemilang Citra Nusantara (GCN), one of the entities which holds an RER ecosystem restoration license. The forests in the PT. GCN area are left undisturbed to regenerate naturally. In 2023, RER and the local authority in Segamai Village signed a cooperation agreement to strengthen governance and protection of the forests around the village.

Through the contract, the agreed cooperation area is the Izin Hak Pengelolaan Hutan Desa Segamai, in accordance with the Decree of the Minister of Environment and Forestry Republic of Indonesia Number: 1012/Menlhk-PSKL/PKPS/PSL.0/3/2017 dated 10 March 2017. This covers an area of about 2,270 hectares.

RER and the Segamai Village authorities also agreed to further protection and security for the forest area, which will include the building of guard posts and watchtowers, the installation of warning and information boards, forest area security patrols and canal closures. Through this collaboration, RER hopes to restore the condition of the Segamai Village Forest, in line with the goals of the Indonesian Government.

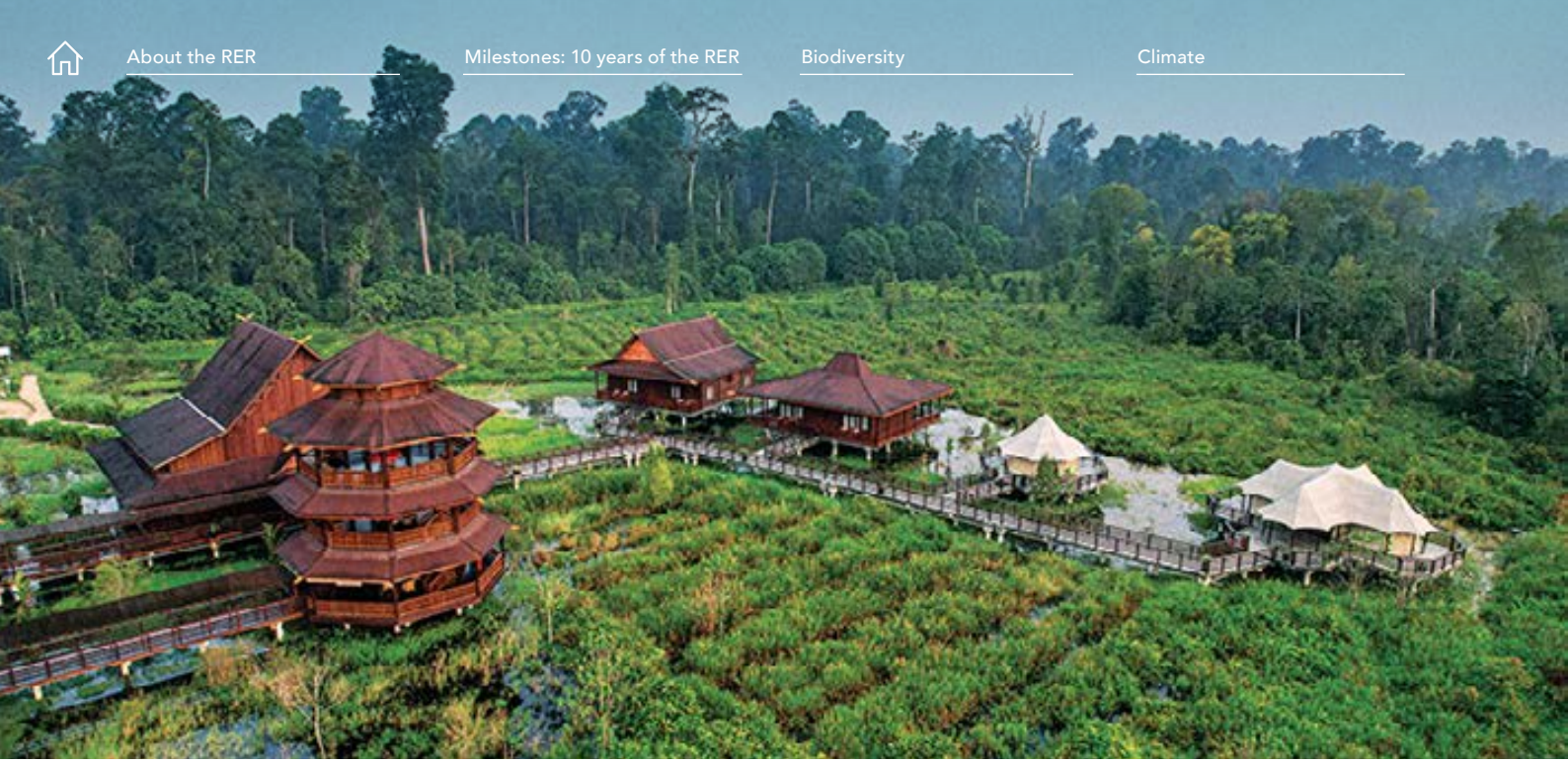
"BIDARA AND RER HAVE THE SAME VISION AND MISSION IN SUPPORTING AND INCREASING THE CAPACITY OF COMMUNITIES IN TWO AREAS OF THE KAMPAR PENINSULA — SEGAMAI VILLAGE AND RW 08 PULAU MUDA VILLAGE. THROUGH THE ECO-VILLAGE DEVELOPMENT FOR RESTORASI EKOSISTEM RIAU INITIATIVE, WE HOPE THAT THE COMMUNITIES WILL BECOME MORE EMPOWERED AND PLAY AN ACTIVE ROLE IN IMPROVING THEIR WELFARE. ONLY THROUGH COLLABORATION AND COOPERATION BETWEEN RELATED STAKEHOLDERS CAN WE ACHIEVE OUR PURPOSE, WHICH IS TO IMPROVE THE WELFARE OF THE COMMUNITY THROUGH A SUSTAINABLE WAY OF LIVING."

AHMAD FAHRUDIN

EXECUTIVE DIRECTOR, BIDARA

ECO-RESEARCH CAMP

A tropical peatland science hub to support researchers and scientists wishing to experience and study important peatland ecosystems and to act as an operational base for RER teams.



1.

LOCATED 140 KILOMETRES FROM SINGAPORE IN A REMOTE AREA ON THE EAST COAST OF SUMATRA, THE RER ECO-RESEARCH CAMP HAS BEEN SET UP AS A DEDICATED FACILITY TO HELP RESEARCHERS, SCIENTISTS AND VISITING STAKEHOLDERS TO EXPERIENCE RER FIRSTHAND AND UNDERTAKE STUDIES OF THE LANDSCAPE.

The Camp is based on a 32 hectares site in a commercial forest concession managed by APRIL Group, adjacent to the natural forest in the RER area. The buildings and facilities take up 12 hectares while the remaining 20 hectares is comprised of forest.

The location at the heart of the Kampar Peninsula provides strategic access to RER restoration activities on the ground, which helps visitors to better understand the challenges of managing a forest restoration landscape which is about twice the size of Singapore.

Construction began in 2017 and took four years to complete. The process included the preparation of the land for construction, the securing of equipment and building materials suitable for the peatland landscape and the finalization of the required facilities. Access was a major barrier to overcome as the site is about five hours by road from the nearest major city, Pekanbaru.

The peat lab at the Eco-Research Camp includes basic tools and apparatus to support researchers in their study. However, the facility also provides accommodation for field teams who sometimes spend long periods in the forests in the RER concession areas. The Camp can accommodate up to 50 employees, and groups of up to 19 visitors.

Through the Eco-Research Camp, RER works with advisers, technical experts, communities and other related groups to develop new solutions to manage forest landscapes, protect and conserve biodiversity and mitigate climate change, in line with the Indonesian Government's climate and development targets.

2.

THE VISITOR EXPERIENCE

TO DATE, HUNDREDS OF VISITORS FROM NATIONAL AND INTERNATIONAL INSTITUTIONS HAVE EXPERIENCED THE ECO-RESEARCH CAMP.

Visitors can directly experience the environment within what is one of the largest intact tropical peatland forests on the island of Sumatra and in the wider region.

While onsite, visitors can find out more about RER's ecosystem restoration activities, including the use of camera traps used to monitor wildlife, bird monitoring, the role of native tree nurseries to grow and nurture native tree seedlings which in turn support restoration planting, and the functioning of the greenhouse gas (GHG) flux tower.

The GHG flux tower is one of four towers operated by APRIL's scientists to gather data on the exchange of greenhouse gases across forest landscapes.

Visitors can also observe a variety of animals and plant species through the observation tower at the Camp by using a spotting scope. This tower has a 360 degree viewing angle to support observation activities. Not far from the Camp, visitors can enjoy the forest atmosphere on the 1.1 kilometres trail that connects the facility to the Serkap River.

4.

1. Eco-Research Camp complex.
2. Eco-Research Camp during construction in 2020.
3. Researchers and scientists can use the lab facilities at Eco Camp for research in the field.
4. GHG flux tower located in RER intact forest.

3.

RESEARCH BASE

Ongoing research is required to inform strategy development and management operations for ecosystem restoration. In the short time since it was set up, the Eco Camp has already been used as a base for a number of studies including the odonata survey, which identified 71 species in the RER area, and the mammal distribution research done by a team from Kent University. The Eco Camp also acted as a research base for a team from the University of British Columbia for a study on fisheries on the Serkap River.

FRONTIER SUMATRA

This documentary tells the incredible story of the people, the animals and the land of Kampar Peninsula in Riau Province, and the important work of the RER project.

1.

FIRST SCREENED ON DISCOVERY ASIA IN 2021, FRONTIER SUMATRA IS A 52-MINUTE DOCUMENTARY THAT TELLS THE STORY OF THE RER RANGERS AND TEAM MEMBERS THAT PROTECT THE FOREST AND WILDLIFE IN RER AND THE COMMUNITIES THAT RELY ON THE LANDSCAPE FOR THEIR DAY-TO-DAY LIVELIHOODS.

Produced by Singapore-based production company Beach House Pictures, the documentary highlights the key priorities and challenges for the RER teams, including combating illegal poaching, protecting the landscape from fire, monitoring of new and existing biodiversity species, and ongoing engagement with local communities.

The documentary includes footage of the rescue of the female tiger, prior to her rehabilitation and release, and shows rangers removing traps placed by poachers in the trees to illegally capture songbirds. In another segment, RER ecologists describe their painstaking work to restore sections of the forest through natural regeneration.

Ultimately, Frontier Sumatra was created to deliver the message that a pulp and paper company can not only produce from the landscape, but also protect it, working in partnership with scientists, conservationists, local communities and the Indonesian Government. It also shows what needs to be done to protect and preserve one of the last great peat forests in South East Asia for future generations.

BEHIND THE SCENES

2.

3.

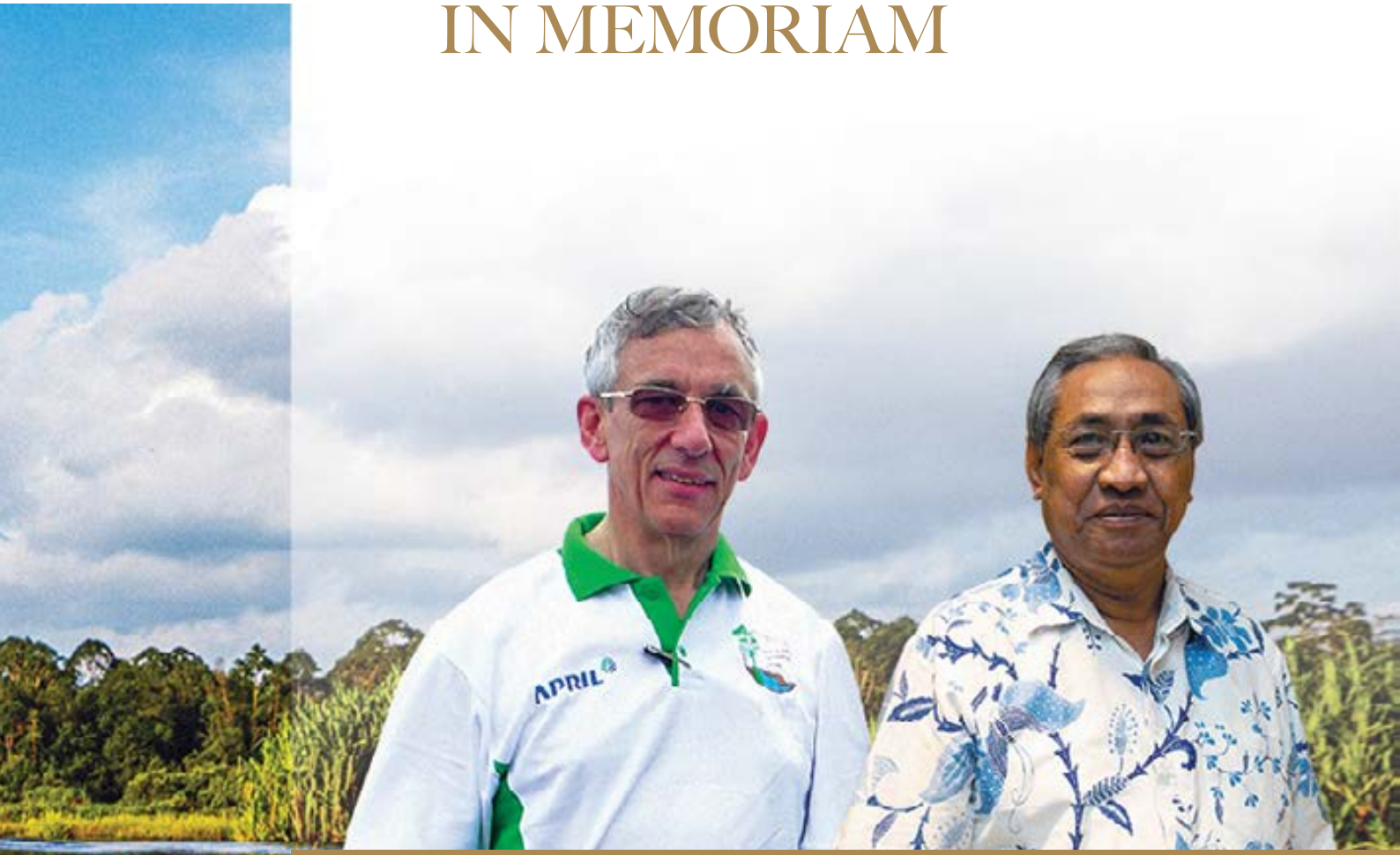
4.

5.

1. Collecting the native tree seedlings from the forest.
2. RER landscape filming using drone.
3. Shooting the RER and Fauna & Flora teams discussing the results of the PT. GAN survey.
4. Filming the bird-trap scene.
5. Principal Photographer, Tim Deagle shooting the footage for the PT. GAN survey.

A view of the Tasik Tengah area, part of the RER landscape.

IN MEMORIAM



DR. TONY WHITTEN

NASIHIN HASAN

OVER THE LAST DECADE, RER HAS BENEFITED FROM ADVICE AND GUIDANCE PROVIDED BY TWO REMARKABLE ADVISORS, WHO HAVE SADLY PASSED AWAY.

In January 2022, one of the advisory board members, Nasihin Hasan, passed away. As the founder of BIDARA, Pak Nasihin played an integral role in RER from the earliest years of the programme. His leadership and oversight were key to the success of RER and the achievement of the programme's goals over the years.

Another huge loss occurred in 2017 when Dr. Tony Whitten died following a cycling accident in the UK. Over the course of a remarkable career, of which a decade was spent in Indonesia, he authored numerous ground-breaking books on the ecology of the region, was a senior biodiversity specialist at the World Bank, and served as senior advisor and regional director for Asia-Pacific at Fauna & Flora.

In this latter role, Dr. Whitten and his Fauna & Flora team worked with RER from the outset of the programme in 2013 to establish baselines for biodiversity, carbon and community engagement. Under his practical field knowledge, the Fauna & Flora team provided advice on strategies to ensure the long-term protection and management of the area.

2022 OPERATIONAL UPDATE

IN 2022, RER SAW CONTINUED PROGRESS IN A NUMBER OF KEY AREAS, AFTER OVERCOMING THE CHALLENGES POSED BY THE COVID-19 PANDEMIC.

There was a further increase in the number of identified plant and animal species in RER, as well as continued research into the area's biodiversity, which took place in parallel with ongoing forest and hydrological restoration work.

RER teams also increased their engagement with local communities and external stakeholders, as part of efforts to boost the welfare of communities and to contribute to the body of knowledge on forest protection and restoration, respectively.

BIODIVERSITY

In 2022, RER field teams used camera traps, bird monitoring, and flora surveys to collect information on plant and animal species. Through these activities, a total of 846 plant and animal species have now been identified in RER, an increase of eight from the 2021 data. The eight new species that have been successfully recorded include Shikra, Cinnamon-rumped trogon, Black-and-white bulbul, Puff-backed bulbul, Plain flowerpecker, Malaysian blue-banded kingfisher, *Hanguana cf. neglecta* and *Syngramma alismifolia*.

Taxa	Total	IUCN			Convention on International Trade in Endangered Species (CITES)	Government of Indonesia
		CR	EN	VU		
Mammals	78	3	9	9	26	18
Amphibians & Reptiles	106	3	3	3	19	5
Birds	317	2	6	17	46	78
Plants	198	3	1	5	27	0
Fish	89	2	1	2	0	0
Odonata	58	0	2	1	0	0
Total	846	13	22	37	118	101

Plant and animal species recorded in RER in 2022

During 2022, the camera traps captured 3,647 nights of biodiversity activity on the Kampar Peninsula and Padang Island.

No.	Survey	Period	Highlights
1.	Asian Waterbird Census	Jan–Feb 2022	159 birds were observed representing 9 species. During the census, one of the unique species seen was Mentok Rimba.
2.	Migratory Raptor Monitoring	Mar–Sep 2022	189 raptors were observed representing 9 species, where the Shikra eagle *(Accipiter badius)* was first seen.
3.	Edge Effect Study	Sep–Dec 2022	A total of 16 kilometres of transects were completed with a total of 60 species observed including 51 species in natural forest areas.
4.	Corina Area and Territory Survey (next phase)	Dec 2022	Data was recorded by 10 camera traps during a total of 245 camera nights in APRIL's plantation area. This survey will be continued until 2023. So far, 13 types of wild animals have been recorded.
5.	Padang Island Camera Trap	Aug 2022	6 types of wild animals were recorded, including the Sunda pangolin, with a total of 1,237 camera nights captured.
6.	Mammals Survey— Kent University PhD Student Research (Irene Margareth Pinondang)	Nov 2021–Dec 2022	61 species were recorded, including the Sumatran tiger, during a total of 18,046 camera nights.

RER biodiversity surveys in 2022

WHERE'S CORINA?

THE FEMALE SUMATRAN TIGER, CORINA, WAS OFFICIALLY RELEASED BACK TO HER HOME IN THE KAMPAR PENINSULA IN DECEMBER 2020, FOLLOWING CLOSE COLLABORATION WITH A RANGE OF STAKEHOLDERS, INCLUDING THE MINISTRY OF FORESTRY AND ENVIRONMENT OF INDONESIA, RIAU NATURE CONSERVATION AGENCY (BALAI BESAR KONSERVASI SUMBER DAYA ALAM RIAU-BBKSDA RIAU), DHARMASRAYA SUMATRAN TIGER REHABILITATION CENTER (PR-HSD), FORUM HARIMAU KITA, YAYASAN SINTAS, FAUNA & FLORA AND THE ZOOLOGICAL SOCIETY OF LONDON.

Following a prolonged period with limited contact, a visual sighting of Corina was obtained from the PT. RAPP Environment Department's camera traps on September 29, 2022. The footage captured in the video showed that the tiger was healthy and active. This followed work by the RER teams to carry out a survey of the area close to the tiger's last known location using antenna and radio receiver equipment.

The RER team has begun work on a tiger database for the Kampar Peninsula, where individual tigers can be identified using camera trap photos from side and front positions. This will help improve understanding of the total tiger population and of how tigers can use human-modified, production-protection landscapes to survive and thrive.

LANDSCAPE MANAGEMENT

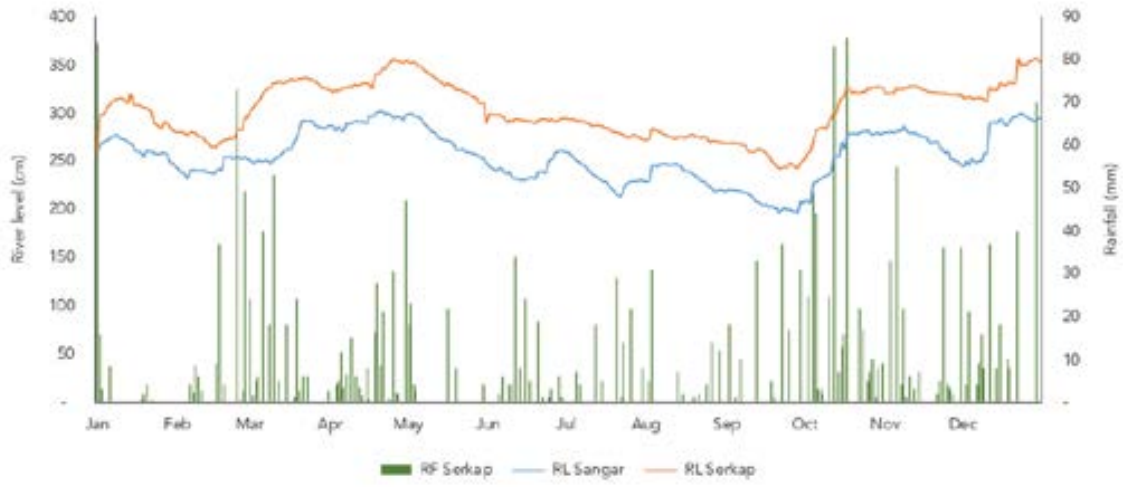
The landscapes in the RER area on the Kampar Peninsula and Padang Island are mostly composed of moist and warm tropical peat swamp forest. Compared to the same period in the previous year, the 2022 average annual rainfall was 203.02 millimetres on Kampar Peninsula and 242.66 millimetres on Padang Island, an increase of 94%.

Rainfall fluctuates seasonally, and the dry season usually occurs twice per year, late January to February and early June to September. The peak of rainfall occurred in October of 363.1 millimetres on the Kampar Peninsula and in December 446.3 millimetres on Padang Island. When compared to the long-term average rainfall in the same period, the 2022 average rainfall in both Kampar Peninsula and Padang Island has increased by around 94%.

RAINFALL RKP 2022

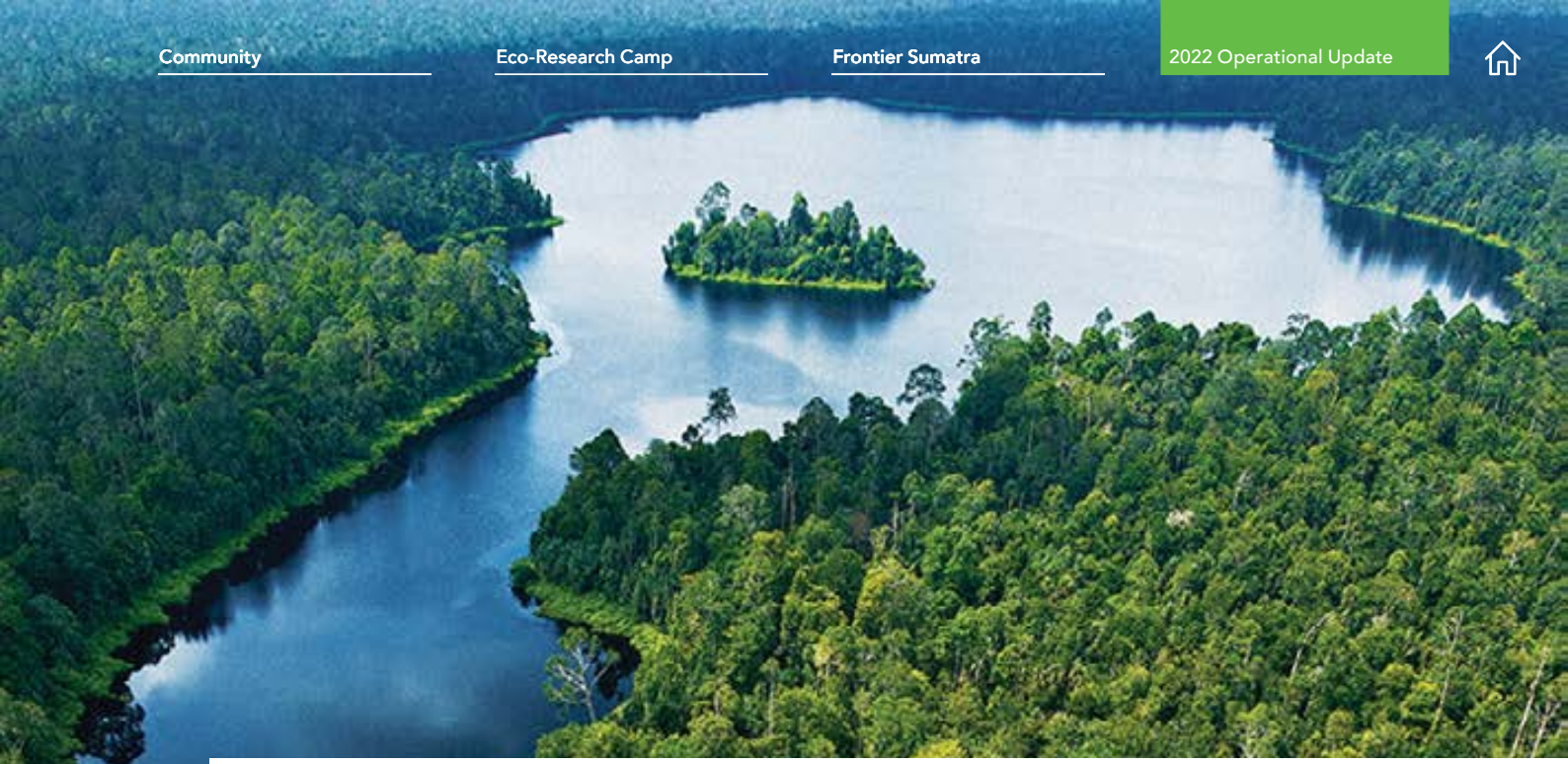
RAINFALL RPP 2022

RIVER LEVEL IN RER CONCESSION 2022



Source: RER Operational Data

There were zero fire incidents on either the Kampar Peninsula or Padang Island in 2022, and no land clearing or fire incidents occurring within or adjacent to the RER area.



FOREST RESTORATION

Natural regeneration is the most cost-effective approach to restoring biodiversity, ecological processes, and/or ecosystem services under favourable ecological conditions. This can be done if there are no new disturbances such as illegal logging, land clearing or fires. Active regeneration requires planting seedlings grown in nurseries, direct seeding, and/or manipulation of the disturbance regime to speed up the recovery process, often at high cost.

Across RER, given the high condition of the forest cover and its isolated areas, less than 900 hectares—or 1% of the total area—needs assistance, where the rest of the forest restoration is based on assisted natural regeneration (ANRI). In 2022, 3,481 seeds from outside the RER were used, while 9,348 seeds were natural seedlings. Of this number, 8,458 seedlings were used to replace dead trees in the GCN and GAN concession areas. The total number of seedlings used up to the end of 2022 was 28,960 seeds, with 19,920 ready for planting.

HYDROLOGICAL RESTORATION

To date, the RER teams have identified 39 canal systems that are 202 kilometres in length across the total RER area. The Kampar Peninsula hosts 25 canal systems, which are 137 kilometres in length. Another 14 canals with a length of 65 kilometres have been identified on Padang Island. The goal is to restore water levels at 40 centimetres elevation intervals along the entire canal network by 2025.

- During 2022, RER built two dams to close one canal system that was 4.2 kilometres in length and impacting an area of 267 hectares. Over five years, RER has achieved 74% of its target to build 89 dams to close 32 canal systems, totalling 148.6 kilometres in length and 9,359.08 hectares of impacted area on the Kampar Peninsula and Padang Island.
- The peat swamp water table levels are measured every one-to-three months. The data collected allows RER teams to monitor the trends of seasonal water levels relative to monthly rainfall. RER teams have installed monitoring systems that can automatically record fluctuations in water levels across RER to improve the quality of data on water levels and peat subsidence. The RER teams also monitor the movement of water levels in the Sangar and Serkap Rivers on the Kampar Peninsula.

COMMUNITY ENGAGEMENT

FARMING

In 2022, RER launched the Fire Aware Community program in two additional villages on Padang Island, as part APRIL's Fire Free Village Program (FFVP), to educate the communities about the risk of fires and support fire prevention.

On the Kampar Peninsula, RER together with BIDARA continue to help communities to be economically independent by utilizing unused areas of land and by planting vegetables and fruit trees. Within a year, households can harvest commodities such as chili, eggplant, chickpea, celery, banana and cassava up to three times if done with proper cropping techniques.

FISHING

Throughout 2022, based on compiled data, 6,072 kilogrammes of fresh fish were harvested, 2,671 kilogrammes dry fish were produced, and 753 fishermen entered the Serkap River. In Sangar River, through 2022, there were 620 kilogrammes of fresh fish harvested, 25 kilogrammes of dry fish produced and 55 fisherman entries recorded. The abundant supplies of fish, especially in the Sangar River, is an important source of income if managed sustainably.

COMMUNITY RELATIONS

In 2022, RER conducted 156 activities in 18 villages around the RER concessions on Kampar Peninsula and Padang Island. RER community welfare programs included support for infrastructure, eco-education and fishery programs, campaigns to encourage clean and healthy living healthy behaviour, sports and religious activities.

STUDENTS INTERNSHIPS FROM THE UNIVERSITY OF BRITISH COLUMBIA

RER accepted four internship students from the University of British Columbia, who came from Indonesia, Canada and the U.S. The internship duration was two months with an effective data collection time of 12 days. The students interviewed 17 fishermen for their research and produced findings in a number of areas.

For example, a total of 12 bycatch species—fish or mammals that are not intended to be caught—were identified by the researchers. Of these, nine were reptiles, and two are mammals, specifically otters and mouse deer. Three of the nine reptiles are included in the IUCN Red List. One species is in the Critically Endangered category (Great river terrapin*/Orlitia borneensis)* and two others are in the Vulnerable category (Common shoftshell turtle*/Amyda cartylaginea* and King cobra*/Ophiophagus hannah).*

The most common species found was the great river terrapin (19%) followed by the common softshell turtle and water monitor lizard.

From a socio-economic perspective, the data on the fishermen is as follows:

- 89% consider fishing as their job and 32% of these fishermen rely only on catching fish for their living.
- 58% have other sources of income (oil palm, rubber and swallow houses).
- The most widely used fishing gear is the Pengilar (fish trap) because it generates the highest returns.

The catch can also be marketed in a smoked form. During the smoking process, fishermen use Kayu Malas *(Parastemon urophyllus)* and Kemodan *(Syzygium incarnatum)* as firewood. Of the two woods, Kayu Malas is preferred because it burns longer.

Mostly, the fish caught are Tapah *(Wallago sp.)* and Gabus *(Channa spp.),* and as a requirement to get a premium price, the minimum weight is 2 kilograms. Of the catch, as much as 80% is marketed to two intermediaries, 10% is for personal consumption and the remaining 10% is sold by the fishermen themselves at the village market.

OUTREACH AND ENGAGEMENT

Basrie Kamba, Director, speaking at COP 27 in Egypt about the RER program.

Over the course of 2022 and into early 2023, RER teams participated in a number of national and international forums to share expertise and learnings from RER with external stakeholders.

For example, at COP27 in Egypt in November 2022, RER and APRIL leaders joined sessions on 'Nature Based Solutions for Climate and Biodiversity,' 'Financing Natural Resources Conservation: Mobilizing Resources to Protect the Only Earth' and on 'Indonesia's Achievement on Conservation and Sustainable Management of Peatland Ecosystems.'

The purpose of participating in these sessions was to support increased participation from the private sectors in funding green initiatives and to encourage a multi-stakeholder approach to the adoption of nature-based solutions.

RER also partnered with VICE Asia on a feature titled '24 Hours with Indonesia's Wildlife Guardians' and hosted more than 40 visiting groups of stakeholders in the RER area. The visiting stakeholders included groups of media from Kompas, Bisnis Indonesia, Jakarta Post, Kumparan and Business Green. Other visitors included two students from the University of Riau doing research on peat water level fluctuations in plantation forests and the diversity of endangered large mammals in the restoration area of PT. GCN on the Kampar Peninsula.

FRONTIER SUMATRA SCREENINGS HELD ACROSS INDONESIA

Following the successful premier of Frontier Sumatra on Discovery Asia in November 2021, several screenings were held for private audiences in Indonesia and Singapore in 2022. In early 2023, a number of screenings were held in six cities across Indonesia.

Held in partnership with media group IDN media, the screenings took place at universities in Pekanbaru (Riau), Medan (North Sumatera), Malang (East Java), Yogyakarta (Yogyakarta), Bandung (West Java) and in Jakarta (Jakarta) and were attended by more than 1,200 students. The objective of the screenings was to highlight the importance of conservation and forest protection to next generation audiences.

FINANCIAL SUMMARY

in USD ('000)

No.	Description	2013–2017	2018	2019	2020	2021	2022
1.	Employees	2,204	960	1,141	1,214	1,176	1,254
2.	Total Operational & Overhead Costs	2,587	958	869	959	1,468	1,390
3.	Legal and License Costs	7,655	161	334	237	179	183
4.	Partnerships*	4,442	181	379	154	430	336
5.	Advisory Board	160	11	19	–	–	64
6.	Capex	1,054	377	1,260	1,953	110	483
Total		**18,102**	**2,648**	**4,002**	**4,517**	**3,364**	**3,710**

*Dependent on the phasing of the implementation of agreed activities

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RESTORASI EKOSISTEM RIAU (RER)