



## Current Status of Hutan Rawa Gambut Siak-Kampar Important Bird Area



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## RER Publication Series

Restorasi Ekosistem Riau programme will regularly publish reports, documents and other publications. The purpose of this publication series is to make information and results on the programme available to the wider public. This report is part of the RER Publication Series, and all rights are exerted by the APRIL Group.

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## FOREWORD

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The monitoring of Important Bird Areas (IBAs) plays an important role in assessing the status of globally threatened birds by allowing us to detect habitat-level changes that affect bird species. The IBA programme aims to identify and protect a network of sites that are critical for the long-term viability of wild bird populations and monitoring plays a key role in assessing the effectiveness of conservation measures and to provide an early warning of problems. Bird monitoring at the species and habitat level is not well developed in many parts of the world, so efforts devoted to site monitoring need to follow clear guidelines.

The bird populations on the Kampar Peninsula in Riau Province, Sumatra were assessed in 1992-93. Based on that assessment *Hutan Rawa Gambut Siak Kampar* IBA was designated in 2003, as a site of international biodiversity conservation importance on the basis of its remarkable bird diversity, which included many rare and highly threatened bird species. The area was also found to hold species assemblages that were characteristic of tropical peat swamp forests, which are one of the most threatened ecosystems in the world.

Since the early 2000s the Kampar Peninsula has experienced significant planned and unplanned forest production development, which was considered a significant threat to biodiversity. Since 2013, land use change has stabilized with the completion of government-licensed fibre plantations and the legal designation and protection of high conservation value forest in the most degraded coastal areas. Additionally, the government has expanded the amount of protected forest and established Ecosystem Restoration Concessions on the interior peat domes, allowing for greater conservation advocacy and action to protect, assess, restore and manage these forests.

It is with great pleasure we share this update of the status of the *Hutan Rawa Gambut Siak Kampar* IBA as a first step towards institutionalized monitoring assessment of this remarkable area.

**Dr. Stephen Browne**

Director, Asia-Pacific Regional Programme  
Fauna & Flora International

## ACKNOWLEDGMENTS

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The information presented here is the result of a phenomenal combined effort by the FFI Indonesia programme field survey team as well as the Restorasi Ekosistem Riau programme management and field staff. Their commitment, motivation and skills to document and conserve this landscape are commendable. It is with many thanks to them that intensive monitoring has occurred and the data is available to provide the current status and progress of our knowledge regarding this Important Bird Area.

## OBJECTIVES

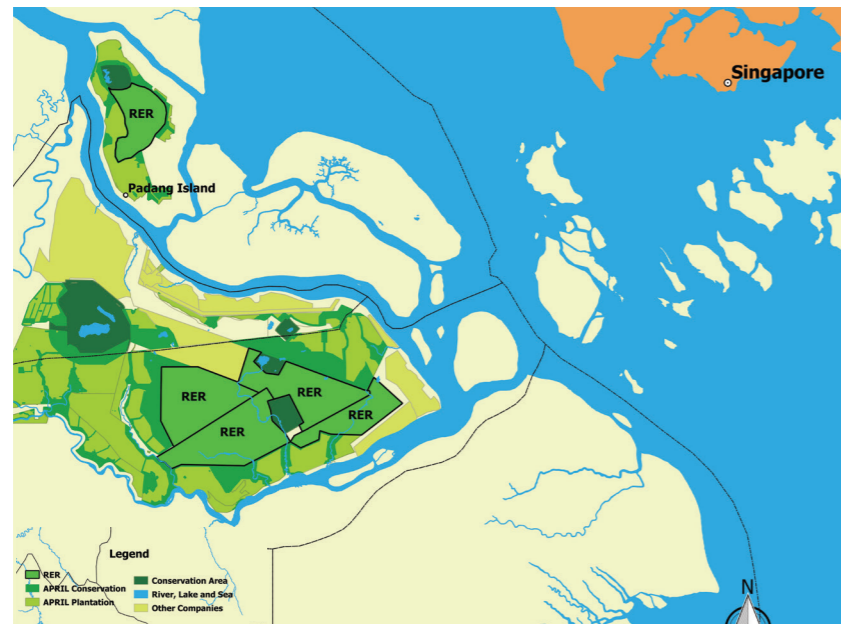
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The aim of this report is to contribute to the growing knowledge base regarding the flora and fauna of the Kampar Peninsula by describing the current status and progress of the *Hutan Rawa Gambut Siak Kampar Important Bird Area* in Sumatra, Indonesia. This document follows the established site monitoring guidelines and documentation of Bird Life International. Originally designated as an Important Bird Area in 2003, this update describes the total number of bird species recorded to date and their ornithological importance; the number of threatened bird species and other important fauna; describes the protected areas, conservation issues, and refines the boundary of the area now that land use development has stabilized and administrative boundaries are well defined.

## About Restorasi Ekosistem Riau

Restorasi Ekosistem Riau (RER) was established in 2013 by APRIL Group and is aimed at protecting and restoring ecologically important peatland forest within Indonesia's Riau Province. Located in eastern Sumatra, RER includes an area of 150,693 ha, of which 130,095 ha are located at the heart of a 344,573 ha forest block on the Kampar Peninsula. Another 20,598 ha is located on Padang Island to the north of Kampar Peninsula.

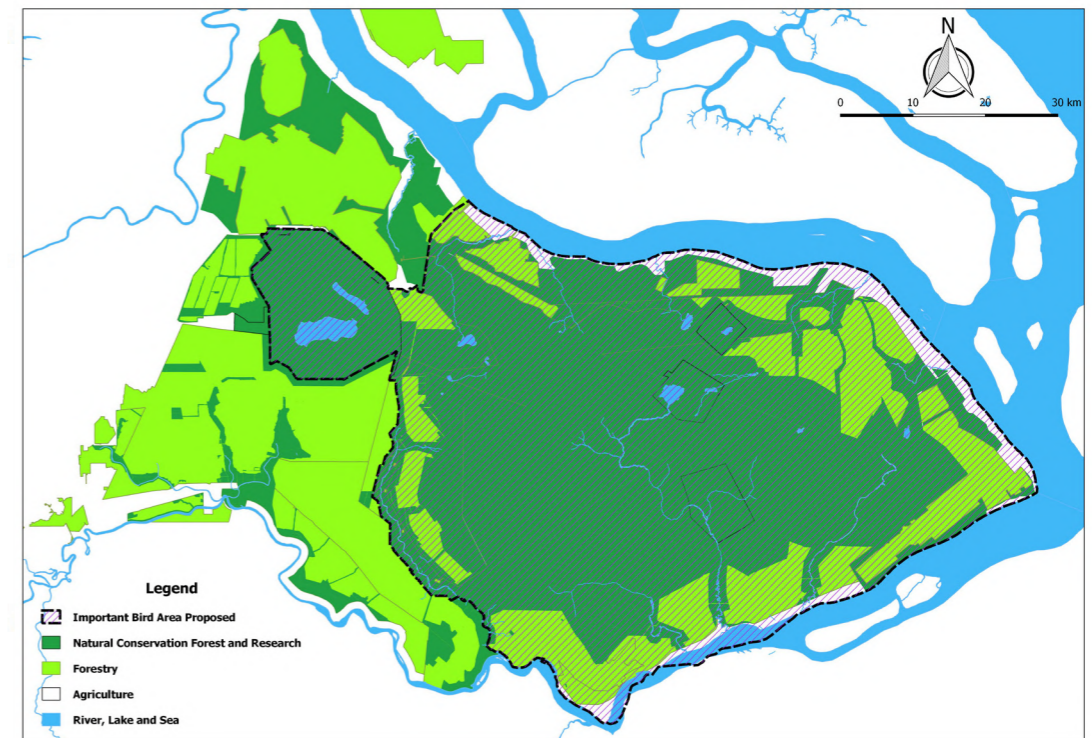
RER consists of five Ecosystem Restoration Concessions (ERC), issued by the Ministry of Environment and Forestry of the Republic of Indonesia for a 60 year period. A critical element of the RER initiative is the integration of the production-protection ring landscape model, where *Acacia crassicaarpa* plantations are located on the perimeter of the natural forests of RER. This integrated landscape model, not only provides protection from encroachment, but also actively funds and provides operational and technical resources for the programme. In December 2015, APRIL Group has dedicated US\$ 100 million for conservation and restoration initiatives, including the RER, for 10 years.



Restorasi Ekosistem Riau's five concessions located on the east coast of Riau Province on Kampar Peninsula and Padang Island are surrounded by a ring of actively managed fibre plantations and High Conservation Value Forest.

## Summary

Country	: Indonesia
Province	: Riau
Central coordinates	: North 0°28'28.82" East 102°38'39.04"
Altitude (m asl)	: Sea level - 15
IBA Criteria met	: A1, A3 (2018)
Area (ha)	: 438,933



**Site description:** A 438,933 ha lowland tropical peat swamp forest located on the 720,000 ha Kampar Peninsula on the east coast of Riau Province in Sumatra. A total of 75% of the IBA is natural peat swamp forest surrounded by 92,237 ha of production acacia fibre plantations. The central core is dominated by two peat domes, interspersed with several black water lakes and slow-moving meandering rivers that flow to the coast. Four protected areas totalling 40,909 ha surround the major lakes. Forest types include mixed peat swamp forest, riparian forest, tall pole forest and short-pole forest. These forests contain diverse flora and fauna community's representative of this part of Sumatra, despite the past forest degradation by selective logging and open drainage via human made canals. Much of the area is now being restored, managed and protected by private-sector companies that manage 82% of the IBA under long-term government licenses.

### Key biodiversity:

The lowland peat swamp forests of this IBA are a critically threatened habitat. Through a compilation of inventories from 1991, combined with extensive and continuous monitoring undertaken across much of the Kampar Peninsular since 2010, there have been 307 species of bird recorded on the Kampar Peninsula. Of these, 241 (79%) are residents, 57 (18%) are migrants and nine (3%) are both resident and migrant. The bird species recorded on the Kampar Peninsula represent 40% of all bird species in Sumatra (20% of all bird species in Indonesia) and are mostly representative of peat swamp forest, with continued presence of peat swamp specialists such as Hook-billed Bulbul (VU) *Setornis criniger* and Grey-breasted Babbler *Malacopteron albogulare*. Lowland specialists such as Bonaparte's Nightjar (VU) *Caprimulgus concretus* and Wrinkled Hornbill *Rhabdotorrhinus corrugatus* are also well represented. The site also provides stable habitat for galliforms such as Black Partridge (VU) *Melanoperdix nigra* and Malay Crestless Fireback (VU) *Lophura erythrophthalma*.

A total of 21 bird species are listed as globally threatened; one Critically Endangered, four Endangered and 16 Vulnerable. Listed bird species include Helmeted Hornbill (CR) *Rhinoplax vigil*, Milky Stork (EN) *Mycteria cinerea*, Storm's Stork (EN) *Ciconia stormi*, and White-winged Duck (EN) *Asarcornis scutulata*. The site is an important staging and wintering habitat for migratory species such as Arctic Warbler *Phylloscopus borealis*, Purple-backed Starling *Agropsar sturninus*, several Flycatchers (Muscicapidae), Tiger Shrike *Lanius tigrinus*, as well as five species of migratory raptors that include Chinese Sparrowhawk *Accipiter soloensis*, Oriental Honey Buzzard *Pernis ptilorhynchus*, and Black Baza *Aviceda leuphotes*. A resident raptor, Wallace's Hawk Eagle (VU) *Nisaetus nanus* is also present.

### Non-bird biodiversity:

Thirty-four globally threatened species of plants and animals such as *Shorea platycarpa*, *Vatica teysmanniana*, *Panthera tigris sumatrae*, *Manis javanica*, *Tomistoma schlegelii*, *Batagur borneoensis* (RER-FFI, 2016).



A Rhinoceros Hornbill  
(*Buceros rhinoceros*)

Photo : Prayitno Goenarto



## Text Account

Year of compilation: 2019

### SITE DESCRIPTION

#### (I) Physical Characteristics

The Kampar Peninsula Important Bird Area is comprised of 438,933 ha of lowland tropical peat swamp forest located on a remote peninsula between Selat Panjang to the north and east, Kampar River to the south, and Kutup River to the west. Its central core is densely forested, and has two peat domes, the western dome being more prominent in size than the eastern dome. The landscape is dependent upon rainfall for its water source. There are 11 natural lakes that dot the landscape, and nine rivers allow for natural drainage. The Serkap River is the longest (64-km) navigable river most frequently used by local fishermen. Despite their dark black or tea colour, rivers and lakes are characterized as pristine waters with low pH (3.2-4.9), low dissolved oxygen, and water transparency of less than 100 cm due to tannins from the organic peat soils. Seasonal flooding occurs on the peat domes and along the water courses. Peat depth ranges from zero meters at the coastline to more than 11 meters at the interior peat domes. Average gradient from the dome to the coastline is approximately 35 cm/kilometre. Sediment soils are occasionally found along the peninsula's coastline. The Kampar River generates a large tidal bore/wave called "Bono", caused by high tides flowing upstream for more than 60-km, meeting the river water flowing downstream. This tidal influence also extends 10-15 km inland on the smaller side-rivers of the peninsula that flow into the Kampar River.

#### (II) Climatic Conditions

Mean annual rainfall is approximately 2,100 mm, with slightly wetter periods from October–January and April–May (200-400+ mm). Lowest rainfall occurs in June–September (50-200 mm), and a short dry season also occurs from February to mid-March. Diurnal temperature ranges between 23– 34°C.

#### (III) Vegetation Type

The principle vegetation throughout the Kampar Peninsula is lowland tropical peat swamp forest that is sub-categorized as mixed peat swamp forest (MPSF), in the lower elevations and riparian forest (RF) along the river corridors, tall pole forest (TPF) at mid-slope and short-pole forest (SPF) located on the large, flat peat dome bog plains. The MPSF is characterized by peat depths ranging from 1-9 meters containing dense, multi-storied forests with large (20-40 m tall), mature trees ranging in diameter at breast height (dbh) from 30-70 cm with adaptations to living in waterlogged conditions such as buttress roots, aerial roots and shallow but widespread root systems. Dominant over-story species include Light Red Meranti *Shorea platycarpa*, and *S. teysmanniana*, *S. ulginosa*, Ramin *Gonystylus bancanus*, Perepat *Combretocarpus rotundatus*, Mersawa Paya *Anisoptera marginata*, Suntai Putih *Palaquium walsurifolium*, and Kempas *Koompassia excelsa*. Small patches of the MPSF were degraded by past commercial selective logging and characterized by open canopy with dense ferns, shrubs, climbers and tree regeneration. Along some river corridors, human disturbance by past fires has created non-forested (open canopy) flood plains composed of freshwater ponds, grasses



and shrubs. River water levels fluctuate between 1.0-1.5 meters depending upon rainfall causing seasonal inundation of the open plains and adjacent MPSF. River channels are generally narrow due to dense vegetation such as Rasau *Pandanus helicopus* and Bakung *Hanguana malayana* which thrive in open sunlight.

Along the river systems of the Kampar Peninsula there is also RF, which extends from the river banks as far as the tidal flow extends, sometimes up to 500m (Hamidi *et al.*, 2016). Riparian forest is characterized by submerged substrate and plant species such as *Syzygium glaucum*, *Syzygium antisepticum*, *Shorea platycarpa*, *Camptosperma coriaceum*, *Parastemon urophyllus*, *Pandanus sp.* and *Pandanus helicopus*.

The TPF is characterized by peat depths ranging from 7-11 meters containing dense forests with single-storied canopy and mature trees ranging in height from 20-35 m and dbh ranging from 10-35 cm. Species include Meranti, *Camptosperma coriaceum*, *Tetramerista glabra*, *Calophyllum ferrugineum*, and *Syzygium spp.* The SPF is characterized by peat depths greater than nine meters that exist on a flat bog plain containing stunted, short, single-canopy forest with mature trees ranging in height from 10-15 m and dbh from 10-20 cm. Mature over-story tree species include Meranti, Mentangor *Calophyllum ferrugineum*, *Camptosperma coriacea* and Rasau *Pandanus helicopus*.

A coastal ring of *Acacia crassicarpa* fibre plantations (pulpwood) and intensive water management systems was established (2005-2013) around the central natural forest and core peat dome. These plantations replaced the drained, burned, and degraded forest abandoned by past commercial harvesting, illegal logging and small land-claimers. The acacia is progressively harvested once every five years and immediately replanted. Some small and medium-enterprise oil palm and sago plantations also exist on the northern coastline.

### ORNITHOLOGICAL IMPORTANCE

Extensive inventories undertaken across much of the Kampar Peninsular since 2010 recorded 307 species of birds, representing 40% of Sumatra's 758 bird species. Two hundred forty-one (79%) are resident, 57 (18%) are migrants and nine (3%) are both resident and migrant. The number of migrant birds recorded suggest the peat swamp forest of central and eastern Sumatra are an important staging and wintering habitat for migratory species. In total, 25 birds of prey from Accipitridae (22) and Falconidae (3) are recorded, including Wallace's Hawk Eagle *Nisaetus nanus*, a lowland specialist. Five species of raptor utilize the peninsula during their migration. This number includes the Chinese Sparrowhawk, the Oriental Honey Buzzard and the Black Baza.

Four pheasants are present including Black Partridge *Melanoperdix nigra*, which was only recently detected in this landscape (2016), representing a range extension for this species in the Riau province of Sumatra. No fewer than 15 nocturnal birds are known inhabitants of this landscape including six owl species (Strigidae, Tytonidae), four nightjars (Caprimulgidae) and five frogmouths (Podargidae).

Bonaparte's Nightjar *Caprimulgus concretus*, a lowland forest specialist, is common throughout the Peninsula and was recently recorded for the first time in Riau Province, representing a range extension in Sumatra. Additional lowland peat swamp specialists include Hook-billed Bulbul *Setornis criniger*, Grey-breasted Babbler *Malacopteron albogulare*, and Scarlet-breasted Flowerpecker *Prionochilus thoracicus*. Purple Heron *Ardea purpurea* and Black-crowned Night-heron *Nycticorax nycticorax* are commonly observed along the Kampar River.

Despite not being observed in the forest during inventories in the early 1990's, there is evidence since 2007 of White-winged Duck *Asarcornis scutulata* breeding and utilizing access canals within the acacia fibre plantations located on the coastal-ring of the peninsula. Likewise, the Storm's Stork *Ciconia stormi* was also documented by camera trap moving across the forest floor in mixed peat swamp forest.



Remote Camera Trap monitoring has identified rare & cryptic bird species such as Storm's Stork (*Ciconia Stormi*)

There are 102 species of bird known to be present that 'trigger' two of the four global IBA criteria (Table 1). This includes 21 species of bird listed as globally threatened (A1) and 95 species of bird that are biome restricted (A3). Fourteen species meet both criteria A1 and A3. There is one species present that is Critically Endangered, four are Endangered and 16 are Vulnerable. The globally threatened species comprise, Milky Stork *Mycteria cinerea*, Storm's Stork *Ciconia stormi*, White-winged Duck *Asarcornis scutulata*, Lesser Adjutant *Leptoptilos javanicus*, Wallace's Hawk Eagle *Nisaetus nanus*, Black Partridge *Melanoperdix nigra*, Malay Crestless Fireback *Lophura erythrophthalma*, Short-toed Coucal *Centropus rectunguis*, Bonaparte's Nightjar *Caprimulgus concretus*, Greater Green Leafbird *Chloropsis sonnerati*, Helmeted Hornbill *Rhinoplax vigil*, Great Hornbill *Buceros bicornis*, Rhinoceros Hornbill *Buceros rhinoceros*, Black Hornbill *Anthracoceros malayanus*, Wrinkled Hornbill *Rhabdotorrhinus corrugatus*, Wreathed Hornbill *Rhyticeros undulatus*, Long-tailed Parakeet *Psittacula longicauda*, Ruby-throated Bulbul *Pycnonotus dispar*, Javan Myna *Acridotheres javanicus*, and Large-green Pigeon *Treron capellei*.

## OTHER IMPORTANT FAUNA AND FLORA

There are another 34 globally threatened species of plants and animals present on the Kampar Peninsula that include 9 plant species, 16 mammal species, and 10 amphibian and reptile species.

One hundred ninety plant species have been recorded. These include *Shorea platycarpa*, *Vatica teysmanniana*, *Anisoptera marginata*, *Shorea teysmanniana*, *Vatica pauciflora*, *Combretocarpus rotundatus*, *Shorea uliginosa* and *Gonystylus bancanus*. Non-tree species include 4 species of orchid *Bulbophyllum vaginatum*, *Dendrobium sp.* and *Phaius sp.*, *Nepenthes ampullaria* and *N. rafflesiana*; as well as palm species such as *Cyrtostachys renda*, *Licuala spinose*, and *Eleiodoxa conferta*.

Over 76 species of mammals have been recorded including two ungulates Sambar Deer *Rusa unicolor*, Greater Oriental Chevrotain *Tragulus napu* and Lesser Oriental Chevrotain *Tragulus kanchil*; five of Sumatra's seven cat species, Sumatran Tiger *Panthera tigris sumatrae*, Sunda Clouded Leopard *Neofelis diardi*, Marbled Cat *Pardofelis marmorata*, Leopard Cat *Prionailurus bengalensis*, and Flat-headed Cat *Prionailurus planiceps*; eight primate species including Silvered Langur *Trachypithecus cristatus*, Banded Surili *Presbytis femoralis percura*, Long-tailed Macaque *Macaca fascicularis*, Pig-tailed Macaque *M. nemestina*, Agile Gibbon *Hylobates agilis*, and Sunda Slow Loris *Nycticebus coucang*. A total of 15 bat species are present including Spotted-wing Fruit Bat *Balionycteris maculata* and Large Flying Fox *Pteropus vampyrus*. Bearded pig *Sus barbatus* and Wild Boar *Sus scrofa* and numerous small mammals are also present, such as squirrels, rats, water-shrew, civets and otters.

In total, 22 species of amphibians and 85 species of reptiles are known to be present. Four frog species including *Theloderma pictum*, *Limnonectes paramacrodon*, *Hylarana rawa* and *H. parvaccola* are residents of the area. Ten species of turtle are present including the Malaysian Giant Turtle *Orlitia borneensis* and the Painted Terrapin *Batagur borneoensis* which is Critically Endangered. Both the False Gharial *Tomistoma schlegelii* and Salt-water Crocodile *Crocodylus porosus* have been recorded in the rivers of the peninsula, but rarely seen. Four species of monitor lizard Varanidae have been recorded as are 42 species of snake from Families: Colubridae (18), Natricidae (4), Pareasidae (3), Pythonidae (3), Viperidae (5), Homalopsidae (2), Lamprophiidae (2), Acrochordidae (1), and Xenopeltidae (1).



Camera trap : Sunda Clouded Leopard (*Neofelis diardi*)

Altogether, 89 species of fish have been identified in the lakes and rivers of the Kampar Peninsula, with fish being the primary non-timber forest resource that a limited number of local people depend upon as a forest derived livelihood.

Preliminary inventories have also identified 28 species of Dragonflies and Damselflies on the Peninsula.

## PROTECTED AREAS

Protected areas within this landscape have increased from 25,000 ha in 2003 to 40,909 ha (Table 2) and comprised of Zamrud National Park (28,238 ha) and three protected areas that include Tasik Besar Serkap (3,242 ha), Tasik Serkap (6,900 ha) and Tasik Belat (2,529 ha). Since 2013, the Restorasi Ekosistem Riau (RER) programme has managed 130,095 ha of peat swamp forest under five Ecosystem Restoration Licenses (ERCs). Both the RER restoration areas and protected areas are located in the central core of the Kampar Peninsula and mostly surrounded by fibre plantations.

## HABITAT AND LAND USE

The entire IBA is lowland tropical peat swamp forest (Table 3) that is flooded at least part of the year, and relies on rain as its only water source. Approximately 75% of the area is nature conservation, 21% is production forestry and 4% is community agriculture (Table 4).

Government agencies manage 12% of the IBA, communities have 5% of the management responsibility, while 82% of the IBA is under private sector management (Table 5). The nature conservation area includes the government protected areas, water, and unlicensed land (53,915 ha); concession areas managed for ecosystem restoration (130,095 ha), high conservation values (124,010 ha), carbon storage (15,640 ha); and a village forest (4,226 ha). The production forestry area is primarily *Acacia crassicarpa* fibre plantations and some rubber plantations (92,237 ha). Community agriculture consists of vegetable gardens, rubber and oil palm (18,810 ha).

## CONSERVATION ISSUES

In 2010 the Tasik Besar Serkap Forest Management Unit (KPHP-TBS) was established in Riau Province to coordinate the development of a 513,276 ha landscape management plan amongst all license-holders and stakeholders on the Kampar Peninsula. This planning process is still ongoing.

In 2018, the Indonesian Ministry of Environment and Forestry revised a 1999 regulation and increased the number of nationally protected plant and animal species from 294 to 921. The most significant group designated for protection were birds, the vast majority being songbirds, with the number of listed species increasing from 93 to 564 species. Likewise, the number of listed protected plant species increased from 58 to 127 species and protected mammals increased from 70 to 137 species with this revision. However, the taxonomic resolution for listing protected flora and fauna changed from broader family or genera to species level, reducing safeguards afforded to threatened species that are difficult to identify. Due to this specification, this regulatory revision decreased the number of protected bird species on the Kampar Peninsula from 73 to 45.

RER has been conducting species inventories since 2013, resulting in new distributional records for Bonaparte's Nightjar, Black Partridge and the discovery of *Hylarana rawa*, a recently described endemic frog. Additionally, a new fish species of the subfamily Danioninae, *Pectenocypris nigra* was collected from the Serkap River in 2013, emphasizing that there may be species yet to be discovered in this isolated and little studied peat swamp forest ecosystem.

Commercial harvest of native forest ceased in 2013 as corporate policies committed to only harvesting plantation wood. Government regulations are actively and collaboratively implemented to protect, restore and manage the degraded peat swamp forests of the RER area through Ecosystem Restoration licenses. Fire use, illegal logging, poaching and hydrological damage have either ceased or been dramatically reduced across the IBA area due to active and responsive land management by the private-sector.

The main threat that exists within the IBA is trapping of large numbers of both protected and non-protected bird species for the caged-bird trade. This provides supplemental income to local fishermen and is primarily focused on Van Hasselt's Sunbird *Leptocoma brasiliana* because of its unique song that is prized by collectors for competitions on Java. Other birds captured to a lesser degree include the Blue-winged Leafbird *Chloropsis moluccensis*, the Crimson Sunbird *Aethopyga siparaja*, and the Blue-crowned Hanging Parrot *Loriculus galgulus*.

There is also some by-catch of turtles and monitor lizards by fishermen in their fish traps and nets and some evidence of wildlife poaching.



*The most significant threat to avians in Kampar Peninsula is the collection of song birds, such as the Van Hasselt's Sunbird.*





**Copper-throated Sunbird**  
(*Leptocoma calcostetha*)

Photo : Prayitno Goenarto

## Data Tables

### Table 1. IBA Criteria

**Year of most recent IBA criteria assessment: 2018**

**Populations of IBA trigger species**

*Note: This table presents the IBA criteria triggered and the species that triggered them at the time of assessment. The current IUCN Red List category may vary from that which was in place at that time.*

#### A1. Globally threatened bird species present in IBA ID017

1.	Black Partridge (VU) <i>Melanoperdix nigra</i>	Recorded in the core peat swamp forests surrounding the Serkap and Sangar Rivers during transect survey and camera trapping in 2015 by FFI (Kristanto & Junaid, 2016). Multiple follow up sightings in 2017, 2018 via camera traps (Muhammad & Goenarto, 2017). Video captured of breeding pair of male and female Partridge accompanied by three chicks in 2017.
2.	Malay Crestless Fireback (VU) <i>Lophura erythrophthalma</i>	Recorded in the core peat swamp forests surrounding the Serkap and Sangar Rivers by TROPENBOS HCV Assessment (Tropenbos et al., 2010) and during transect survey and camera trapping in 2015 by FFI (Kristanto & Junaid, 2016). Multiple follow up sightings in 2017 and 2018 via camera traps (Muhammad & Goenarto, 2017). Video captured of breeding pair of male and female Fireback accompanied by two chicks in 2017.

### A1. Globally threatened bird species present in IBA ID017

3.	White-winged Duck (EN) <i>Asarcornis scutulata</i>	First sighting in 2007 (Muhammad & Goenarto, 2017) and 2010 during TROPEN-BOS HCV Assessment (Tropenbos <i>et al.</i> , 2010) and in 2013 along less disturbed plantation canals on the Kampar Peninsula with moderate canopy cover. Duck is usually seen alone or in a pair and have been recorded in the following years (2014, 2015, 2016 and 2017) (Muhammad and Goenarto, 2017). Clutch size of five ducklings were also observed in 2015 and 2016 (Muhammad & Goenarto, 2017)
4.	Large Green-pigeon (VU) <i>Treron capellei</i>	Recorded previously in survey in mangroves and mixed forest edge down Metas river (van Balen 1991). Recorded again in the core peat swamp forests of the Kampar in 2010 (Tropenbos <i>et al.</i> , 2010) and in 2015 (Kristanto & Junaid, 2016)
5.	Bonaparte's Nightjar (VU) <i>Caprimulgus concretus</i>	Recorded in peat swamp forests surrounding Serkap and Sangar rivers during a transect survey in 2015 by FFI (Kristanto & Junaid, 2016)
6.	Short-toed Coucal (VU) <i>Centropus rectunguis</i>	Recorded in core peat swamp forests surrounding Serkap and Sangar Rivers during survey in 2015 by FFI (Kristanto & Junaid, 2016). Captured in a similar forest area by camera traps in 2017, 2018 (Muhammad & Goenarto, 2017)
7.	Lesser Adjutant (VU) <i>Leptoptilos javanicus</i>	Seen in the Kampar Peninsula in 2010 (Tropenbos <i>et al.</i> , 2010) and 2015 (Kristanto & Junaid, 2016). Recorded downstream on the Serkap River flying overhead in 2017, 2018 (Muhammad & Goenarto, 2017, 2017). Recorded six individuals along the Kampar River during the 2019 Asian Waterbird Census.

### A1. Globally threatened bird species present in IBA ID017

8.	Milky Stork (EN) <i>Mycteria cinerea</i>	Recorded in the Kampar Peninsula (Tropenbos <i>et al.</i> , 2010) and core peat swamp forests surrounding Serkap and Sangar Rivers during survey in 2015 by FFI (Kristanto & Junaid, 2016).
9.	Storm's Stork (EN) <i>Ciconia stormi</i>	Recorded in the Kampar Peninsula (Tropenbos <i>et al.</i> , 2010) and core peat swamp forests surrounding Serkap and Sangar Rivers through camera traps in 2016 (Kristanto & Junaid, 2016) and 2017 (Muhammad & Goenarto, 2017)
10.	Wallace's Hawk-eagle (VU) <i>Nisaetus nanus</i>	Recorded along Rawa River and Metas River in 1991 (van Ballen, 1991). Recorded in peat swamp forests surrounding Serkap and Sangar Rivers during survey in 2015 by FFI (Kristanto & Junaid, 2016). Also seen during raptor migration watch along the Serkap River in 2017 (Muhammad & Goenarto, 2017)
11.	Helmeted Hornbill (CR) <i>Rhinoplax vigil</i>	Recorded in the peat swamp forests surrounding Serkap and Sangar Rivers on the Kampar Peninsula based on distinct vocalization in 2007. Recorded again in Tasik Metas in 2016 (A. Greer, pers com., 2019).
12.	Great Hornbill (VU) <i>Buceros bicornis</i>	Recorded along Rawa River and Metas River in 1991 (van Ballen, 1991) and the follow-up survey (Burn & Brickle 1992). Recorded in the Kampar Peninsula in 2010 (Tropenbos <i>et al.</i> , 2010) and peat swamp forests surrounding Serkap and Sangar Rivers during a transect survey in 2015 by FFI (Kristanto & Junaid, 2016). Recorded along the forests along the Serkap River in 2016, 2017, 2018 (Muhammad & Goenarto, 2017).

A1. Globally threatened bird species present in IBA ID017

13.	Rhinoceros Hornbill (VU) <i>Buceros rhinoceros</i>	Recorded along Rawa River and Metas River in 1991 (van Ballen, 1991) and the follow-up survey (Burn & Brickle 1992). Recorded on the Kampar Peninsula in 2010 (Tropenbos <i>et al.</i> , 2010) and peat swamp forests surrounding Serkap and Sangar Rivers during a transect survey in 2015 by FFI (Kristanto & Junaid, 2016). Recorded along the forests along the Serkap River in 2016, 2017, 2018 (Muhammad & Goenarto, 2017).
14.	Black Hornbill (VU) <i>Anthracoceros malayanus</i>	Recorded along Rawa river and Metas river in 1991 (van Ballen, 1991) and the follow-up survey (Burn & Brickle 1992). Recorded in peat swamp forests surrounding Serkap and Sangar rivers during a transect survey in 2015 by FFI (Kristanto & Junaid, 2016). Recorded along the forests along the Serkap river in 2016, 2017, 2018 (Iqbal & Goenarto, 2017).
15.	Wrinkled Hornbill (EN) <i>Rhabdotorrhinus corrugatus</i>	Recorded along Rawa river and Metas river in 1991 (van Ballen, 1991) and the follow-up survey (Burn & Brickle 1992). Recorded in peat swamp forests surrounding Serkap and Sangar rivers during a transect survey in 2015 by FFI (Kristanto & Junaid, 2016). Recorded along the forests along the Serkap river in 2016, 2017, 2018 (Muhammad & Goenarto, 2017).
16.	Wreathed Hornbill (VU) <i>Rhyticeros undulatus</i>	Recorded along Rawa river and Metas river in 1991 (van Ballen, 1991) and the follow-up survey (Burn & Brickle 1992). Recorded in peat swamp forests surrounding Serkap and Sangar rivers during a transect survey in 2015 by FFI (Kristanto & Junaid, 2016).

A1. Globally threatened bird species present in IBA ID017

17.	Long-tailed Parakeet (VU) <i>Psittacula longicauda</i>	Recorded in Danau Pulau Besar, Danau Bawah and Metas river in 1991 (van Ballen, 1991). Recorded in peat swamp forests surrounding serkap and Sangar river during a transect survey in 2015 by FFI (Kristanto & Junaid, 2016). Recorded along the forests along the Serkap river in 2016, 2017, 2018 (Muhammad & Goenarto, 2017).
18.	Hook-billed Bulbul (VU) <i>Setornis criniger</i>	Recorded along Rawa river and Metas river in 1991 (van Ballen, 1991) and the follow-up survey (Burn & Brickle 1992). Recorded in peat swamp forests surrounding Serkap and Sangar rivers during a transect survey in 2015 by FFI (Kristanto & Junaid, 2016). Recorded by camera trap in forest patch near Serkap river in 2018 (Muhammad & Goenarto, 2017)
19.	Ruby-throated Bulbul (VU) <i>Pycnonotus dispar</i>	Recorded in peat swamp forests surrounding Serkap and Sangar river during a transect survey in 2015 by FFI (Kristanto & Junaid, 2016).
20.	Javan Myna (VU) <i>Acridotheres javanicus</i>	Recorded in plantation areas and near human residence in the Kampar Peninsula (Muhammad & Goenarto, 2017).
21.	Greater Green Leafbird (VU) <i>Chloropsis sonnerati</i>	Recorded along 2 Rawa river, Danau Besar dan Danau Bawah (van Balen, 1991). Recorded in the Kampar Peninsula in 2010 (Tropenbos <i>et al.</i> , 2010) peat swamp forests surrounding Serkap and Sangar rivers during a transect survey in 2015 by FFI (Kristanto & Junaid, 2016). Recorded along the forests along the Serkap river in 2016, 2017, 2018 (Muhammad & Goenarto, 2017).



**Changeable Hawk - eagle**  
(*Nisaetus cirrhattus*)

Photo : Prayitno Goenarto

A3. Biome (AS14 Sunda lowland forest) restricted bird species present in IBA ID017

No.	Scientific Name	Common Name	IUCN
1.	<i>Rollulus rouloul</i>	Crested Partridge	NT
2.	<i>Melanoperdix nigra</i>	Black Partridge	VU
3.	<i>Lophura erythrophthalma</i>	Malay Crestless Fireback	VU
4.	<i>Treron fulvicollis</i>	Cinnamon-headed Green-Pigeon	NT
5.	<i>Treron olax</i>	Little Green Pigeon	LC
6.	<i>Treron capellei</i>	Large Green-pigeon	VU
7.	<i>Ramphiculus jambu</i>	Jambu Fruit-dove	NT
8.	<i>Batrachostomus stellatus</i>	Gould's Frogmouth	NT
9.	<i>Batrachostomus cornutus</i>	Sunda Frogmouth	LC
10.	<i>Lyncornis temminckii</i>	Malaysian Eared Nightjar	VU
11.	<i>Caprimulgus concretus</i>	Bonaparte's Nightjar	NT
12.	<i>Rhaphidura leucopygialis</i>	Silver-rumped Spinetail	NT
13.	<i>Centropus rectunguis</i>	Short-toed Coucal	VU
14.	<i>Rhinorhina chlorophaea</i>	Raffles's Malkoha	LC
15.	<i>Zanclostomus javanicus</i>	Red-billed Malkoha	LC
16.	<i>Phaenicophaeus diardi</i>	Black-bellied Malkoha	NT
17.	<i>Phaenicophaeus sumatranus</i>	Chestnut-bellied Malkoha	NT
18.	<i>Phaenicophaeus curvirostris</i>	Chestnut-breasted Malkoha	LC
19.	<i>Ciconia stormi</i>	Storm's Stork	EN
20.	<i>Bubo sumatranus</i>	Barred Eagle-Owl	LC
21.	<i>Nisaetus nanus</i>	Wallace's Hawk-eagle	VU
22.	<i>Harpactes duvaucelii</i>	Scarlet-rumped Trogon	NT
23.	<i>Harpactes diardii</i>	Diard's Trogon	NT
24.	<i>Harpactes kasumba</i>	Red-naped Trogon	NT
25.	<i>Rhinoplax vigil</i>	Helmeted Hornbill	CR
26.	<i>Buceros rhinoceros</i>	Rhinoceros Hornbill	VU

A3. Biome (AS14 Sunda lowland forest) restricted bird species present in IBA ID017			
No.	Scientific Name	Common Name	IUCN
27.	<i>Anorrhinus galeritus</i>	Bushy-crested Hornbill	NT
28.	<i>Anthracoceros malayanus</i>	Black Hornbill	VU
29.	<i>Rhabdotorrhinus corrugatus</i>	Wrinkled Hornbill	EN
30.	<i>Calorhamphus hayii</i>	Malay Brown Barbet	LC
31.	<i>Psilopogon mystacophanos</i>	Red-throated Barbet	NT
32.	<i>Psilopogon rafflesii</i>	Red-crowned Barbet	NT
33.	<i>Psilopogon henricii</i>	Yellow-crowned Barbet	NT
34.	<i>Indicator archipelagicus</i>	Malay Honeyguide	NT
35.	<i>Sasia abnormis</i>	Rufous Piculet	LC
36.	<i>Hemicircus concretus/sordidus</i>	Red-crested Woodpecker/ Grey-and-buff Woodpecker	LC
37.	<i>Chrysocolaptes validus</i>	Orange-backed Woodpecker	LC
38.	<i>Dinopium rafflesii</i>	Olive-backed Woodpecker	NT
39.	<i>Meiglyptes grammithorax</i>	Buff-rumped Woodpecker	LC
40.	<i>Meiglyptes tukki</i>	Buff-necked Woodpecker	NT
41.	<i>Chrysophlegma miniaceum</i>	Banded Woodpecker	LC
42.	<i>Picus puniceus</i>	Crimson-winged Woodpecker	LC
43.	<i>Microhierax fringillarius</i>	Black-thighed Falconet	LC
44.	<i>Psittinus cyanurus</i>	Blue-rumped Parrot	NT
45.	<i>Psittacula longicauda</i>	Long-tailed Parakeet	VU
46.	<i>Loriculus galgulus</i>	Blue-crowned Hanging-parrot	LC
47.	<i>Erythropitta granatina</i>	Garnet Pitta	NT
48.	<i>Cymbirhynchus macrorhynchus</i>	Black-and-red Broadbill	LC
49.	<i>Eurylaimus ochromalus</i>	Black-and-yellow Broadbill	NT
50.	<i>Calyptomena viridis</i>	Green Broadbill	NT
51.	<i>Oriolus xanthonotus</i>	Dark-throated Oriole	NT

A3. Biome (AS14 Sunda lowland forest) restricted bird species present in IBA ID017			
No.	Scientific Name	Common Name	IUCN
52.	<i>Pericrocotus igneus</i>	Fiery Minivet	NT
53.	<i>Philentoma pyrhoptra</i>	Rufous-winged Philentoma	LC
54.	<i>Hemipus hirundinaceus</i>	Black-winged Flycatcher-shrike	LC
55.	<i>Aegithina viridissima</i>	Green Iora	NT
56.	<i>Rhipidura perlata</i>	Spotted Fantail	LC
57.	<i>Platysmurus leucopterus</i>	Malay Black Magpie	LC
58.	<i>Tricholestes criniger</i>	Hairy-backed Bulbul	LC
59.	<i>Setornis criniger</i>	Hook-billed Bulbul	VU
60.	<i>Alophoixus ochraceus</i>	Ochraceous Bulbul	LC
61.	<i>Alophoixus bres</i>	Brown-cheeked Bulbul	LC
62.	<i>Iole olivacea</i>	Buff-vented Bulbul	NT
63.	<i>Ixos malaccensis</i>	Streaked Bulbul	NT
64.	<i>Pycnonotus simplex</i>	Cream-vented Bulbul	LC
65.	<i>Pycnonotus brunneus</i>	Red-eyed Bulbul	LC
66.	<i>Pycnonotus plumosus</i>	Olive-winged Bulbul	LC
67.	<i>Pycnonotus erythroptalmos</i>	Spectacled Bulbul	LC
68.	<i>Cyanoderma erythropterus</i>	Chestnut-winged Babbler	LC
69.	<i>Stachyris nigricollis</i>	Black-throated Babbler	NT
70.	<i>Stachyris maculata</i>	Chestnut-rumped Babbler	NT
71.	<i>Stachyris poliocephala</i>	Grey-headed Babbler	LC
72.	<i>Malacopteron affine</i>	Sooty-capped Babbler	NT
73.	<i>Malacopteron albogulare</i>	Grey-breasted Babbler	NT
74.	<i>Malacopteron magnirostre</i>	Moustached Babbler	LC
75.	<i>Malacopteron magnum</i>	Rufous-crowned Babbler	NT
76.	<i>Kenopia striata</i>	Striped Wren-babbler	NT
77.	<i>Trichastoma bicolor</i>	Ferruginous Babbler	LC

A3. Biome (AS14 Sunda lowland forest) restricted bird species present in IBA ID017

No.	Scientific Name	Common Name	IUCN
78.	<i>Trichastoma rostratum</i>	White-chested Babbler	NT
79.	<i>Trichastoma malaccense</i>	Short-tailed Babbler	NT
80.	<i>Pellorneum nigrocapitatum</i>	Black-capped Babbler	LC
81.	<i>Trichixos pyrropygus</i>	Rufous-tailed Shama	NT
82.	<i>Cyornis umbratilis</i>	Grey-chested Jungle-flycatcher	NT
83.	<i>Cyornis olivacea</i>	Fulvous-chested Jungle-flycatcher	LC
84.	<i>Cyornis turcosus</i>	Malaysian Blue Flycatcher	NT
85.	<i>Chloropsis sonnerati</i>	Greater Green Leafbird	VU
86.	<i>Chloropsis cyanopogon</i>	Lesser Green Leafbird	NT
87.	<i>Prionochilus thoracicus</i>	Scarlet-breasted Flowerpecker	NT
88.	<i>Prionochilus percussus</i>	Crimson-breasted Flowerpecker	LC
89.	<i>Dicaeum everetti</i>	Brown-backed Flowerpecker	NT
90.	<i>Arachnothera crassirostris</i>	Thick-billed Spiderhunter	LC
91.	<i>Arachnothera robusta</i>	Long-billed Spiderhunter	LC
92.	<i>Arachnothera flavigaster</i>	Spectacled Spiderhunter	LC
93.	<i>Arachnothera modesta</i>	Grey-breasted Spiderhunter	LC
94.	<i>Anthreptes simplex</i>	Plain Sunbird	LC
95.	<i>Anthreptes rhodolaemus</i>	Red-throated Sunbird	NT



**Crimson - winged Woodpecker**  
(*Picus puniceus*)

Photo : Prayitno Goenarto

**Table 2. IBA Protected Area**

Protected Area	Designation	Area (ha)	Relationship with IBA	Overlap with IBA (ha)
Zamrud	National Park	28,238	Protected area on the western boundary of the IBA	28,238
Tasik Besar Serkap	Wildlife Reserve	3,242	Protected area within the IBA	3,242
Tasik Serkap	Wildlife Reserve	6,900	Protected area within the IBA	6,900
Tasik Belat	Wildlife Reserve	2,529	Protected area within the IBA	2,529

**Table 3. Habitats**

IUCN Habitat	Habitat detail	Extent (% of site)
Forest	1.8 Subtropical/tropical swamp forest	100%

**Table 4. Land Use**

Land-use	Extent (% of site)
Production Forestry	21%
Nature Conservation	75%
Community Agriculture	4%

**Table 5. Land use by Management Responsibility**

No.	License Type within IBA	Responsibility	Area (Ha)	%	Land Use
1.	Tasik Besar Serkap Wildlife Reserve	Government	3,242		Nature Conservation
2.	Tasik Serkap Wildlife Reserve	Government	6,900		Nature Conservation
3.	Tasik Belat Wildlife Reserve	Government	2,529		Nature Conservation
4.	Zamrud National Park	Government	28,238		Nature Conservation
5.	Waterbody (rivers, lake and sea)	Government	7,398		Nature Conservation
6.	Unlicensed land	Government	5,608		Nature Conservation
	<b>Sub-Total</b>		<b>53,915</b>	<b>12%</b>	
7.	Village Forest	Community	4,226		Nature Conservation
8.	Community Agriculture Land	Community	18,810		Community Agriculture
	<b>Sub-Total</b>		<b>23,036</b>	<b>5%</b>	
9.	Fiber & Rubber Plantation	Private Sector	92,237		Production Forestry
10.	Conservation Area	Private Sector	139,650		Nature Conservation
11.	Ecosystem Restoration	Private Sector	130,095		Nature Conservation
	<b>Sub-Total</b>		<b>361,982</b>	<b>82%</b>	
	<b>Grand-Total</b>		<b>438,933</b>	<b>100%</b>	

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**Purple Heron**  
(*Ardea purpurea*)

Photo : Caine Delacy



A person is kayaking on a river, surrounded by dense green foliage. The kayaker is wearing a cap and a life vest, and is using a paddle. The water is calm, reflecting the surrounding trees. The scene is peaceful and scenic.

*Crucial to the success of the ecosystem restoration programme is the support and collaboration from RER's multiple stakeholders and partners.*

*Kayaking in Serkap river  
Photo : Caine Delacy*