

Javan Rhino in Jeopardy

Conservation Setbacks in Ujung Kulon National Park



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Trail and fence (forest fragmentation) in the Javan rhino study and conservation area in Ujung Kulon National Park.

Photo: Auriga Nusantara



FOREWORD

We are certain that Indonesia – frequently romanticised using the name Nusantara – refers not only to its territory and human population, but also to its rich biodiversity. Therefore, the loss of one component of this biodiversity should be interpreted, at the very least, as a loss of Indonesia's identity. It was this realization that led to us responding to information and/or requests concerning Javan rhinos by producing this report.

Whilst gathering information, we heard the Ujung Kulon National Park Office or Ministry of Environment and Forestry were in the process of drafting a document we thought would be the Javan Rhino Emergency Action Plan. In fact, what we imagined turned out only to be a four-page circular issued by the Directorate General of Natural Resources and Ecosystem Conservation dated 21 March 2023.

Some of the information in this report is confirmed by the circular. But the technical direction contained within that circular is far from adequate in answering the crisis facing the Javan rhino.

This report would not have materialized without data and information from whistleblowers, provided through interviews and various documents, exposes, images, videos and other forms of relevant information. We would like to express our thanks to all those involved.

All funds used in the preparation of this report; for trips inside and outside town to interview informants, field trips around Ujung Kulon, consultative meetings, writing, designing and printing, were covered entirely by Auriga internal funds.

We hope this report can trigger a fundamental and thorough rethink of Javan rhino conservation in Ujung Kulon National Park!

Sincerely,
Auriga Nusantara

ABBREVIATIONS AND TERMS

Camera trap	: A camera fitted with an infrared motion sensor trigger
Conservation DG	: Directorate General of Natural Resources and Ecosystem Conservation; the directorate general under the Ministry of Environment and Forestry responsible for managing conservation areas and species conservation in Indonesia
JRSCA	: Javan Rhino Study and Conservation Area; an area inside Ujung Kulon National Park that the park office calls a rhino conservation area (even though Ujung Kulon National Park itself was established in a framework of rhino conservation). In addition to this acronym, the area is sometimes called “ <i>Jarhisca</i> ”, and sometimes by its new name and acronym; Suaka Badak Nasional (SBN) or National Rhino Sanctuary (NRS)
Minister of Environment and Forestry	: The minister that heads the Ministry of Environment and Forestry
MoEF	: Ministry of Environment and Forestry; the ministry responsible for managing the forest estate and conservation affairs in Indonesia. Conservation areas, including national parks, fall inside the forest estate
NRS	: National Rhino Sanctuary (<i>Suaka Badak Nasional</i> —SBN); <i>see</i> JRSCA
Second habitat	: <i>see</i> second population
Second population	: An initiative/proposal aimed at establishing Javan rhino habitats outside Ujung Kulon National Park. In concept, these areas will be selected from the Javan rhino’s historical range in western Java and southern Sumatra
UKNP	: Ujung Kulon National Park; the last remaining reserve of the Javan rhino (<i>Rhinoceros sondaicus</i>)
UKNP Management Office	: Ujung Kulon National Park Office; the technical implementation unit under the Ministry of Environment and Forestry responsible for managing Ujung Kulon National Park



A Javan rhino
(*Rhinoceros sondaicus*)
recorded using a camera
trap in Ujung Kulon
National Park

Source: M. Griffiths/
WWF, 1993

I. ALL IS NOT WELL WITH INDONESIA'S RHINOS

Two of the world's five rhinoceros species live in Indonesia: the Javan rhinoceros (*Rhinoceros sondaicus*) and the Sumatra rhinoceros (*Dicerorhinus sumatrensis*). The black rhinoceros (*Diceros bicornis*) and white rhinoceros (*Ceratotherium simum*) live in Africa, while the Indian rhinoceros (*Rhinoceros unicornis*) is found in India and Nepal. Sumatran rhinos previously lived in Malaysia too, but since becoming extinct there,¹ the species is now found only in Sumatra and Kalimantan.

Only two individuals remain in Kalimantan: a female named Pari living in the wild, and another female named Pahu, who was captured from the wild in 2019, and now lives in the Borneo Rhino Sanctuary in West Kutai, East Kalimantan. Meanwhile, it seems certain that no more than 60 individuals remain in separate populations in Sumatra: around 40 in the Leuser Ecosystem in Aceh, and around 20 in Way Kambas National Park in Lampung: eight of which are in the Sumatran Rhino Sanctuary, and the remainder living wild inside the park.

Government reports always claim that Sumatran rhinos are still present in Bukit Barisan Selatan National Park in Lampung, but no conclusive evidence of their presence has been found in recent years, so in all likelihood they are already extinct there. With (i) small but disbursed populations; (ii) unconvincing management performance; and (iii) high levels of poaching in their natural habitats, the Sumatran rhino has become one of the world's most threatened species.

There were three subspecies of Javan rhinoceros: the Myanmar rhino (*Rhinoceros sondaicus inermis*), Vietnam rhino (*Rhinoceros sondaicus annamiticus*) and Banten rhino

¹ Sumatran rhinos became extinct in the wild in Malaysia in 2015 (<https://www.dw.com/en/sumatran-rhino-becomes-extinct-in-malaysia-as-lone-survivor-dies/a-51386277>), and completely extinct in Malaysia in 2017 (<https://www.cbsnews.com/news/the-sumatran-rhino-is-now-extinct-in-malaysia/>).

(*Rhinoceros sondaicus sondaicus*). In 1920, the Myanmar rhino became extinct, followed by the Vietnam rhino 90 years later. Now, the only remaining Javan rhino subspecies is the Banten rhino, which is only found in Ujung Kulon National Park in Indonesia's Banten Province.

As only one population remains in one habitat enclave, since at least three decades ago, experts and conservationists have frequently proposed creating additional Javan rhino populations, which in conservation circles are called second populations or second habitats. These second population are deemed necessary as Ujung Kulon and the surrounding area has a history of tsunamis triggered by volcanic eruptions on Krakatoa. A history of anthrax affecting livestock around Ujung Kulon and/or Banten is a further reinforcing reason, particularly as the causes of many Banten rhino deaths to date have yet to be fully explained.

This second population idea is nothing new, as Javan rhinos were previously present in Java, Sumatra, Peninsula Malaysia, Myanmar, Thailand, Vietnam, Laos, Cambodia, and Assam in India. However, despite being mentioned explicitly in official documents, including rhino conservation action plans, until now there has been no significant progress regarding additional Javan rhino populations.

There is no growth trend in the Javan rhino population in Ujung Kulon National Park, as apparent from numbers remaining relatively stagnant. Even though there are births almost every year, estimates of the Javan rhino population in Ujung Kulon National Park have never exceeded 80 individuals. It is worth noting that Ujung Kulon National Park is the conservation area with the most organized monitoring system, especially in terms of the number and density of observation cameras. All of these cameras, more than 220 monitoring throughout the year, detected only 63 individual Javan rhinos in 2018; the year with the highest number of sightings.

Figure 1. **The Sumatran rhino and Javan rhino**

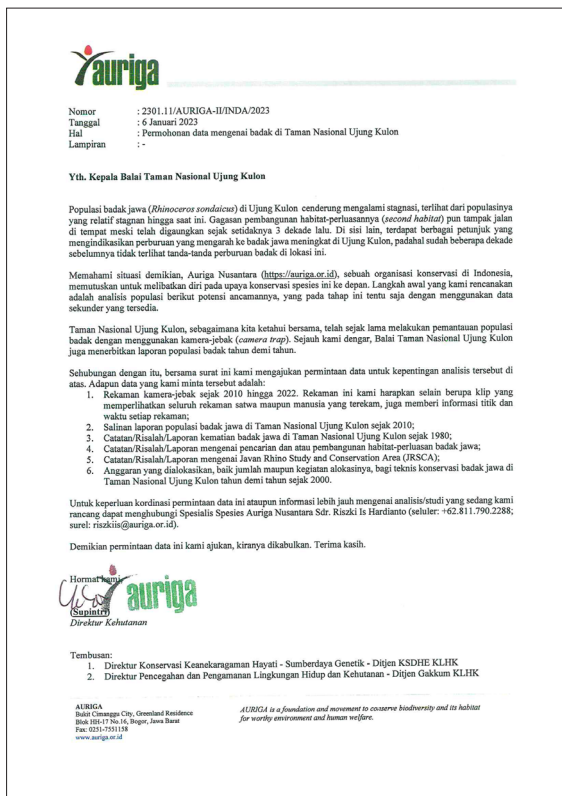


Javan Rhino	English name	Sumatran Rhino
Badak Jawa	Indonesian name	Badak Sumatera
<i>Rhinoceros sondaicus</i>	Scientific name	<i>Dicerorhinus sumatrensis</i>
Critical (CR)	Conservation status	Critical (CR)
Relatively stable	Population trend	Falling
< 80 individuals	Population	< 60 individuals
Ujung Kulon	Distribution	Sumatra and Kalimantan

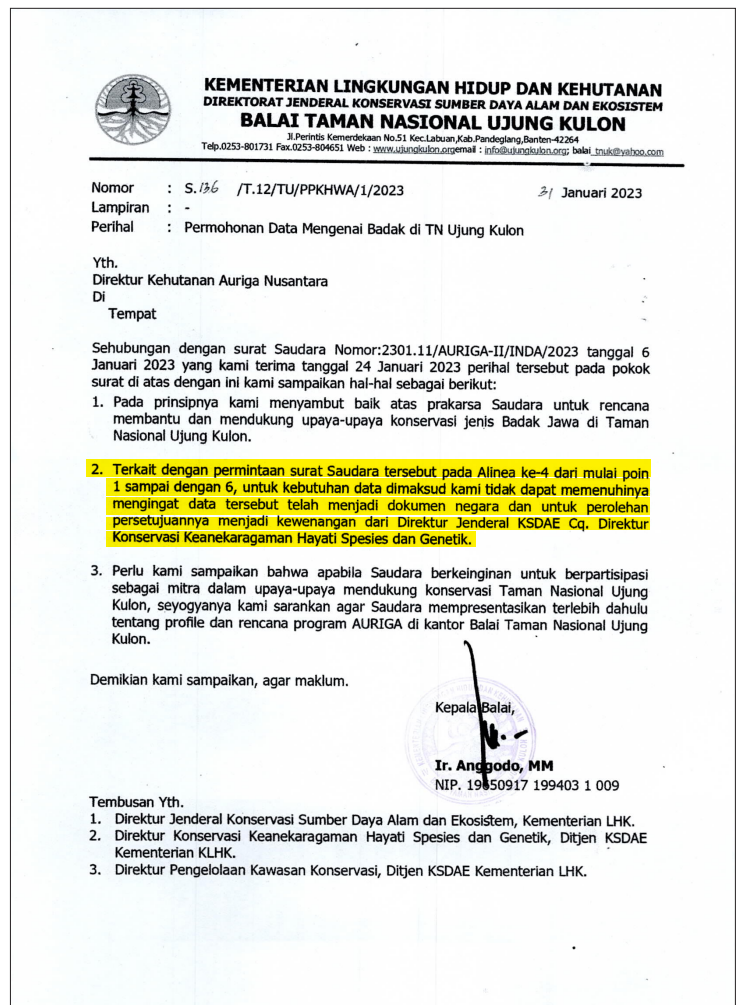
II. ALARM BELLS ARE RINGING IN UJUNG KULON

Over the past year, on more than one occasion Auriga Nusantara received bad news in relation to Javan rhinos in Ujung Kulon National Park. The bearers of this information included communities around Ujung Kulon, staff in the Ujung Kulon National Park Office, rhino conservationists, and even officials from the Ministry of Environment and Forestry in Jakarta. In short, they were all parties with in-depth knowledge of Javan rhino conservation activities in Ujung Kulon National Park. Their message was consistent: that Javan rhinos in Ujung Kulon are in danger!

On receiving this information, Auriga decided to gather information to form the basis for its next move. Information was gathered systematically from many parties. A letter requesting information was also sent to the Ujung Kulon National Park Office, which, unfortunately, it completely failed to fulfil.



A letter requesting data on Javan rhinos from Auriga Nusantara to the Ujung Kulon National Park Office in January 2023. The response from the Ujung Kulon National Park Office states that it is unwilling to share any of the requested information for the reason that such data constitutes "documentation belonging to the state".





III. METHODOLOGY

Findings and/or information in the section below were prepared based on information gathered from September 2022 to March 2023. Information gathering took place in Jakarta, Bogor, Pandeglang, Labuan (where the Ujung Kulon National Park Office is located), and villages around Ujung Kulon National Park in Cimanggu and Sumur subdistricts, Pandeglang Regency, Banten Province.

The gathered information came in various forms: research reports, presentations given during formal events, videos and photos from the field, and reports from various institutions. To supplement these, we conducted systematic interviews with figures involved in the conservation of Indonesian rhinos, including the Javan rhino. A total of 24 such figures were interviewed, covering all stakeholders in Javan rhino conservation: management authorities (the Ujung Kulon National Park Office and/or Ministry of Environment and Forestry), Javan rhino conservation activists and practitioners, rhino conservation donors, academics, and community figures partnering Ujung Kulon National Park managers.

The number of interviewees was relatively small considering the Javan rhino was the pioneer species for conservation in Indonesia, which began with WWF International sending Dr Rudolph Schenkel and his wife, Dr Lotte Schenkel, to research Javan rhinos in Ujung Kulon more than half a century ago, making it the first WWF field project. However, and this should be noted for improving public involvement in the future, all of the interviewed stakeholders represent all conservationists of the Javan rhino population in Ujung Kulon.

For any information that varied in any way or had minor inconsistencies, we sought further clarification to explain any discrepancies and draw appropriate conclusions. Interestingly, we received no contradictory information, which indicates that all those interviewed were aware of – or had at least heard about – all the information we outline in the following section.



A consultative meeting on Auriga Nusantara team findings. A simultaneous virtual space was provided for stakeholders who had been interviewed, but were unable to attend in person so they could relay their clarifications/verifications.

*Photo: Ghina Zafira/
Auriga Nusantara*

To ensure the validity of our findings, on 3 March 2023 we staged a consultative meeting with all those we had interviewed, and invited the Ujung Kulon National Park Office and the Ministry of Environment and Forestry's Directorate General of Natural Resources and Ecosystem Conservation to attend. The main findings listed below were relayed to all invitees.

We should add that species conservationists in Indonesia are not currently free to relay information openly. Bureaucrats or Ministry of Environment and Forestry employees are fearful of being “Timbul-ized”; civil society groups of being “WWF-ized”; and academics of being “Erik-ized”. Timbul-ized refers to the situation that befell Timbul Batubara, former head of the Papua Provincial Natural Resources Conservation Agency (BBKSDA), who was suddenly moved on by his superiors, apparently for signing a collaboration agreement with WWF Indonesia, which was out of favour with the Minister of Environment and Forestry. WWF-ized refers to the unilateral dissolution of cooperation with WWF Indonesia by the Ministry of Environment and Forestry, which was even accompanied by other actions constraining WWF Indonesia activities. Meanwhile, Erik-ized refers to the situation that befell Erik Meijaard and colleagues who were prohibited from conducting research in Indonesia's forest estate (read: managed by the Ministry of Environment and Forestry).

Similar phenomena could also befall Javan rhino conservationists. So, to ensure their safety, and particularly the safety of their work, which impacts the survival Javan rhino, the names of all interviewees and data sources remain anonymous, and are referred to as “Anonymous Whistleblowers”, in this publication.

IV. FINDINGS

#1. Indications of increased poaching in Ujung Kulon National Park

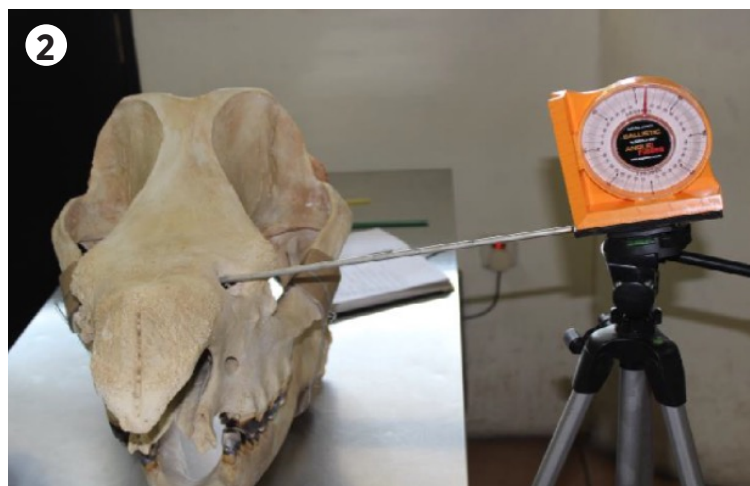
The death of a male rhino named Samson in 2018 indicated the presence of poachers in Ujung Kulon, as a hole was found in his skull. Though not thought to be the direct cause of death, the hole was suspected of being caused by a bullet. Yet, over the last three decades, not one rhino death has been linked to poaching.



A snare found in Ujung Kulon National Park. The diameter and height of the snare indicates it was targeted at Javan rhinos, or at the very least, at large mammals.

Photo: Anonymous Whistleblowers





An indication of rhino poaching was also visible from the discovery of a snare which had been set at Javan rhino neck height, or at the very least at the neck height of other large mammals.

There is even an image showing holes in the upper body of a Javan rhino. Many of those we interviewed suspected them of being bullet holes. But Ujung Kulon National Park officers we encountered argued that they could easily have been caused by bamboo or a similar sharp object.

Analyses of images we received show people armed with rifles inside Ujung Kulon National Park in 2021–2022, almost all of which were inside the park’s Javan rhino habitat enclaves.

This increase in poaching is thought to be due to a slackening of security in Ujung Kulon National Park, particularly as increasing numbers of field posts are either unmanned, or even no longer operational at all. A relatively unimpeded access route to the jungle in Ujung Kulon is by sea from the south.

The increased scarcity or even extinction of the Sumatran rhino in Lampung warrants serious consideration, as professional rhino poachers are highly likely to have turned their sights on Ujung Kulon, which is not far from Lampung. The suspicion that

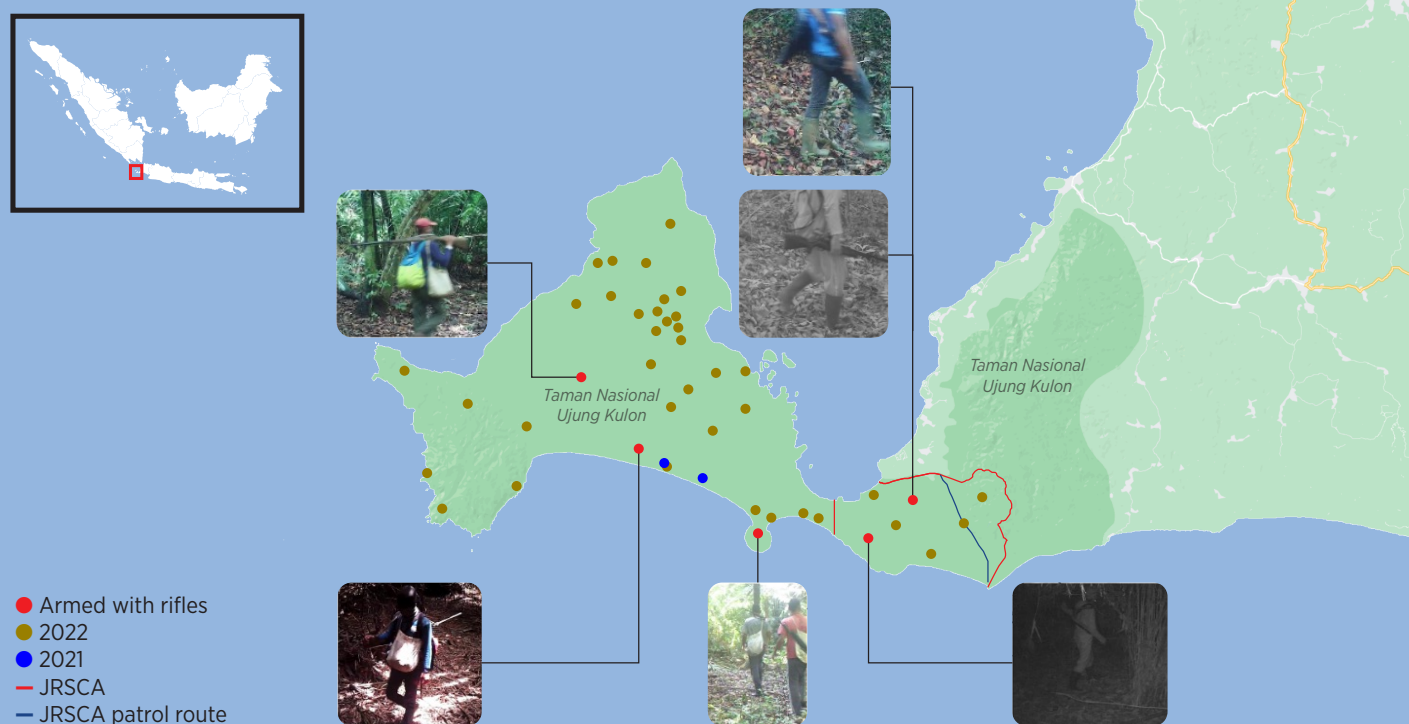


(1, 2) A hole piercing the skull of a Javan rhino named Samson found dead in Ujung Kulon in 2018

(3) Holes in the upper body of a Javan rhino. Despite UKNP officers arguing the holes could have been caused by bamboo, most of those we interviewed suspected they were bullet holes.

Photo: Anonymous Whistleblowers

Figure 2. **Illegal activities recorded by camera traps in Javan rhino habitat inside Ujung Kulon National Park 2021–2022.** It is apparent that people entering the park illegally have reached the entire rhino habitat area on the Ujung Kulon Peninsula to the west of JRSCA, with some of them even carrying rifles. The JRSCA area – which is also subject to illegal entry – is not part of the existing rhino habitat in Ujung Kulon National Park. | *Source: Anonymous Whistleblowers*



professional poachers are present is clear from the increasing numbers of camera traps going missing, with 20 disappearing in 2022; the highest number lost in a single year in Ujung Kulon National Park.

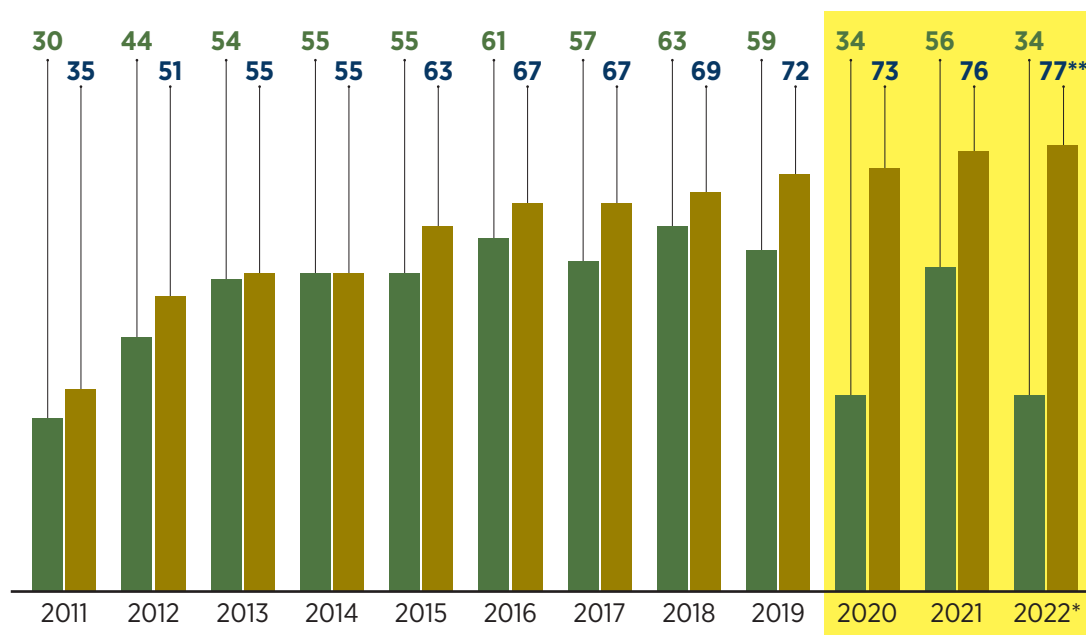
#2. Indications of a falling Javan rhino population in Ujung Kulon

“The births of two Javan rhinos proves that through the Ministry of Environment and Forestry, Indonesia continually strives to increase the Javan rhino population and ensure it will not become extinct,” wrote Minister of Environment and Forestry, Siti Nurbaya through her Instagram account, siti.nurbayabakar on 18 December 2022 responding to the discovery of two infant rhinos in Ujung Kulon National Park. Glorification such as this almost always happens every time a new Javan rhino infant is discovered.

Unfortunately, the reality on the ground is not so rosy, and even runs contrary to this glorification!

That Javan rhinos are born almost every year in Ujung Kulon is not in dispute, and for this we should be thankful, as it signifies that natural reproduction in the wild can

Figure 3. **Javan rhino population dynamics in Ujung Kulon National Park since 2011.** Rhinos recorded by camera traps in Ujung Kulon vs population figures announced by the Ujung Kulon National Park Office or Ministry of Environment and Forestry: In the last four years, despite numbers recorded by camera traps always being lower than in 2018, the Ujung Kulon National Park Office or Ministry of Environment and Forestry consistently publicize figures suggesting the population is increasing. | *Source: Anonymous Whistleblowers*



* Camera trap data to August; remaining data is still being processed

** Based on explanations from the Ujung Kulon National Park Office in the media

■ Numbers of Javan rhinos detected by camera traps

■ Population numbers announced by the Ministry of Environment and Forestry





still be relied upon. This is apparent from the births of 37 rhinos in Ujung Kulon National Park since 2011. However, population dynamics are not only measured by birth rates; death rates should also be taken into consideration, including those resulting from poaching, as should the quality of the population. The table below indicates the Javan rhino population tending to be stagnant, and even falling since 2018.

Despite findings from camera traps showing fewer rhinos being recorded since 2018, the Ministry of Environment and Forestry always announces that the population is growing. A pertinent question to pose is how the ministry produces the figures it publicizes.



Figure 4. **Javan rhinos not recorded by camera traps in Ujung Kulon National Park since 2019.** Three of the 18 Javan rhinos not recorded consistently by camera traps since 2019 have been found dead. For programme effectiveness moving forward, it is best to assume the other 15 rhinos are already deceased, either as the result of disease or poaching, so the rhino population management response can be far better into the future. | Source: Anonymous Whistleblowers

No.	Rhino name	Sex	Year		
			2019	2020	2021
1	Dewi	Betina	✓	✗	✗
2	Rawing	Jantan	✗	✗	✗
3	Puri	Betina	✓	✗	✗
4	Puspa	Betina	✗	✗	✗
5	Dipati	Jantan	✓	✓	✗
6	Dwipa	Jantan	✓	✗	✗
7	Silva	Betina	✓	✗	✗
8	Ratna	Betina	✓	✗	✗
9	Bayu	Jantan	✗	✗	✗
10	Mantili	Betina	✓	✗	✗
11	Bety	Betina	✓	✗	✗
12	Melati	Betina	✓	✗	✗
13	Satria	Jantan	✓	✗	✗
14	Mahesa	Jantan	✓	✗	✗
15	Wira	Jantan	✓	✗	✗
16	Bagas	Jantan	✓	✗	✗
17	Prabu	Jantan	✓	✗	✗
18	Febri	Betina	✓	✗	✗

 Found dead in 2021
  Found dead in 2020
  Recorded by camera traps
  Not recorded by camera traps

Through more in-depth investigations, we found some startling information: 17 Javan rhinos were not recorded by camera traps in 2021, and two of those were found dead that same year. It turned out that 16 of them had not been recorded by camera traps the previous year either. However, there was no hint of the National Park Office or the Ministry of Environment and Forestry announcing any of this information to the public.

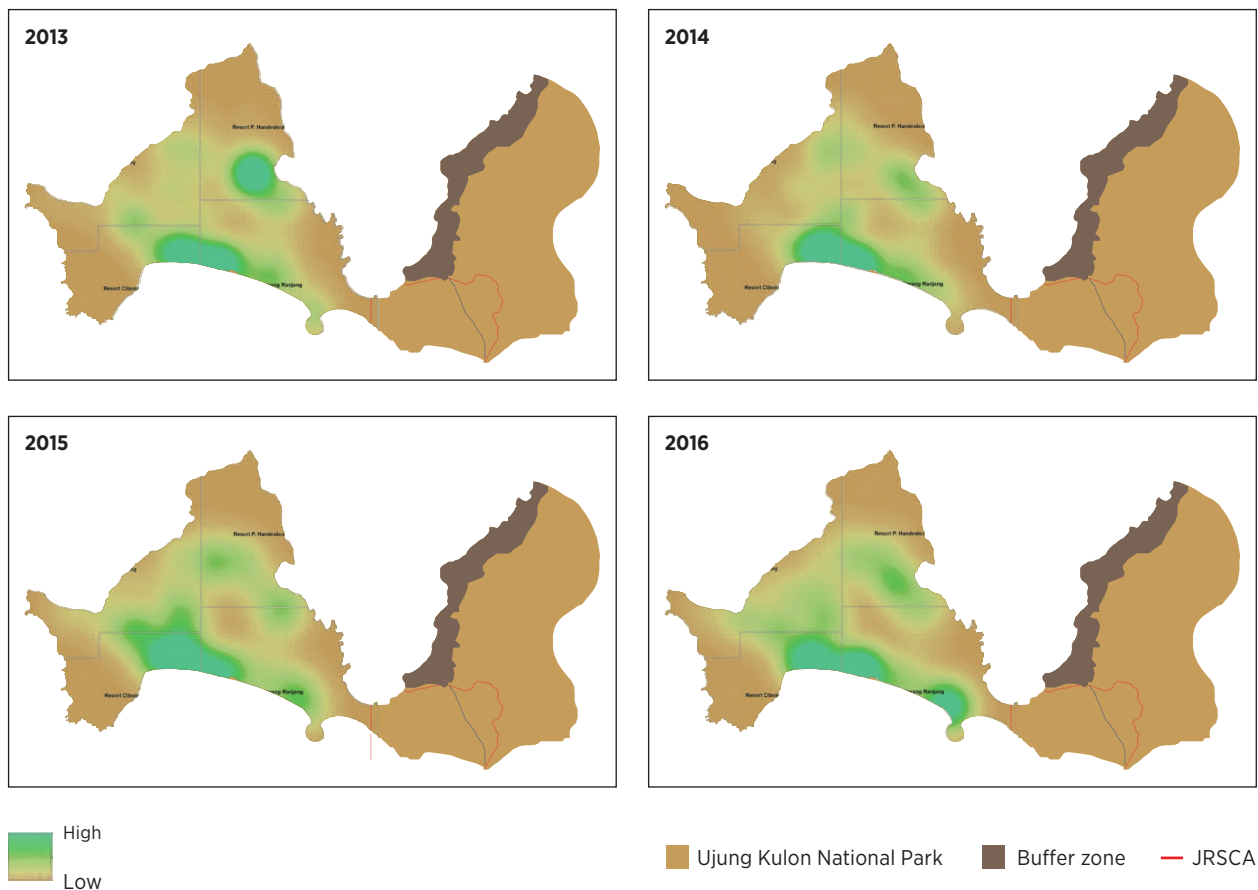
The year 2020 marked the beginning of the Covid-19 pandemic, which resulted in adjustments to government budgets and restrictions on movements, thereby causing a significant reduction in the number of camera traps that could be installed in Ujung Kulon National Park. This was rectified the following year, following panic in the Ujung Kulon National Park Office over the large number of Javan rhinos not being recorded. So, 220 camera traps were installed in Ujung Kulon in 2022. Nevertheless, 15 individuals were still not recorded.

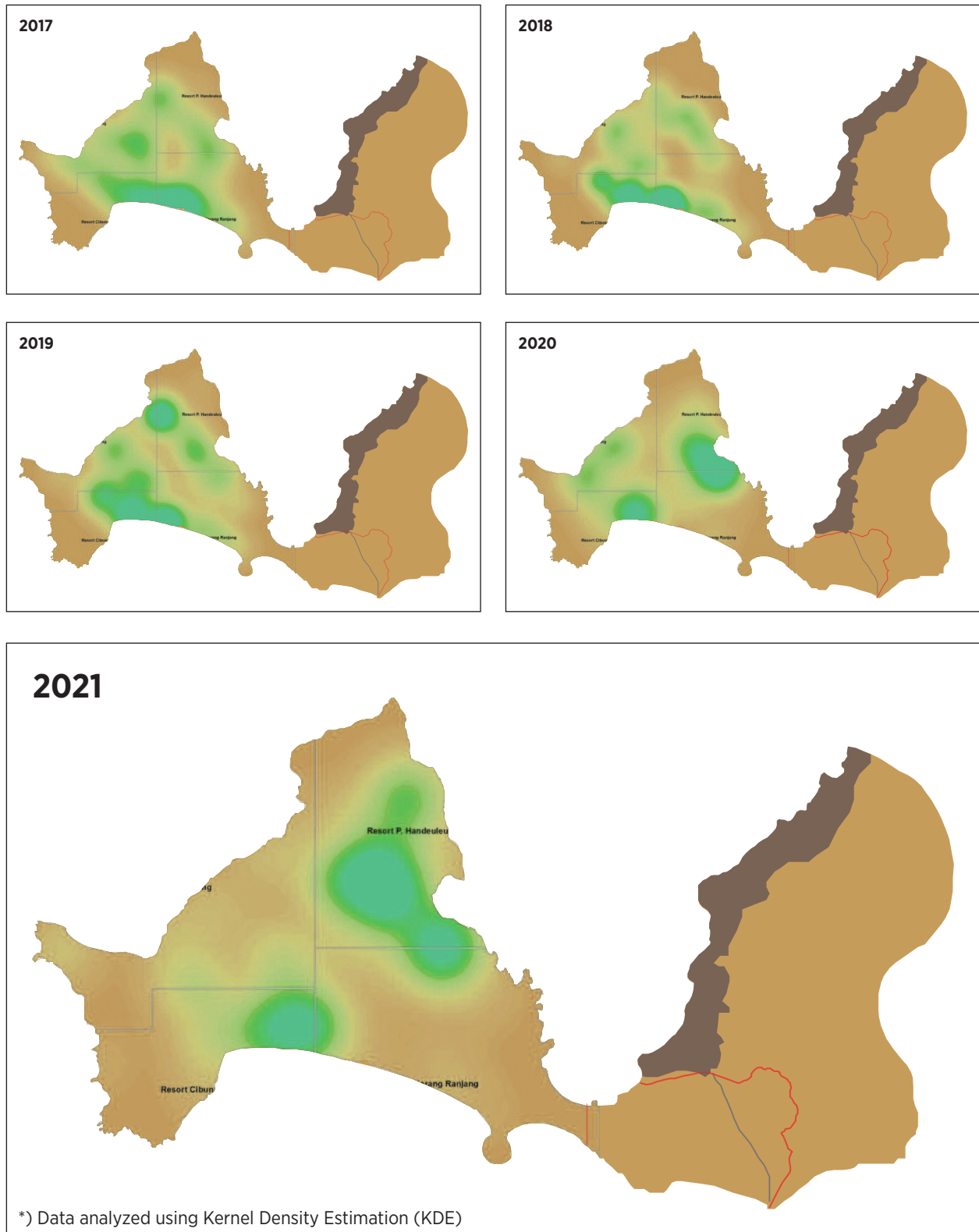
The table above shows that 7 of the 15 unrecorded rhinos are females. The loss of such a large number of females in the population is devastating.

Indications of the falling Javan rhino population in Ujung Kulon National Park are also apparent from graphs on Javan rhino population density spanning from 2013–2021, which show the Javan rhino population in the southern habitat enclave appearing to have disappeared.

Data from the field supports the above, but the glorification approach taken by the Ministry of Environment and Forestry runs contrary to this, and has the potential to widen the Javan rhino extinction vortex.

Figure 5. **Indications of fewer Javan rhino enclaves in Ujung Kulon National Park.** Rhino density dynamics in various habitat enclaves in Ujung Kulon National Park: From their distribution, it appears that rhinos only remain present in a few places. The enclave in the south-eastern part of the park appears to have disappeared, with two Javan rhinos found dead in that area: a male rhino named Samson in 2018; and a female called Febri in 2020. Yet, this location is the habitat enclave closest to the site of the JRSCA project, which has consumed funds of more than IDR 100 billion. | *Source: Anonymous Whistleblowers*







#3. A string of Javan rhino deaths has never been thoroughly investigated

In contrast to its glorification of rhino births, the Ministry of Environment and Forestry's response to Javan rhino deaths tends to be muted. From information we gathered, there have been at least 11 known Javan rhino deaths – 4 female and 7 Male – in Ujung Kulon National Park since 2011. Of this number, only three deaths were publicized by the Ministry of Environment and Forestry. Four deaths appeared in media stories (but were not officially publicized by the Ujung Kulon National Park Office and/or Ministry of Environment and Forestry). Four of the Javan rhino deaths were neither reported by the media nor publicized by the Ujung Kulon National Park Office or Ministry of Environment and Forestry.

It turned out that none of these deaths were thoroughly investigated, or their causes determined. Yet, such information would have been extremely useful for anticipating future (unnatural) occurrences and educating society on the real condition of the Javan rhino population in Ujung Kulon.

In February 1982, five Javan rhinos were found dead in Ujung Kulon. International experts brought in by IUCN and WWF to investigate suspected the cause of death to be anthrax or another infectious disease. This suspicion was reinforced by the deaths of 350 goats and 50 water buffaloes in November 1981 in villages around Ujung Kulon.²

With the deaths of three Javan rhinos in 2010, the blood parasite *Trypanosoma evansi*



A male rhino named Manggala found dead in Ujung Kulon National Park in 2019. His position clearly indicates he did not die of old age. Looking at his size, as also analysed from camera images, this rhino was still a juvenile or infant.

Source: KLHK (in Mongabay)

² World Wildlife Fund, 1982. **Mystery of dead Javan rhinos remains.** Malayan Naturalist 36(2): 40

Figure 6. **Known Javan rhino deaths in Ujung Kulon National Park since 2012.** The large number of female and infant deaths should be a warning sign for the Javan rhino population in Ujung Kulon National Park | Source: Anonymous Whistleblowers

No	Name	Sex	Age class	Year of death									
				2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
1	Sudara	Jantan	Anakan										
2	Iteung	Betina	Dewasa										
3	Sultan	Jantan	Dewasa										
4	Arjuna	Jantan	Dewasa										
5	Demang	Jantan	Dewasa										
6	Samson	Jantan	Dewasa										
7	Sari	Betina	Dewasa										
8	Manggala	Jantan	Anakan										
9	Febri	Betina	Remaja										
10	Wira	Jantan	Dewasa										
11	Puspa	Betina	Dewasa										

■ Not publicized by KLHK, and did not appear in media reports,

■ Not publicized by KLHK, but appeared in media reports

■ Publicized by KLHK

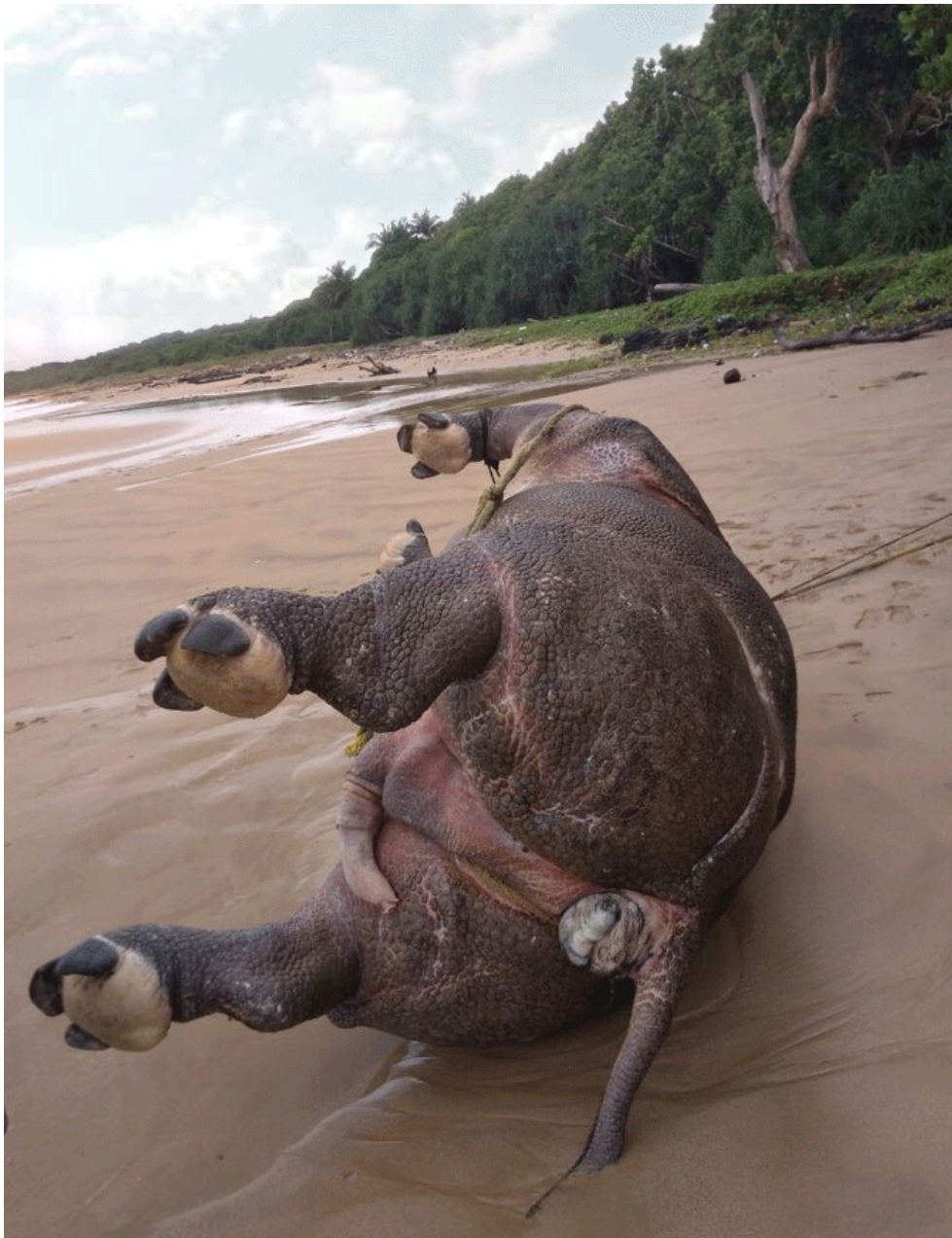
was found in tabanus flies.³ Observations of 104 water buffaloes in villages around Ujung Kulon National Park in 2017 found *Trypanosoma surra* present in 91 individuals.⁴ *Trypanosoma* is a spectre that haunts Sumatran rhino conservationists in Malaysia, as this parasite was suspected of causing the deaths of five Sumatran rhinos over an 18-day period in a captive breeding facility in Selangor, Malaysia in October and November 2003.⁵

The high rate of Javan rhino deaths in Ujung Kulon should be a serious cause for concern. Moreover, from secondary information gathered to date, of all the deaths

³ Hariyadi ARS, Handayani, Priambudi A, Setiawan R. 2011. **Investigation of the death of Javan rhinoceros (*Rhinoceros sondaicus*) in Ujung Kulon National Park.** Proceedings of 5th ASVP (Asian Society of Veterinary Pathology) conference and congress: 32–34

⁴ Wilson SG, Biggs D and Kark S. 2021. **Protecting an icon: Javan rhinoceros frontline management and conservation.** <https://www.cambridge.org/core/journals/oryx/article/protecting-an-icon-javan-rhinoceros-frontline-management-and-conservation/98BE93CF6F9F3BDB2E5EE12A9EA650CD>. Accessed on 27 March 2023.

⁵ Vellayan S, Mohamad A, Radcliffe RW et al. **Trypanosomiasis (*surra*) in the captive Sumatran rhinoceros (*Dicerorhinus sumatrensis*) in peninsular Malaysia.** Proceedings of the International Conference of the Association of Institutions for Tropical Veterinary Medicine; 2004; Columbus, OH, USA. pp. 187–189.



A male rhino named Samson found dead on Karang Ranjang beach in Ujung Kulon. From his position, it is clear he did not die of natural causes, and most likely as the result of disease. | Source: Ujung Kulon National Park documentation

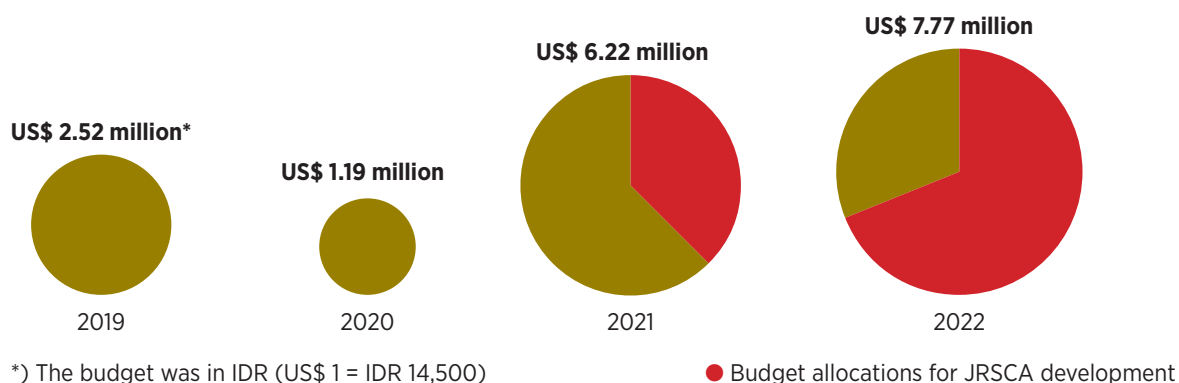
Source: Ujung Kulon National Park documentation (in DetikNews)

discovered since the year 2000, only one could conclusively be attributed to old age, while it is certain that no deaths from poaching had occurred up until 2018. Consequently, it is reasonable to suspect that the main cause of Javan rhino deaths in Ujung Kulon has probably been disease. For that reason, the lack of any thorough investigation into every known Javan rhino death is a fatal mistake, as it provides an inadequate reference for Javan rhino management.

#4. Management of Ujung Kulon National Park is on the wrong track

The Ujung Kulon National Park budget has increased steadily over the last four years, except in 2020 due to the Covid-19 pandemic. The increases were significant in 2021 and 2022, as the table below shows. However, most of this IDR 256.6 billion was not for Javan rhino conservation technical activities, but to build the Javan Rhino Study and

Figure 7. **Ujung Kulon National Park Office budget allocations, 2019–2022.** Almost half of these budgets have been allocated for building the Javan Rhino Sanctuary and Conservation Area (JRSCA), yet the area in question is not an existing rhino habitat. | *Source:* Directorate General of Natural Resources and Ecosystem Conservation (Ditjen KSDAE) performance reports (2019, 2022) and KSDAE Statistics (2020, 2021).



Conservation Area (JRSCA); construction or maintenance of other infrastructure; for the procurement and maintenance of vehicles; and for staff salaries.

JRSCA development should be of note in its own right since its direction is unclear, despite absorbing such a huge budget. In 2021, the budget allocated for JRSCA development was US\$ 2.33 million, increasing to US\$ 5.35 million in 2022.⁶ Yet, not only is the JRSCA area not in an existing rhino habitat, in 2011 it was already subject to strong opposition from civil society groups and academics as it bisected Ujung Kulon with its fence.

The Ujung Kulon National Park Office and JRSCA supporters feel the facility is necessary for a second population development programme as it can be used to house Javan rhinos temporarily before they are translocated to their new habitats. However, JRSCA is unnecessary in Ujung Kulon National Park as such facilities should be located in new habitat areas, as transit points for Javan rhinos before their release into the surrounding natural forest.

Experts and Javan rhino conservationists have voiced the need for additional Javan rhino habitats since at least 1984/1986, and the idea has always appeared in official Ministry of Environment documents on plans for rhino conservation. But Ministry of Environment and Forestry performance in implementing the idea has been extremely poor, and second population locations remain completely unclear until now.

Yet, if these second population were a priority, what should have been done, in order, is: (1) designating second population areas; (2) developing temporary facilities – like JRSCA – in those designated areas; (3) selecting individual Javan rhinos in UKNP to be moved; (4) translocating the selected Javan rhinos to temporary facilities in the destination habitats; (5) analysing and habituating the Javan rhinos in temporary facilities, until (6) releasing them in stages into the surrounding forest; and (7) monitoring their populations in the new habitats.

⁶ General Procurement Plan System <https://sirup.lkpp.go.id/sirup/ro/rekap/klpd/K37> accessed on 4 April 2023.



The irrelevance of JRSCA to Javan rhino conservation is also apparent from the rhino density dynamics in Ujung Kulon shown in Figure 5 above. The lost habitat enclave in the south-eastern section of the park is the closest to the JRSCA area, where a male rhino named Samson was found dead on 23 April 2018, and a female named Febri on 5 February 2020.



The JRSCA trail and fence bisecting (fragmenting) Ujung Kulon National Park

The structure and positioning of Ujung Kulon National Park Office staff do not reflect Javan rhino conservation being a priority, as no staff are allocated specifically, or for the long term, to technical Javan rhino conservation activities. Technical staff are moved on after a short time, while policymakers, particularly office heads, tend to lack any background in, or technical capacity for conservation. As a result, in addition to Javan rhino conservation being dominated by political considerations rather than conservation techniques, there is little continuity in knowledge or management of Javan rhino conservation in the Ujung Kulon National Park Office.

Photo: Auriga Nusantara

In effect, up to now, technical activities around Javan rhino conservation in Ujung Kulon National Park have been highly dependent on civil society organizations like WWF, YABI and ALERT, for activity initiatives, data and information processing, and even funding (because, as discussed above, little of the state budget expended by the national park office goes towards technical Javan rhino conservation activities). YABI helps with patrols, while ALERT helps with processing data and information on Javan rhinos.

In 2012, the national park office decided that monitoring using camera traps would be fully funded by the state budget. The funding for scores of nearby communities involved in these activities, which had previously been funded and managed by WWF Indonesia, was taken over by the Ujung Kulon National Park Office. However, work systems and standards of community wellbeing have worsened, leading to the quality of such activities falling drastically.

Based on information we gathered, many nearby villagers, who prior to being recruited as conservation technicians had been wildlife hunters, are no longer involved in Javan rhino conservation activities on the ground. We even found indications that some have returned to hunting and are even involved in poaching.

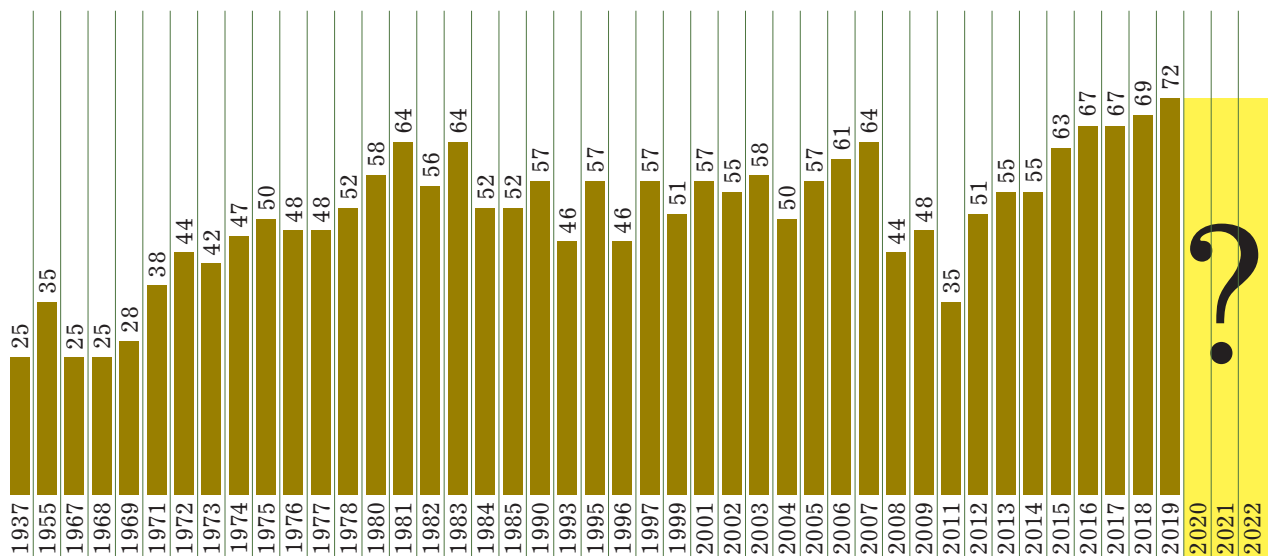
Certainly, national parks do not only manage single species, but in Ujung Kulon National Park other species tend to be neglected. Yet, these species, like the leopard, banteng, Javan gibbon, and others, are also rare. But in the Ujung Kulon National Park Office, there is no available data on these species, let alone any technical activities for their conservation.

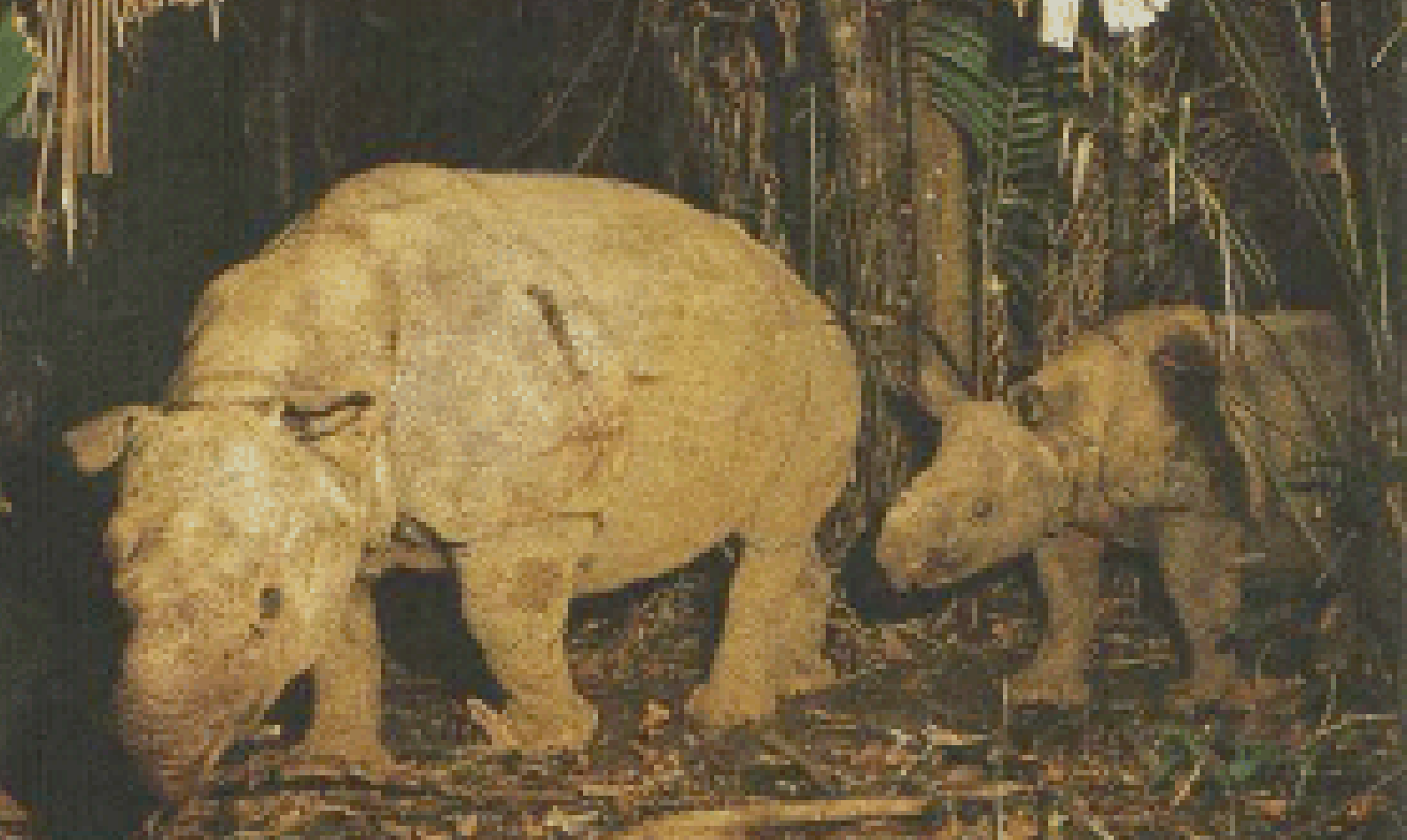
The performance of the Ujung Kulon National Park Office is strongly influenced by the capacity of its office heads appointed by the Ministry of Environment and Forestry. Over the past two decades, the capacity of Ujung Kulon National Park Office heads has tended to fall. Yet, the existence of the Javan rhino is so important for Pandeglang Regency and Banten Province, where Ujung Kulon National Park is located. Therefore, any future Ujung Kulon National Park Office heads should ideally be appointed through fit and proper tests administered by the regional governments and legislative assemblies of Pandeglang Regency and Banten Province.

V. ALL IS NOT YET LOST

“I’m actually ‘happy’ to hear about those 15 Javan rhinos not being recorded, as it signifies the existence of information on every Javan rhino in Ujung Kulon National Park,” said one of the academics we interviewed, who quickly added that what he/she meant by that was that knowledge of individual animals is unavailable in other conservation areas. In other words, the information on Javan rhinos is the most comprehensive in comparison to other protected species.

Figure 8. **Javan rhino population dynamics in Ujung Kulon National Park since 1937.** Considering calculations since 2020 have not been conducted in an academically convincing manner, the population since 2020 shown in this figure is open to question. | *Processed from various sources.*





Inventories of Javan rhinos in Ujung Kulon, as part of their technical conservation activities, have remained relatively consistent for a long time. Hoogerwerf calculated the population in 1937 to be 20–25 individuals, and again in 1955 to be around 30–35 individuals.⁷ Since the early 1960s, IUCN and WWF have sent various researchers to Ujung Kulon, including Lee Merriam Talbot who conducted a Javan rhino census in 1964.⁸ Hunting appeared to increase from 1955, and Hoogerwerf's calculation in 1965 showed Javan rhino numbers falling to 15–20 individuals. Schenkel responded to this situation by recommending tightened security, and in the 1978 Javan rhino census, numbers had increased to 25–26 individuals.

Where population counts had previously involved counting different footprints, since the early 1990s, under the leadership of M. Griffiths, WWF Indonesia introduced population monitoring using camera traps in Ujung Kulon. This method has continued to develop, and now, Javan rhino monitoring and population counts even use video recordings.

It is the ongoing continuity of this Javan rhino conservation technique that has been the main reason for the Javan rhino population in Ujung Kulon not falling, but even rebounding since its low point in 1965. In 1992, together with Mount Leuser, Mount Gede-Pangrango, Baluran and Komodo, Ujung Kulon being designated one of the first five national parks in Indonesia was an acknowledgement in its own right of the area's importance, particularly as the last stronghold of the Javan rhino.



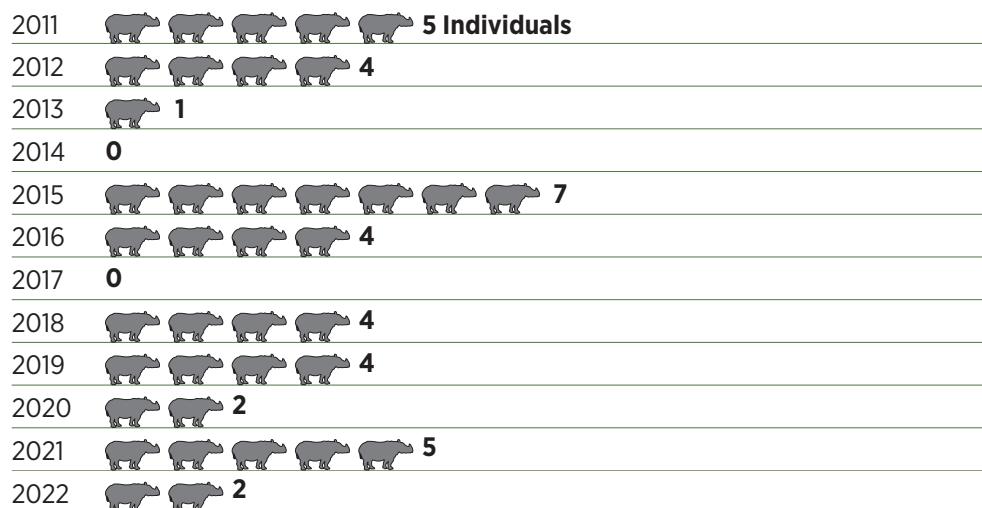
amera trap image of a mother and infant rhino in Ujung Kulon National Park. The appearance of infants such as this show that natural reproduction is still occurring in Ujung Kulon National Park.

Source: M. Griffiths/
WWF, 1993

⁷ M. Griffiths. 1993. The Javan Rhino of Ujung Kulon: An investigation of its population and ecology through camera trapping. Ditjen PHKA and WWF.

⁸ J.A.H. de Korte. 2022. The Javan Rhino's Last Stronghold: Ecogovernmentalities on Ujung Kulon, 1920s–1960s

Figure 9. **Recorded Javan rhino births in Ujung Kulon National Park since 2011.** Almost every year camera trap images show new infant Javan rhinos in Ujung Kulon National Park. | *Processed from various sources*



The birth figures shown in Figure 9 indicate that Ujung Kulon can still be relied upon as the last stronghold of the Javan rhino's existence. Also, the absence of any signs of poaching in the three decades leading up to 2018 indicate how local communities have co-existed with the Javan rhino. The use of the Javan rhino as the symbol for Pandeglang Regency also signifies that the regional government is fully aware of how important the survival of this species is.

VI. RECOMMENDATIONS

1. **There should be an overall improvement in the protection of the Javan rhino and Ujung Kulon National Park**

- The security system that has prevailed until now should be thoroughly investigated to ascertain performance and at the same time identify where improvements should be made.
- Dialogues and consultations should be held with experts in park and species safeguarding to secure input and fresh ideas on how best to protect Javan rhinos and Ujung Kulon National Park.
- Maximize all existing potential, in terms of both social capital and technologies: Specifically in regard to technology, the Ujung Kulon National Park Office should fully utilize camera traps and also identify who is entering rhino habitats illegally. Equipment such as CCTV cameras, and/or other technologies should be used to monitor park access points.

2. **The National Park Office and/or Ministry of Environment and Forestry should calculate the Javan rhino population in accordance with academic standards.**

The determination of calculation methodologies should be discussed academically and involve credible experts. This process should be led by a scientific authority, or conducted by involving a credible team of experts, and in an environment that supports academic freedom.

3. **Conduct a thorough evaluation of the Ujung Kulon National Park Office**, looking at its institutional, budgetary and programmatic arrangements.

- Restructure the Ujung Kulon National Park Office so it has units designated specifically to managing certain species, which can at the same time provide career incentives and wellbeing;
- Ensure budgets are dependent on and prioritize conservation of the Javan rhino and other flagship species;
- In a consistent and continual manner – with the state budget – conduct collaboratively-formulated Javan rhino conservation activities, especially (i) population management, (ii) habitat management, (iii) protection, and (iv) Javan rhino co-existence with local communities;
- Build an atmosphere conducive to the involvement of and support from conservationists.

4. **Implement a Javan rhino second population or second habitat programme in earnest**, which, in order, should involve the following: (1) designating second population areas; (2) developing temporary facilities – like JRSCA – in those designated areas; (3) selecting individual Javan rhinos in UKNP to be moved; (4) translocating the selected Javan rhinos to temporary facilities in the destination habitats; (5) analysing and habituating the Javan rhinos in temporary facilities, until (6) releasing them in stages into the surrounding forest; and (7) monitoring their populations in the new habitats

5. **Encourage and open up space for research into Javan rhinos**, including research into potential diseases, and forensic investigations into every unnatural Javan rhino death.

ABOUT THE AUTHORS



Timer Manurung

Since graduating from the Gadjah Mada University Faculty of Forestry in 2001, Timer has been involved in many programmes and investigative reports exposing environmental and wildlife crime. From 2010–2013, he was WWF Indonesia’s advocacy coordinator in Ujung Kulon. During that time, he advocated for a renewal of rhino conservation policy and technical implementation, including intensive reinvestigation of the Sumatran rhino in Kalimantan, which resulted in the rediscovery of the previously thought to be extinct rhino. Timer Manurung is the founder of Yayasan Auriga Nusantara (<https://auriga.or.id>) and has been its director since its establishment. Auriga Nusantara frequently collaborates with law enforcement institutions to eradicate environmental and wildlife crime in Indonesia.



Rizki Is Hardianto

A graduate of the IPB Faculty of Forestry, and currently taking his master’s degree in the same institution, Rizki has been Auriga Nusantara’s species conservation specialist since 2021. Before joining Auriga Nusantara, he spent six years working in the Alliance of Integrated Forest Conservation or *Aliansi Lestari Rimba Terpadu* (ALeRT), a rhino conservation-based NGO located in Lampung. From 2019–2021, Rizki was the coordinator of the ALeRT biodiversity programme overseeing ALeRT rhino conservation programmes, including camera trap research. He is also one of the designers of the Sumatran Rhino Sanctuary programmes in Aceh and East Kalimantan provinces.



Sulih Primara Putra

Sulih followed the Diploma III programme in the Gadjah Mada University Faculty of Forestry, then graduated with a degree from Tunas Pembangunan University in Surakarta. He has been a member of Auriga Nusantara’s staff since 2019. At Auriga, Sulih specializes in wildlife crime. In 2022, he became Auriga Nusantara’s main focal point in its collaboration with Garda Animalia in the Bela Satwa Project, which the two organizations initiated to improve public awareness of species conservation through collaboration with various media outlets. More details of the Bela Satwa Project are available at <https://pasopati.id>, an Auriga Nusantara microsite dedicated to eliminating destruction of and crimes against biodiversity.

