

RHINO RESOURCE CENTER

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NEWSLETTER #60 SEPTEMBER 2020

Dear colleagues and friends,

This is the 60th issue of the quarterly e-newsletter of the Rhino Resource Center. Edited by Dr Kees Rookmaaker.

The total number of references in the collection of the RRC now stands at **24,728**. This is an increase of 156 items in the last quarter. Over 24,600 references are **available** as PDF on the RRC website.



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The Rhino Resource Center is a Charity (Registered KvK Utrecht 30185802)

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RHINO RESOURCE CENTER – ANOTHER MILESTONE 60 NEWSLETTERS IN 15 YEARS

From humble beginnings. We have monitored almost daily the new published developments in the world of rhino conservation and research. In this age of information, it is increasingly difficult for individual researchers to monitor all books and papers and also web blogs or websites which tell more about the work done around the world by thousands of dedicated people.

You just need to access the RRC website once a month, click on new references, scan through the entries, and you can be sure to be reasonably up-to-date. The RRC is done entirely by hand, hence there can be lapses or shortcomings. Fortunately many authors and others assist by sending references or new material. Indeed that helps more than many realise, because it not only allows faster access but also gives a moral boost.

The RRC is entirely rhino-focused. Publications on more general conservation, research or historical issues are only referenced if they actually include important rhino content. On the other hand, the RRC is fully inclusive. There are no criteria to exclude a publication on rhinos. There are no barriers of language, or date, or subject, or educational level, or country. The RRC is used all over the world and has helped countless users after an internet search.

There is an amazing image gallery on the RRC with many thousands of pictures. Our aim is to include a picture of every rhino in captivity, every rhino preserved in a museum, every rhino identified in a national park, every drawing and painting. It is not going to be realized but it doesn't stop us from trying.

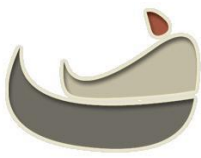
The RRC does not necessarily endorse research. We do not give prizes for best written paper or best conservation effort. But remember that the editors cherish good research presented in the best fashion, well written, properly referenced.

If the RRC is used in the course of research or writing, why not include us in acknowledgements? A small gift is also moral support.

The RRC is entirely open access to any user anywhere in the world. There are no hidden corners or sections. Rhinos are interesting animals, in multiple walks of life, and the RRC provides access to all these human endeavours. Appreciate the work that is done by all the busy authors who take time to share their results for future benefit.

Kees Rookmaaker

RESTORING THE NORTHERN WHITE RHINO



Ryder, O.A.; Friese, C.; Greely, H.T.; Sandler, R.; Saragusty, J.; Durrant, B.S.; Redford, K.H., 2020. Exploring the limits of saving a subspecies: the ethics and social dynamics of restoring northern white rhinos (*Ceratotherium simum cottoni*). *Conservation Science and Practice* 2020: e241: 1-8 - <https://doi.org/10.1111/csp2.241>.

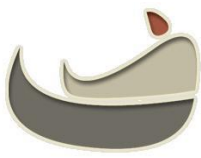
Population dynamics indicate that it will be impossible to keep the Northern White Rhino from extinction. One day we need to be brave enough to analyse the reasons, maybe to learn lessons for other species. Now, before all is lost, steps are taken to keep the reproductive material which may help to restore the taxon (species or subspecies) to its former glory, genetically intact and continuing to evolve. This paper by Ryder explains some of the intentions and should be read as a standard paper in the field.

This paper shows that the ultimate aim is to restore the NWR to its original habitat within its original area of distribution. That should not be an empty phrase. It has been a tenet of conservation for a long time that species (and subspecies) should not artificially be taken to other areas outside their range. It is tempting to do otherwise as we can see from the introductions of the southern white rhino to Kenya and Uganda, and the current population of NWR in Kenya. The animals do well, they are well protected, yet they are outside their original ranges.

It is important therefore to make a concerted effort to record what is known about the former occurrence of the northern white rhino across its range in central Africa. The species was only discovered at the end of the 19th century and scientifically described as a separate taxon in 1908. The literature available on the region where these rhinos lived, in Uganda west of the Nile, Congo, South Sudan, Sudan, Chad and Central African Republic, is not all that easy to access even if it might exist. Most of it would have been written in a period which is still poorly represented in the scanning of literature due to the strange limitations of the copyright laws.

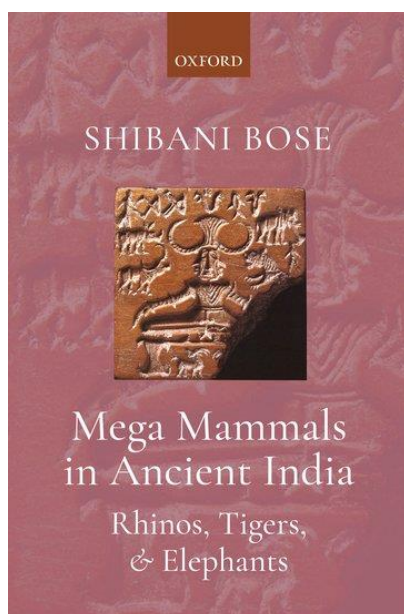
It is going to be a real challenge, but should be undertaken soon before all memories have faded away. Can we face the challenge?





MAHARASHTRA PETROGLYPH

The West-Indian state of Maharashtra is far from the range of any kind of rhinoceros in historical times. The early records of the Moghul emperors place rhinos in northern Pakistan, near Delhi, along the Ganges. Many hundreds of kilometers away from Mumbai. The rhino seals and objects of the Harappan civilisation centered in the Indus Valley are equally as far. A drawing of a rhinoceros on a rock in Maharashtra is therefore a discovery which still needs much research. I have not seen a formal publication of these finds in the literature as yet, but there is information on Konkan in the Ratnagiri district on the internet. Let me hope for a more formal description soon.



Shibani Bose. 2020. Mega mammals in ancient India.

Published this year by Oxford University Press, this new book will be of interest to people looking at the available records of rhinos and the other animals in parts of India. It should be available now, and more information can be found on the OUP site: [Check here](#).

It is well written, well researched, well referenced. A review will appear later.



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Thank you very much.

*The Rhino Resource Center is a registered charity.
We need your assistance to provide our service to all rhino lovers worldwide.*



CONTENTS OF THE RHINO RESOURCE CENTER

The development of the Rhino Resource Center is shown in the table here.

RRC	2019 Sept	2019 Dec	2020 March	2020 June	2020 Sept	ANNUAL INCREASE
References	23,600	24,230	24,460	24,572	24,728	+ 1128
PDF files	23,410	24,180	24,300	24,523	24,682	+ 1272
Images	4,486	4,530	4,544	4,549	4,569	+ 83

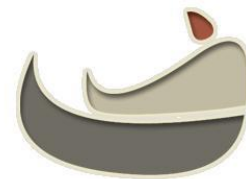
I thank everybody who has helped us by sending copies of books and papers.

All contributions are [acknowledged on the website](#).

DONATIONS TO THE RRC

It is really very easy. No problem to the audience of the RRC. To show appreciation of our work and to make future contents even better, a small donation goes a long way. Visits to libraries are no longer necessary, just think of the expensive time gained and research results improved. The button leads to a page with instructions.

[DONATE HERE](#)

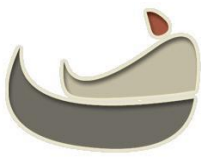


The Rhino Resource Center is an essential tool for

- 🐾 Information and image supply to media
- 🐾 Academic research in biology, conservation studies, art history
- 🐾 Education in primary, secondary and tertiary levels
- 🐾 Conservation of rhinos both *in-situ* and *ex-situ*
- 🐾 Latest information supply of all rhino-related projects
- 🐾 Information on all the latest conservation efforts
- 🐾 All the historical and most current literature.

YES, YOU CAN HELP:

- 🐾 Authors of books, papers and reports can send us a copy after publication.
- 🐾 We are always looking for images of all rhinos in books and in the wild
- 🐾 We aim to include a picture of every rhino ever kept in captivity
- 🐾 Contribute a message to our blog and get into contact with others
- 🐾 Place a link on your website to the RRC which will be reciprocated
- 🐾 Give us a DONATION when you feel the RRC has helped your work.



NEW LITERATURE (finalized 31 August 2020)

In this quarter (June to August 2020), we have added 156 new references, to bring the total number of items in the database to **24,728**.

Of these, 24,682 or 99 percent are available as PDF and searchable.

Below I have listed new entries published in the 21st century in four categories: General (all species), African rhinos, Asian rhinos and Fossil rhinos.

**Most additions are available on the website.
Search for them on the RRC, it's easy.**

Always check the [RRC website](#) first, many papers are available there.

NEW GENERAL PUBLICATIONS

- Chaffee, J., 2020. Synthetic rhino horns as a conservation method. Honours Thesis presented to the College of the Holy Cross, pp. 1-28.
- Kawata, K., 2020. European zoo potpourri. *ZAA Journal* (Zoological Association of America) 14 (2): 8-22.
- Lueders, I.; Twink Allen, W.R., 2020. Managed wildlife breeding-an undervalued conservation tool? *Theriogenology* 150: 48-54 - doi.org/10.1016/j.theriogenology.2020.01.058
- Robin des Bois, 2020. Notes on rhinoceros poaching. *On the Trail* (Information and analysis bulletin on animal poaching and smuggling) no.27: 86-91.
- Robin des Bois, 2020. Information sur braconnage des rhinoceros. *A La Trace* (Bulletin d'information et d'analyses sur le braconnage et la contrebande d'animaux) no.27: 86-91.
- Robovsky, J.; Melichar, L.; Gippoliti, S., 2020. Zoos and conservation in the anthropocene: opportunities and problems. In: Angelici F., Rossi L. (eds) *Problematic Wildlife II*. Springer, Cham: pp. 451-484.

NEW PUBLICATIONS ON AFRICAN RHINOS

- Cinkova, I.; Shrader, A.M., 2016. Rival assessment by territorial southern white rhinoceros males via eavesdropping on the contact and courtship calls. *Animal Behaviour* 166: 19-31. <https://doi.org/10.1016/j.anbehav.2020.05.013>.
- Clements, H.S.; Knight, M.; Jones, P.; Balfour, D., 2020. Private rhino conservation: diverse strategies adopted in response to the poaching crisis. *Conservation Letters* 2020: 1-8.
- Craig, A., 2009. Jack Skead, 1912-2006. *Ostrich: Journal of African Ornithology* 78 (3): 5-6
- Dearlove, R., 2020. *Poem For Killer* [heroic anti-poaching K9 ranger dog in Kruger NP]. Sydney, Dearlove, pp. 1-2.
- Hopcraft, J.G.C.; Laurenson, M.K., 2020. Markus Borner, a life at the conservation front line. *Conservation Biology* 34 (3): 769-770.
- Jewell, Z.C.; Alibhai, S.K.; Law, P.R.; Uiseb, K.; Lee, S., 2001. Monitoring rhinoceroses in Namibia's private custodianship properties. *PeerJ* 8:e9670: 1-21 - <https://doi.org/10.7717/peerj.9670>
- Le Roux, N.; Ferreira, S., 2020. Age structure changes indicate direct and indirect population impacts in illegally harvested black rhino. *PLoS ONE* 15(7): e0236790: 1-10 - <https://doi.org/10.1371/journal.pone.0236790>.



African Rhinos – continued

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- Patton, F., 2020. Wildlife and the real cost of Covid-19. *Swara, Nairobi* July-September 2020: 24-29
- Patton, F.; Genade, A., 2019. *Behavioural observations of white rhinos at Ziwa Rhino Sanctuary: analyses of ten years of data collection*. Ziwa, Rhino Fund Uganda, pp. 1-34.
- Pohlin, F.; Buss, P.; Hooyberg, E.H.; Meyer, L.C.R., 2020. Midazolam alters acid-base status less than azaperone during the capture and transport of southern white rhinoceroses (*Ceratotherium simum simum*). *Animals* 10 - 1323: 1-13 - doi:10.3390/ani10081323
- Root, M., 2020. On the road for rhino. *Swara, Nairobi* July-September 2020: 131-133.
- Ryder, O.A.; Friese, C.; Greely, H.T.; Sandler, R.; Saragusty, J.; Durrant, B.S.; Redford, K.H., 2020. Exploring the limits of saving a subspecies: The ethics and social dynamics of restoring northern white rhinos (*Ceratotherium simum cottoni*). *Conservation Science and Practice* 2020: e241: 1-8 - doi.org/10.1111/csp2.241.
- Sebastian, M.; Abdullah, A.; Abusharia, M.; Abu-Zidan, F.M., 2020. Rhinoceros-related delayed traumatic diaphragmatic rupture. *Ulus Travma Acil Cerrahi Derg* 2020: 486-488.
- Tichagwa, T.; Pegg, N.; Ndagurwa, H.G.T.; Zhuwau, C., 2020. Factors influencing the diurnal behaviour of white rhino (*Ceratotherium simum*) in Matobo National Park, Zimbabwe. *African Journal of Ecology* 2020 - early view: doi.org/10.1111/aje.12770.
- Tirapicos, L., 2020. O Rinoceronte de Durer. <http://cvc.instituto-camoes.pt/ciencia/e71.html>, pp. 1-3.
- Vincent, C., 2020. Etat des lieux de la stratégie de lutte contre le braconnage des rhinocéros en Afrique du sud. Thesis presented to the University of Liege, Belgium.



Northern white rhino (Lang 1915)



NEW PUBLICATIONS ON ASIAN RHINOS

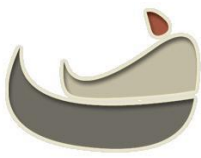
- Acharya, K.P. ; Thapa, R.K.; Kuwar, K.J.; Thapalia, B.P.; Paudel, P.K., 2020. Policy and management actions that resulted in curbing rhinoceros poaching. *Journal of Applied Ecology* 2020 (early view): 1-7 - <https://doi.org/10.1111/1365-2664.13692>
- Ahmad, W.; Baniyammuddin, M.; Tauheed, U., 2010. *Rhinodorylaimus kazirangus* gen. n., sp. n. (Dorylaimida: Dorylaimidae) from Kaziranga National Park, Assam, India. *Nematology* 12 (1): 149-155.
- Andhare, S., 2015. Identification of two Jain bronzes from the collection of the Asian Art Museum, San Francisco. In: Desai, K., *Mahavir Jain Vidyalay Shatabdi Mahotsav Granth Part 02*, pp. 314-317.
- Biedermann, Z.; Gerritsen, A.; Riello, G., 2020. *Global gifts and the material culture of diplomacy in early modern Eurasia*. Cambridge University Press.
- Bray, J., 2009. Krishnakanta Basu, Rammohan Ray and early-nineteenth century contacts with Bhutan and Tibet. *Tibet Journal* 34 (Special Issue): 1-28.
- Elliott, A.; Martinez Vilalta, A., 2020. *Lynx illustrated checklist of the mammals of South Asia*. Barcelona, Lynx, pp. 1-173.
- Evans, L., 2020. For two rhino species on brink of extinction, it's collaboration vs. stonewalling. www.mongabay.com 6 July 2020: 1-4.
- Ghosh, M., 1932. Rock-paintings and other antiquities of prehistoric and later times. *Memoirs of the Archaeological Survey of India* 24: 1-23.
- Gokkon, B., 2020. Indonesia identifies rhino to capture for breeding, but will have to wait until next year. www.mongabay.com 9 July 2020: 1-6.
- Gokkon, B., 2020. Indonesia's new lobster export policy threatens Javan rhino habitat. www.mongabay.com 15 July 2020: 1-5.
- Gokkon, B., 2020. Reproductive woes spell need for more viable females in Sumatran rhino program. www.mongabay.com 10 April 2020: 1-8.
- Hance, J., 2020. Every tool in the box: to save Sumatran rhinos: Q&A with Nina Fascione of IRF. www.mongabay.com 20 July 2020: 1-5.
- John, J., 2020. Marcellus Adi Riyanto: The Indonesian vet who lived for the Sumatran rhino. www.mongabay.com 19 June 2020: 1-5.
- Jovanda, 2020. COVID-19 halts matchmaking attempt for female Sumatran rhino in Borneo. www.mongabay.com 1 July 2020: 1-5.
- Jovanda, 2020. Sumatran rhino planned for capture is another female, Indonesian officials say. www.mongabay.com 22 July 2020: 1-5.
- Pant, G.; Maraseni, T.; Apan, A.; Allen, B.L., 2020. Climate change vulnerability of Asia's most iconic megaherbivore: greater one-horned rhinoceros (*Rhinoceros unicornis*). *Global Ecology and Conservation* 23: 1-14 - doi.org/10.1016/j.gecco.2020.e01180
- Reindl-Kiel, H., 2010. Dogs, elephants, lions and a rhino on diplomatic mission: animals as gifts to the Ottoman Court. In: Faroqhi, S. (ed.), *Animals and people in the Ottoman Empire*. Istanbul, pp. 271-285.
- Sridhara, S.; MacConkey, K.; Prasad, S.; Corlett, R.T., 2016. Frugivory and seed dispersal by large herbivores of Asia. In: F.S. Ahrestani and M. Sankaran (eds.), *The ecology of large herbivores in South and Southeast Asia*, *Ecological Studies* 225, pp. 121-150
- Vermeulen, W., 2006. *Operatie Natuur: het natuurbeschermingsleven van Zijne Koninklijke Hoogheid Prins Bernhard*. Zeist, Wereld Natuur Fonds: pp. 1-239.



NEW PUBLICATIONS ON FOSSIL RHINOS

Section edited by Emmanuel Billia, Dan Ziegler and Athanassios Athanassiou.

- Becker, D.; Tissier, J., 2020. Rhinocerotidae from the early middle Miocene locality Gracanica (Bugojno Basin, Bosnia-Herzegovina). *Palaeobiodiversity and Palaeoenvironments* 100: 395-412
- Burkanova, E.M.; Billia, E.M.E.; Persico, D., 2020. Stephanorhinus kirchbergensis (Jäger, 1839) (Mammalia, Rhinocerotidae) from the Po Valley (Lombardia, Northern Italy): possible diet/nutrition and living conditions. *Quaternary International* 2020 (early view)
- Chen, Xi; Wu, Suming; Wang, Ping; Wang, Xuanbo; Chao, Jianhong, 2020. A report on the Late Pleistocene vertebrate fossils from the Zhangshan locality, Suqian, Jiangsu Province. *Acta Anthropologica Sinica* 39 (2): 319-331 – doi:10.16359/j.cnki.cn11-1963/q.2018.0021
- Lord, E.; Dussex, N., ; Kierczak, M.; Díez-del-Molino, D.; Ryder, O.A.; Stanton, D.W.G. ; Gilbert, M.Th.P.; Sánchez-Barreiro, F.; Zhang, Guojie; Sinding, M.-H.S.; and 8 Others, 2020. Pre-extinction demographic stability and genomic signatures of adaptation in the woolly rhinoceros. *Current Biology* 2020: 20 pp. doi.org/10.1016/j.cub.2020.07.046
- Malkani, M.S., 2019. Recently discovered basilosaurid, baluchitherid rhinoceros, horses, sea cow, proboscidean, eucrocodylid, pterosaurs, plesiosaur, fishes, invertebrates and wood fossils, tracks and trackways of dinosaurs from Pakistan; comparison of recognized four titanosaur taxa of Indo-Pakistan with Madagascar. *Open Journal of Geology* 9 (12): 919-955
- Mosel, S., 2020. Ashfall fossil beds: from waterhole to rhino barn. Report to Nebraska State Museum, pp. 1-4
- Ouchaou, B.; Bougariane, B.; Zahid, S., 2017. Les grands mammifères disparus du Maroc durant l'Holocène. *Anthropologie* 121: 131-145
- Radovic, P.; Radonjic, M.; Billia, E.M.E., 2020. Pleistocene rhinoceros from Bogovina Cave – The first report of Stephanorhinus hundsheimensis (Toula, 1902) (Mammalia, Rhinocerotidae) from Serbia. *Palaeontologia Electronica* 2020: 1-20.
- Sobczyk, A. & twenty-two others, 2020. Geology, stratigraphy and palaeoenvironmental evolution of the Stephanorhinus kirchbergensis-bearing Quaternary palaeolake(s) of Gorzów Wielkopolski (NW Poland, Central Europe). *Journal of Quaternary Science* 2020: 1-20 doi:10.1002/jqs.3198
- Tissier, J.; Antoine, P.O.; Becker, D., 2020. New material of Epiaceratherium and a new species of Mesaceratherium clear up the phylogeny of early Rhinocerotidae (Perissodactyla). *Royal Society Open Science* 7 (200633): 1-21.



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Rhino Resource Center
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Dr Kees Rookmaaker has actively worked on the biology and history of the rhinoceros for 50 years. He is a member of the IUCN-SSC Asian Rhino Specialist Group, and advisor to the EAZA Rhino TAG and to the International Rhino Foundation. He is the editor of the rhino section of *Pachyderm*. Author of eight books on African and Asian exploration and on the rhinoceros, as well as nearly 250 shorter publications, many in peer-reviewed journals. Until 2015, he worked as a Senior Research Fellow on Darwin Online and Wallace Online at the National University of Singapore. He was Secretary of the International Commission on Zoological Nomenclature (ICZN) for a short period in 2015. The Society for the History of Natural History awarded him their Founder's Medal, and he served in the Council for several years.

CHRONICLES OF THE RHINOCEROS IN SOUTH ASIA

This is a new project to review and archive the historical information on the interaction between men and rhinoceros in the South Asian subcontinent. There is much amazing information in all kinds of publications, as well as data on rhino trophies and specimens in museums and private collections. I am particularly excited about some of the older artwork and photographs which can still be found.

-  Pictures of any rhinoceros in art or alive in Indian subcontinent
-  Historical photographs of rhinos hunted or seen before 1970
-  Data on trophies and specimens in museums and private collections

All contributions are always welcome

Kees Rookmaaker – August 2020