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Rediscovery of the largetooth sawfish *Pristis pristis* and a historical record of range extension in South Africa

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Abstract: All five species of sawfishes (family: Pristidae) are currently Critically Endangered. Two species have been recorded in South African waters, *Pristis pristis* and *P. zijsron*, both of which are regarded as lost in this area, due to the absence of any local records since 1999. Of the two, *P. pristis* was by far the rarer, with only seven confirmed records from five specimens since 1951; the most recent was in 1985. This species was rediscovered in September 2025 when the decomposing body of a 3.5 m total length male washed ashore close to Bhirha River Mouth, approximately 70 km north of Port Alfred, Eastern Cape, which is the southern limit of its distribution in South African waters. Publicity given to this finding resulted in the re-emergence of a 1955 record of *P. pristis* from the Touws River at Wilderness and a newly-uncovered 1962 record from Cape St Blaize, in the Western Cape, which are 485 km and 540 km southwest of Port Alfred respectively, and therefore represent a substantial range extension along the South African coast. All the South African records of this species are large (>3.3 m) individuals, which are likely to be highly mobile, with significant dispersal capability. In the absence of any evidence of females or nursery grounds in South African waters, these individuals are assumed to be vagrants that have swum considerable distances south from Mozambique, where there is formal protection for sawfishes but fishing pressures remain high.

Keywords: *Pristis pristis*, *Pristis zijsron*, Critically Endangered species, South Africa, range extension, conservation challenges

Conservation statement: The rediscovery of *Pristis pristis* on South Africa's east coast, after an apparent absence of 40 years, confirms the species' continued presence in the region. The nine individuals of this species on record were large (>3.3 m), and all those sexed were males. As there is no evidence of nursery areas in South African waters, these individuals are assumed to have originated from Mozambique, undertaking southward movements of at least 2,000 km. Despite full protection in that country, fishing pressure, including the deployment of gillnets, remains high. Effective conservation of *P. pristis* in South Africa is therefore dependent on enhanced compliance and law enforcement in Mozambique, where stricter enforcement of legislation, especially gillnetting in freshwater nursery areas, and community engagement to reduce

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bycatch, are imperative. Regional collaboration and renewed search efforts along the South African coast will improve understanding of the species' movements which is fundamental to effective transboundary conservation strategies.

Resumo: Todas as cinco espécies de tubarão serra (família: Pristidae) estão atualmente em perigo crítico. Duas espécies foram registradas em águas sul-africanas, *Pristis pristis* e *P. zijsron*, ambas consideradas perdidas nesta área devido à ausência de registros locais desde 1999. Das duas, *P. pristis* era de longe a mais rara, com apenas sete registros confirmados com cinco indivíduos diferentes desde 1951, o mais recente em 1985. Esta espécie foi redescoberta em setembro de 2025, quando um corpo em decomposição de um macho com 3,5 m de comprimento total foi encontrado na costa perto da foz do rio Bhirha, aproximadamente 70 km a norte de Port Alfred, Eastern Cape, que é o limite sul da sua distribuição nas águas sul-africanas. A divulgação desta descoberta resultou no reaparecimento de um registro de 1955 de *P. pristis* no Rio Touws, Wilderness, e de um registro de 1962 recém-descoberto de Cape St Blaize, no Cabo Ocidental, que se situam a 485 km até 540 km a sudoeste de Port Alfred, respetivamente, representando, assim uma expansão substancial da distribuição local ao longo da costa sul-africana. Todos os registros sul-africanos desta espécie são de indivíduos de grande porte (>3,3 m), que são provavelmente altamente móveis e possuem uma capacidade de dispersão significativa. Na ausência de qualquer evidência de fêmeas ou de áreas de reprodução em águas sul-africanas, presume-se que estes indivíduos são errantes que nadaram longas distâncias do sul de Moçambique, onde existe protecção formal para os tubarão serra, mas a pressão da pesca continua elevada.

Palavras-chave: *Pristis pristis*, *Pristis zijsron*, Espécies Criticamente Ameaçadas, África do Sul, extensão da distribuição, desafios de conservação

Declaração de Conservação: A redescoberta de *Pristis pristis* na costa este da África do Sul, após uma aparente ausência de 40 anos, confirma que a espécie continuou presente na região. Os nove indivíduos registados eram de grande porte (>3,3 m) e todos os que o sexo foram determinados eram machos. Como não existem evidências de áreas de crescimento em águas sul-africanas, presume-se que tenham tido origem em Moçambique, realizando deslocações de mais de 2.000 km. Apesar da protecção integral naquele país, a pressão da pesca, incluindo a utilização de redes de emalhar, continua elevada. A conservação eficaz de *P. pristis* na África do Sul depende, portanto, de uma maior conformidade e aplicação da lei em Moçambique, onde a aplicação mais rigorosa da legislação, especialmente a proibição da pesca com redes de emalhar em zonas de berçário de água doce, e o envolvimento da comunidade para reduzir a captura accidental são indispensáveis. A colaboração regional e a renovação dos esforços de busca ao longo da costa sul-africana irão melhorar o conhecimento do movimento da espécie, que são fundamentais para estratégias de conservação transfronteiriça eficazes.

INTRODUCTION

All five species in the sawfish family Pristidae are at a greater risk of extinction than all other elasmobranchs (Dulvy et al. 2024). This can be attributed to several factors: their low intrinsic rates of population increase; major destruction and loss of their shallow-water habitat, particularly in mangroves and other estuarine and freshwater environments, which serve as nursery areas; and their high value to fisheries and extreme vulnerability to entanglement in fishing nets (Dulvy et al. 2016). Overfishing and habitat loss have resulted in local extinctions in 55 (59%) of the 90 nations which his-

torically had sawfishes in their coastal waters (Yan et al. 2021). All five species are currently assessed as Critically Endangered in terms of the International Union for Conservation of Nature (IUCN) Red List of Threatened Species (Espinoza et al. 2022; Harry et al. 2022, 2024).

In South Africa, the absence of any sawfish records since 1999 is a major concern (Everett et al. 2015), which still persists. The nomenclature of local sawfishes has been described as 'lengthy and convoluted', with various names including *Pristis microdon*, *P. pectinata*, *P. perrotteti*, *P. pristis*, and *P. zijsron* appearing in the literature (Ebert et al. 2021). The confusing taxonomy is also evident at a global level. This, accompa-

nied by a lack of understanding on the possible geographical structuring of different populations, resulted in an extensive global study of the family (Faria et al. 2013). These authors collated morphometric data and photographic records and examined specimens deposited in public collections, with a focus on rostral tooth counts. They also determined mitochondrial DNA sequences (*NADH-2*) in 213 specimens from all five species. Their findings confirmed that *P. perrotteti* and *P. pristis* are both synonyms for *P. pristis* and that *P. pectinata* is confined to the Atlantic Ocean. Furthermore, they concluded that there were only two species in South African waters, theargetooth sawfish *P. pristis* (Linnaeus, 1758) and the green sawfish *P. zijsron* Bleeker, 1851 (Faria et al. 2013).

The distribution of *P. pristis* was widespread in tropical and warm-temperate coastal waters of the Western and Eastern Atlantic, Eastern Pacific, and the Indo-West Pacific Oceans. Local populations have experienced large declines and currently the species is possibly extinct in 19 of its 60 former range states, and its presence in another 14 is uncertain (Espinoza et al. 2022). It was uncommon on the South African coast (Everett et al. 2015; Wallace 1967), where it was reported to occur as far south as Port Alfred (Fig. 1) in the Eastern Cape, 1,000 km from the national border with Mozambique, but this was based on a single record (Compagno 2012). There is very little published information on the life history of either sawfish species in South Africa and elsewhere in their South-

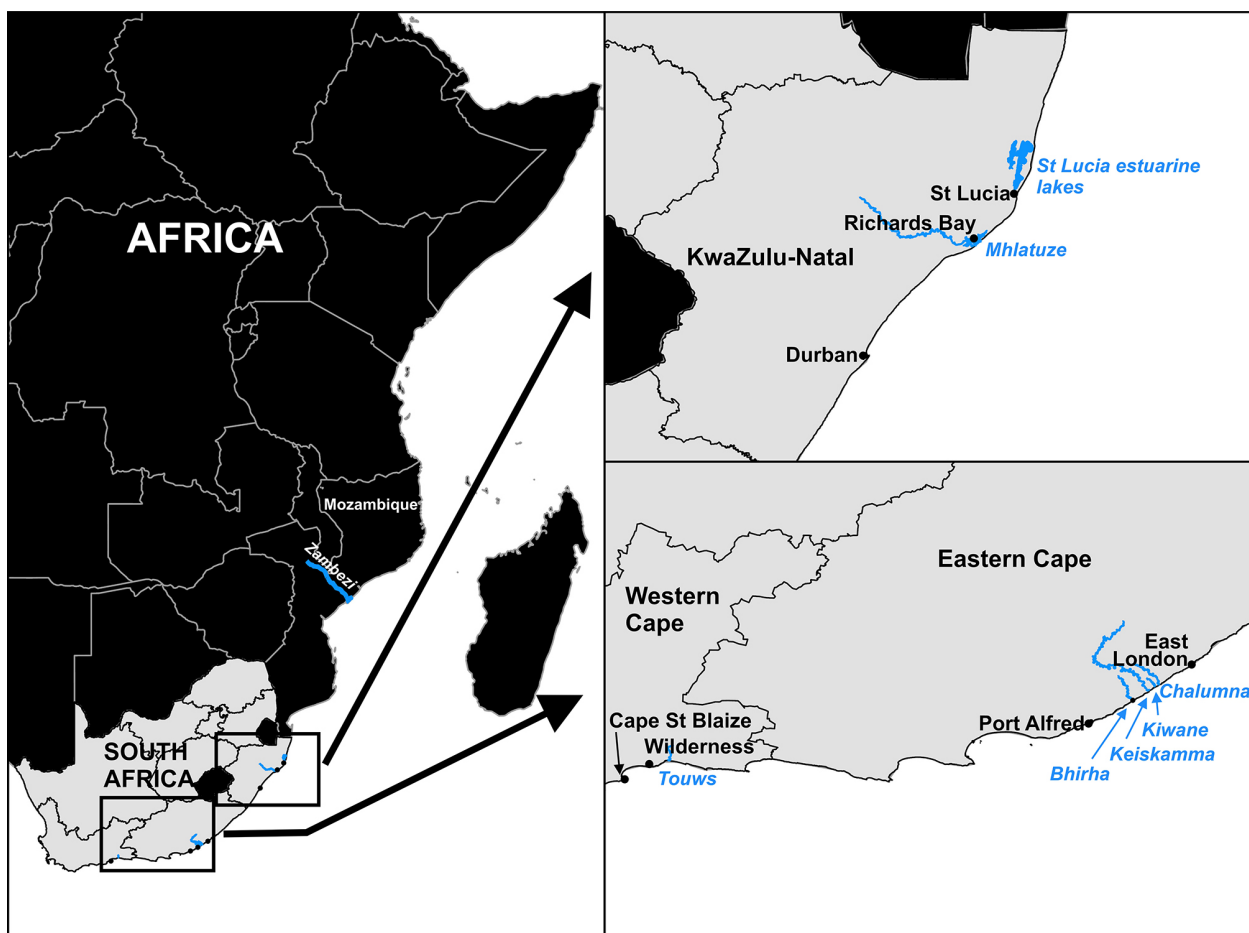


Figure 1. Map of South Africa with exploded views of the provinces of KwaZulu-Natal and much of the Eastern Cape and the northernmost section of the Western Cape. The maps were generated using ArcGIS Pro 3.6.0.

west Indian Ocean range, which for *P. pristis* includes Madagascar, Tanzania, and Mozambique (Braulik et al. 2020; Last et al. 2016). Most of the research conducted on this species has been in northern Australia or the Lake Nicaragua-Río San Juan system in the Western Atlantic (Kyne et al. 2021).

By contrast, *P. zijsron* is an Indo-West Pacific species, which is possibly extinct in 11 of its 36 range states, and its presence is uncertain in another 11. In the Southwest Indian Ocean there are historical records from Kenya, Mozambique, and South Africa (Harry et al. 2022). Ebert et al. (2021) stated that its South African distribution appeared to be confined to KwaZulu-Natal (KZN), although the exact limits are uncertain, due to misidentification with *P. pristis*. This contradicts distributional records elsewhere, as *P. zijsron* is regarded as the sawfish most tolerant of cooler water, and thus it has a more temperate distribution, especially in the southern hemisphere (Simpfendorfer 2013).

In South Africa, the province of KwaZulu-Natal (KZN), with a coastline of 580 km, lies immediately south of the national border with Mozambique (Fig. 1). The earliest fisheries records of sawfishes in KZN date back to 1931, when a very short-lived commercial shark fishery operated out of the port city of Durban and 36 individuals were reported in the catch among 6,681 sharks, 1,018 rays, 323 manta rays, and 301 skates. No further details, such as species composition or depths fished, were provided (Anonymous 1932). These statistics indicate that sawfishes were not uncommon, but it is possible that this catch may have included the sawshark *Pliotrema warreni* that occurs in deeper waters along the entire east and south coasts of South Africa (Ebert et al. 2021).

Everett et al. (2015) documented all known sawfish records for the period 1951 to 2012. The focus of their study was KZN, as they only uncovered a single South African record from outside this province. Their database comprised largely catches, supplemented by information from research surveys, the media, and

personal observations of researchers and conservation managers. Of the 246 listed records, 89 were unidentified sawfish and 150 were *P. zijsron* (Everett et al. 2015). Historically adult *P. zijsron* entered the estuarine systems of both St Lucia and Richards Bay (Mhlathuze Estuary) in northern KZN (Fig. 1), where the females often gave birth (Wallace 1967, 1975). Individuals caught in these systems were therefore significantly smaller than those taken in the inshore marine environment (Everett et al. 2015). These authors reported that a total of 115 *P. zijsron* were caught in extensive research gillnet surveys deployed in The Narrows of the St Lucia estuarine system in the 1960s, of which 112 were released alive.

There were only seven confirmed records of *P. pristis* from five individuals, all caught in shark nets set off the popular recreational beaches of KZN (Everett et al. 2015) to reduce the risk of shark-inflicted injuries (Cliff and Dudley 1992). Three large males of 3.6–3.9 m total length (TL; all lengths are reported as such) were caught in Durban between the date of first installation of shark nets in 1952 and the date of publication, but the years of capture were not listed (Wallace 1967). The three most-recent records were of the same individual, a male of 3.4 m, which was released alive from the Durban nets (Fig. 1), following capture on two successive days in 1985 and then found dead in these nets two days later (Cliff and Everett 2022a). There were no reports of females or small individuals.

In this entire database there are only five sawfish records post 1989, namely, one *P. zijsron* in 1991 and four unidentified sawfish, the most recent of which was in 1999. Based on extinction probability analysis, Everett et al. (2015) concluded that both species no longer occur in KZN waters. They suggested that this may represent South Africa's first case of local extirpation of marine elasmobranchs in the modern era.

There have been no reports of any sawfishes in KZN marine or riverine waters or elsewhere along the South African coast in the ensuing

two decades (Cliff and Everett 2022a, 2022b). As a result, both species in this region meet the criteria for the recently introduced concept of a lost species, which is defined as “one not confirmed alive by photographic, audio or genetic information for over 10 years in the wild and has no *ex situ* population under human care” (Long and Rodríguez 2022). Thus, they were considered locally or regionally lost, prior to the rediscovery described here. Legal protection was only afforded to sawfishes in South Africa in 1997, whereby their targeting or retention in any fishery (Republic of South Africa 1997) was prohibited, but this was essentially a symbolic measure, given their apparent local extirpation (Everett et al. 2015).

EVIDENCE

Recent record

On 19 September 2025, a male *P. pristis* was found on the beach south of the Bhirha River Mouth (-33.3855, 27.3204), approximately 70 km north of Port Alfred, Eastern Cape (Fig. 1). A large portion on the right side of the decomposing body, including the entire first dorsal fin and the underlying vertebral column, had recently been cut away and removed. A local resident photographed the fish and reported it to one of the authors (KC), who visited the site and found that all the internal organs, including the gills, were missing. The total length recorded *in situ* was 3.5 m (Fig. 2). As *P. pristis* males mature at 2.8–3.0 m (Kyne et al. 2021), this individual, with elongated claspers, appeared to be an adult. The head and rostrum were removed and frozen at the East London Museum, where several measurements were taken. The standard rostral length was 0.7 m and there were 21 pairs of rostral teeth, of which three teeth were missing and several more were worn down to their bases. These remains, together with tissue samples, were accessioned into the collection of the South African Institute for Aquatic Biodiversity (SAIAB Catalogue Number 247064) in Makhanda (Fig. 2).

Historical records

The discovery of the Bhirha specimen prompted a nationwide media release, requesting members of the public to submit any sawfish records to the authors. Four responses were received, each with an associated photograph, which enabled the species to be identified (Table 1). One was a 1.8 m, 18 kg *P. zijsron*, caught by an angler in 1974, approximately 6 km upstream in the Chalumna River, 80 km north of Port Alfred (Fig. 1). This finally confirms that this species does occur south of KZN in South African waters.

The other records were of *P. pristis*. An unsexed individual of about 5 m washed ashore between the Kiwane and Keiskamma Rivers (Fig. 1), about 90 km north of Port Alfred, in 1994. The earliest record was from the Touws River, Wilderness (Fig. 1), in February 1955. An unsexed individual was sighted near the estuary mouth (-33.99, 22.58) and was pursued for over three hours, before it was harpooned. It measured 4.1 m and bore 16 pairs of rostral teeth. The George and Knysna Herald of 18 February 1955 reported the incident as the second from this section of the coast, after an unidentified sawfish had washed ashore there two years earlier, but no additional confirmatory information was forthcoming. The rostrum was accessioned into the collection of the South African Museum (SAM) in Cape Town, as SAM 22785 (Faria et al. 2013). This record was overlooked in all subsequent species listings of Southern African and South African fishes, which recorded Port Alfred as the southern limit of *P. pristis* (Compagno 2012; Ebert et al. 2021; Smith 1961). Another record from the same area, in the form of a single photograph from the collection of the late ichthyologist Professor Phil Heemstra of SAIAB, shows a 5.4 m individual being offloaded from a commercial fishing vessel in the harbour at Port Elizabeth (now Gqeberha) (Fig. 3). Inscribed on the back were the words “Cape St Blaize 1962” and “17' 8””. Cape St Blaize is situated in the Western Cape, 85 km west of Wilderness and 540 km southwest of Port Alfred and

some 1,500 km south of the South Africa-Mozambique border. These two records extend the southward range of *P. pristis* in South African waters by a substantial distance.

Natural history of *P. pristis* in Southern Africa

Young *P. pristis* spend much of their early life in rivers and other freshwater environments up to

400 km from the sea, which accounts for the alternative common name of freshwater sawfish (Kyne et al. 2013; Thorburn et al. 2007). Unlike *P. zijsron*, there are no records of this species utilizing any of the estuarine and freshwater environments in KZN (Everett et al. 2015), despite extensive research in the major systems of St Lucia and the Mthlatuze River (Richards Bay) (Wallace 1967, 1975) and all other KZN estuaries (Begg 1978, 1983). This included Durban



Figure 2. The specimen of *Pristis pristis* that washed ashore south of the Bhirha River Mouth on 19 September 2025, with a large section recently removed between the pectoral and pelvic fins. Images of the head and rostrum were photographed at the East London Museum. Photographs: East London Museum / WILDTRUST.

Table 1. Details of all nine known records of largetooth sawfish *Pristis pristis* in South African waters.

Year	Total length (m)	Sex	Location	Reference/ Source	Additional notes
1952–1966	3.6–3.9	All male	Durban, Kwa-Zulu-Natal	Wallace (1967)	3 different individuals, 180–188 kg; no dates reported; all shark net catches
1955	4.1	Unknown	Touws River estuary, Western Cape	Faria et al. (2013); this study	Harpooned; rostrum at South African Museum: SAM 22785
<1958	5.4	Unknown	Unknown	Everett et al. (2015)	Rostrum on display at Point Yacht Club, Durban
1962	5.4	Unknown	Cape St Blaize, Western Cape	This study	Commercial catch offloaded in Port Elizabeth harbour; single photograph
1985	3.4	Male	Durban, Kwa-Zulu-Natal	Everett et al. (2015); this study	Same individual caught three times in shark nets over four days
1994	~5	Unknown	Between Kiwane and Keiskamma Rivers, Eastern Cape	Paul Toich: personal communication, in this study	Stranding; single photograph
2025	3.5	Male	Bhirha River Mouth, Eastern Cape	This study	Stranding; South African Institute for Aquatic Biodiversity: SAIAB 247064

Bay, also a large estuarine embayment, but this is not unexpected, given that it was transformed into Durban Harbour, one of the busiest ports in Africa, over a century ago (Everett et al. 2015). Nevertheless, Faria et al. (2013) reported that a female *P. zijsron* of 1.8 m was caught in Durban Bay in 1922 and accessioned into the British Museum of Natural History (BMNH 1922.1.13.7). This indicates that the authorities of the time were aware of the significance of sawfish presence inside the Bay.

In extensive interviews undertaken across Mozambique, Leeney (2017) documented 14 captures and sightings of *P. pristis* as recently as 2013–14, and examined 12 rostra from individuals whose total length ranged from 1–5 m. The smallest was found in the Zambezi River, where this species was once regarded as common (Wallace 1967). In addition, Faria et al. (2013) listed individuals of 1.0 m (Museum für Naturkunde, Berlin, ZMB 4527) and 1.2 m (ZMB 7851) from this river. As size at birth is

0.7–0.9 m (Last et al. 2016), the presence of such small individuals is strong evidence that this species reproduces in the Zambezi River system, which is in the region of 2,500 km long and is the fourth largest in Africa.

All the South African records of *P. pristis* were large individuals (>3.3 m) and all those that were sexed were males. In a study of the conservation genetics of sawfishes in northern Australian waters, Phillips et al. (2017) found that *P. pristis* has high levels of mtDNA heterogeneity and no nDNA heterogeneity, which is indicative of female philopatry and evidence for male-biased dispersal. This may explain why only the larger males, likely to be highly mobile and capable of making long-distance movements, have been recorded in South African waters. These individuals appear to have originated from the closest-known nursery areas in Mozambique, which has about 2,500 km of coastline. The distance from the mouth of the Zambezi River to Bhirha is in the region of



Figure 3. A 5.4 m *Pristis pristis* of unconfirmed sex being offloaded at Port Elizabeth (now Gqeberha) harbour, following capture at Cape St. Blaize in 1962. Photograph from the collection of the late Phil Heemstra.

2,500 km and to Wilderness/Cape St Blaize is over 3,000 km. An alternative but far less likely hypothesis to that of a Mozambican origin, is a West African one. This would involve a swim of at least 4,000 km from northern Angola, the southern limit of the species' range in this region. Faria et al. (2013) found a significant restriction of gene flow between Atlantic and Indo-West Pacific populations. They attributed this to the cold waters of the Benguela upwelling system on the west coast of South Africa and Namibia that extend into southern Angola (Shannon 1985), creating a major biogeographical barrier, thereby isolating tropical organisms of the Atlantic and Indian Oceans.

In the absence of any species-specific information on the catch of 36 sawfishes in the short-lived commercial shark fishery out of Durban in 1931 or in any other KZN fisheries in the first half of the twentieth and the entire nineteenth centuries, it is impossible to ascertain to what extent this coastline formed part of the historical range of *P. pristis*. It is therefore assumed that the nine confirmed individuals of this species found in South African waters since 1951 are vagrants.

Future prospects

The legal protection introduced in 1997, which prohibits the targeting or retention of sawfishes in South African fisheries, offers limited benefit for *P. pristis*. This species is rare, with only nine confirmed individuals in seven decades, and no evidence that it reproduces in these waters. Its conservation status in the two countries immediately north of South Africa is not favorable as, despite several records as recent as 2013–14, *P. pristis* has experienced large-scale declines in Mozambique (Leeney 2017) and similarly in Tanzania (Braulik et al. 2020). Unlike KZN waters, that were dominated by *P. zijsron* (Everett et al. 2015), only rostra of *P. pristis* (n = 16) were found in Tanzania (Braulik et al. 2020) and 11 of the 14 rostra examined in Mozambique were *P. pristis* (Leeney 2017). These findings suggest that *P. pristis* is the more tropical of the two

species in the Southwest Indian Ocean. In Mozambique gillnets are still extensively used by artisanal fishers, with considerable fishing effort in rivers and estuaries (Leeney 2017). National regulations in the form of Regulamento da Pesca Marítima (República de Moçambique 2020) published in 2020 state that this species is now fully protected in Mozambique, but compliance and effective law enforcement remain major concerns. Furthermore, Leeney (2017) noted that sawfishes do not hold any pervasive cultural importance in the region and the sale of their highly valuable fins is an economic asset in an impoverished country. Given their extremely high vulnerability to capture in gillnets, fishing pressure is likely to remain high. As a result, recruitment of *P. pristis* from Mozambique, where they are known to reproduce, is likely to remain severely compromised.

CONCLUSION

The 2025 record is confirmation that *P. pristis* can no longer be regarded as a lost species in South African waters. As there is no evidence that this species reproduces in South Africa, we speculate that the nine confirmed individuals, which are all large and therefore the most mobile, are vagrants which originate from Mozambique, the closest known nursery ground. Fishing pressure in that country remains high, despite full protection since 2020, which does not bode well for the future of this Critically Endangered species and its congener *P. zijsron* in the region. On a positive note, the significant southward range extension highlights the remarkable mobility of *P. pristis*, which can only strengthen the ecological and evolutionary resilience of the East African population. The recent rediscovery should be a huge incentive for authorities in the region to continue with their conservation efforts. These should be aimed at protecting both sawfish species and other threatened elasmobranchs, as well as the large riverine and estuarine systems in which they reproduce.

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Data accessibility

Morphometric data on the rostrum of the Bhirha individual are available from the authors. The rostrum and tissue samples have been lodged with the South African Institute for Aquatic Biodiversity (SAIAB): Catalogue Number 247064.

Author contributions

K.C. collected and curated the rostrum and head. G.C. wrote the first draft of the manuscript. All authors contributed to manuscript development, interpretation, and revisions. All authors reviewed and approved the final version of the manuscript. B.E. and J.O. prepared Figs. 1 and 2 respectively.

Ethical standards and competing interests

No live individuals were handled during this study and hence no permits or institutional animal-ethics approvals were required. The head, rostrum, and tissue samples of the Bhirha stranding were collected by the East London Museum and donated to the South African Institute for Aquatic Biodiversity, a national facility of the National Research Foundation (NRF), which falls under the Department of Science and Innovation (DSI) of the South African National Government. The authors declare no competing interests.

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Literature cited

Anonymous. 1932. *Report of the Natal Fisheries Department: Province of Natal*. The Natal Witness Ltd., Pietermaritzburg.

Braulik G, Kasuga M, Majubwa G. 2020. Local ecological knowledge demonstrates shifting baselines and the large-scale decline of sawfishes (Pristidae) in Tanzania. *African Journal of Marine Science* 42: 67–79. doi:10.2989/1814232X.2020.1728379

Begg GB. 1978. *The Estuaries of Natal*. Report 41, Natal Town and Regional Planning, Pietermaritzburg.

Begg GB. 1983. *The Estuaries of Natal, Part II*. Unpublished Report No. 30, Oceanographic Research Institute, Durban.

Cliff G, Everett BI. 2022a. *Pristis pristis*. Pages 341–346 in Cliff G, Olbers JM, eds. *Species Profiles of South African Sharks, Rays and Chimaeras. Volume 1: Threatened and Endemic Species*. WILDTRUST Special Publication 2, Durban. http://sharksunderattackcampaign.co.za/wp-content/uploads/2023/03/2023_01_17_WILDOCEANS-endemic-and-threatened-sharks-species-reports.pdf

Cliff G, Everett BI. 2022b. *Pristis zijsron*. Pages 347–352 in Cliff G, Olbers JM, eds. *Species Profiles of South African Sharks, Rays and Chimaeras. Volume 1: Threatened and Endemic Species*. WILDTRUST Special Publication 2, Durban. http://sharksunderattackcampaign.co.za/wp-content/uploads/2023/03/2023_01_17_WILDOCEANS-endemic-and-threatened-sharks-species-reports.pdf

Cliff G, Dudley SFJ. 1992. Protection against shark attack in South Africa, 1952–90. *Australian Journal of Marine and Freshwater Research* 43: 263–272. doi:10.1071/MF9920263

Compagno LJV. 2012. Family Pristidae. Pages 110–111 in Smith MM, Heemstra PC eds. *Smiths' Sea Fishes*. Springer-Verlag, Berlin. doi:10.1007/978-3-642-82858-4_9

Dulvy NK, Davidson LNK, Kyne PM, Simpfendorfer CA, Harrison LR, Carlson JK, Fordham SV. 2016. Ghosts of the coast: global extinction risk and conservation of sawfishes. *Aquatic Conservation: Marine and Freshwater Ecosystems* 26: 134–153. doi:10.1002/aqc.2525

Dulvy NK, Pacoureau N, Matsushiba JH, Yan HF, VanderWright WJ, Rigby CL, Finucci B, Sherman CS, Jabado RW, Carlson JK, Pollom RA, Charvet P, Pollock CM, Hilton-Taylor C, Simpfendorfer CA. 2024. Ecological erosion and expanding extinction risk of sharks and rays. *Science* 386: eadn1477.

Ebert DA, Wintner SP, Kyne PM. 2021. An annotated checklist of the chondrichthyans of South Africa. *Zootaxa* 4947: 1–127. doi:10.11646/zootaxa.4947.1.1

- Espinoza M, Bonfil R, Carlson J, Charvet P, Chevris M, Dulvy NK, Everett B, Faria V, Ferretti F, Fordham S, Grant MI, Haque AB, Harry AV, Jabado RW, Jones GCA, Kelez S, Lear KO, Morgan DL, Phillips NM, Wueringer BE. 2022. *Pristis pristis* (errata version published in 2025). The IUCN Red List of Threatened Species 2022: e.T18584848A249880242. doi:10.2305/IUCN.UK.2022-2.RLTS.T18584848A249880242.en
- Everett BI, Cliff G, Dudley SFJ, Wintner SP, van der Elst RP. 2015. Do sawfish *Pristis* spp. represent South Africa's first local extirpation of marine elasmobranchs in the modern era? *African Journal of Marine Science* 37: 275–284. doi:10.2989/1814232X.2015.1027269
- Faria VV, McDavitt MT, Charvet P, Wiley TR, Simpfendorfer CA, Naylor GJP. 2013. Species delineation and global population structure of Critically Endangered sawfishes (Pristidae). *Zoological Journal of the Linnean Society* 167: 136–164. doi:10.1111/j.1096-3642.2012.00872.x
- Harry AV, Everett B, Faria V, Fordham S, Grant MI, Haque AB, Ho H, Jabado RW, Jones GCA, Lear KO, Morgan DL, Phillips NM, Spaet JLY, Tanna A, Wueringer BE. 2022. *Pristis zijsron*. The IUCN Red List of Threatened Species 2022: e.T39393A58304631. doi:10.2305/IUCN.UK.2022-2.RLTS.T39393A58304631.en
- Harry AV, Carlson JK, Espinoza M, Grant MI, Haque AB, Jabado RW, Rigby C. 2024. All sawfish now Critically Endangered but sustained conservation efforts can lead to recovery. *Oryx* 58: 146–146. doi:10.1017/S0030605323001692
- Kyne PM, Carlson J, Smith K. 2013. *Pristis pristis*. The IUCN Red List of Threatened Species. Version 2013.2. doi:10.2305/IUCN.UK.2013-1.RLTS.T18584848A141788242.en
- Kyne PM, Oetinger M, Grant MI, Feutry P. 2021. Life history of the Critically Endangeredargetooth sawfish: a compilation of data for population assessment and demographic modelling. *Endangered Species Research* 44: 79–88. doi:10.3354/esr01090
- Last P, White W, Naylor G. 2016. Sawfishes Family Pristidae. Pages 58–64 in Last P, White W, de Carvalho M, Séret B, Stehmann M, Naylor G, eds. *Rays of the World*. CSIRO Publishing, Clayton. doi:10.1071/9780643109148
- Leeney RH. 2017. Are sawfishes still present in Mozambique? A baseline ecological study. *PeerJ* 5: e2950. doi:10.7717/peerj.2950
- Long B, Rodríguez JP. 2022. Lost but not forgotten: a new nomenclature to support a call to rediscover and conserve lost species. *Oryx* 56: 481–482. doi:10.1017/S0030605322000618
- Phillips NM, Chaplin JA, Peverell SC, Morgan DL. 2017. Contrasting population structures of three *Pristis* sawfishes with different patterns of habitat use. *Marine and Freshwater Research* 68: 452–460. doi:10.1071/MF15427
- República de Moçambique. 2020. *Decreto n.º 89/2020: Aprova o Regulamento da Pesca Marítima (REPMAR)*. Boletim da República, I Série, n.º 192, 8 de Outubro de 2020. Maputo, Moçambique. <https://adnap.gov.mz/download/aprovacao-doregulamentogeral-da-pesca-maritima-repmar>
- Republic of South Africa. 1997. *Government Notice 18357. Regulations in terms of the Sea Fishery Act, 1988*. Regulation Gazette No. 6029. South African Government Printers, Pretoria.
- Shannon LV. 1985. The Benguela ecosystem. Part I. Evolution of the Benguela physical features and processes. *Oceanography and Marine Biology Annual Reviews* 23: 105–182.
- Simpfendorfer C. 2013. *Pristis zijsron* (errata version published in 2019). The IUCN Red List of Threatened Species 2013: e.T39393A141792003. doi:10.2305/IUCN.UK.2013-1.RLTS.T39393A141792003.en
- Smith JLB. 1961. *The Sea Fishes of Southern Africa*. 4th edition. Central News Agency Ltd, Cape Town.
- Thorburn DC, Morgan DL, Rowland AJ, Gill HS. 2007. Freshwater sawfish *Pristis microdon* Latham, 1794 (Chondrichthyes: Pristidae) in the Kimberley region of western Australia. *Zootaxa* 1471: 27–41. doi:10.11646/zootaxa.1471.1.3
- Wallace JH. 1967. The Batoid Fishes of the East Coast of Southern Africa. Part I: Sawfishes and Guitarfishes. Investigational Report No. 15, Oceanographic Research Institute, Durban. 32 pp.
- Wallace JH. 1975. The Estuarine Fishes of the East Coast of South Africa. I. Species Composition and Length Distribution in the Estuarine and Marine Environments. II. Seasonal Abundance and Migrations. Investigational Report No. 40, Oceanographic Research Institute, Durban. 48 pp.
- Yan HF, Kyne PM, Jabado RW, Leeney RH, Davidson LN, Derrick DH, Finucci B, Freckleton RP, Fordham SV, Dulvy NK. 2021. Overfishing and habitat loss drive range contraction of iconic marine fishes to near extinction. *Science Advances* 7: eabb6026. doi:10.1126/sciadv.abb6026