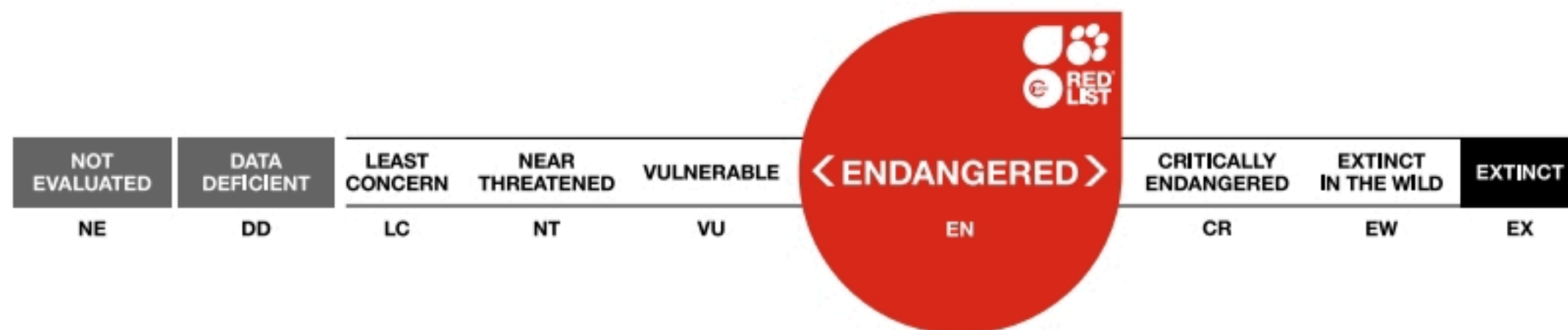


Polysteganus undulosus, Seventy-four Seabream

Assessment by: Mann, B.Q., Parker, D. & Bernard, A.T.F.



View on www.iucnredlist.org

Citation: Mann, B.Q., Parker, D. & Bernard, A.T.F. 2025. *Polysteganus undulosus*. *The IUCN Red List of Threatened Species* 2025: e.T170206A263072090. <https://dx.doi.org/10.2305/IUCN.UK.2025-2.RLTS.T170206A263072090.en>

Copyright: © 2025 International Union for Conservation of Nature and Natural Resources

Reproduction of this publication for educational or other non-commercial purposes is authorized without prior written permission from the copyright holder provided the source is fully acknowledged.

Reproduction of this publication for resale, reposting or other commercial purposes is prohibited without prior written permission from the copyright holder. For further details see [Terms of Use](#).

The IUCN Red List of Threatened Species™ is produced and managed by the [IUCN Global Species Programme](#), the [IUCN Species Survival Commission \(SSC\)](#) and [The IUCN Red List Partnership](#). The IUCN Red List Partners are: [ABQ BioPark](#); [Arizona State University](#); [BirdLife International](#); [Botanic Gardens Conservation International](#); [Conservation International](#); [Missouri Botanical Garden](#); [NatureServe](#); [Re:wild](#); [Royal Botanic Gardens, Kew](#); [Sapienza University of Rome](#); [Senckenberg Society for Nature Research](#); [Texas A&M University](#); and [Zoological Society of London](#).

If you see any errors or have any questions or suggestions on what is shown in this document, please provide us with [feedback](#) so that we can correct or extend the information provided.

Taxonomy

Kingdom	Phylum	Class	Order	Family
Animalia	Chordata	Actinopterygii	Perciformes	Sparidae

Scientific Name: *Polysteganus undulosus* (Regan, 1908)

Synonym(s):

- *Dentex undulosus* Regan, 1908

Common Name(s):

- English: Seventy-four Seabream
- French: Denté Maculé
- Spanish; Castilian: Dentón Manchado, Dentón Ocelado

Taxonomic Source(s):

Fricke, R., Eschmeyer, W.N. and Van der Laan, R. (eds). 2025. Eschmeyer's Catalog of Fishes: genera, species, references. Updated 09 April 2025. Available at: <https://researcharchive.calacademy.org/research/ichthyology/catalog/fishcatmain.asp>. (Accessed: 09 April 2025).

Assessment Information

Red List Category & Criteria: Endangered A2bcd [ver 3.1](#)

Year Published: 2025

Date Assessed: July 11, 2024

Justification:

This species is endemic to southern Africa, inhabits deep offshore reefs, and exhibits slow growth and late maturation. The estimated generation length is 13 years, therefore past declines are estimated over a time period of 39 years (or ~1985–2024). This species was once heavily exploited throughout its range, and particularly where it formed large spawning aggregations, leading to the contraction of its distribution and the collapse of the stock in the 1960s. Catches declined substantially from over 1,000 tonnes in the early 1900s to less than 400 tonnes in the 1920s and 1930s, and by the 1980s, only 5.4 tonnes were reported. Catch-per-unit-effort (CPUE) also declined by ~99% during this time period. Strict fishery regulations were not implemented until 1985 and were subsequently revised in 1992 with no evidence of stock recovery. This led to the implementation of a ten-year catch moratorium in 1998. In 2007, an assessment was conducted on the status which showed limited recovery of the adult stock but increasing numbers of juveniles in their traditional nursery areas in the Eastern Cape. This work led to the moratorium being extended. In addition to the moratorium, several new or extended no-take MPAs were established in 2019 that are likely to aid in the recovery of this stock.

Despite the moratorium, the species is still subject to illegal fishing, because of high prices on the black market, which poses a major threat to its recovery. Spawner biomass per recruit (SB/R) was estimated at <5% in 2007. The moratorium has now been in place for more than 24 years and the status of the stock

urgently needs to be re-evaluated. However, based on observations from fishery-independent surveys (ROVs and BRUVs) conducted in the Eastern Cape and KwaZulu-Natal, as well as anecdotal evidence from fishermen of increasing abundance of juveniles, it is believed that the population is slowly recovering. The range of this species has contracted due to overexploitation. Based on the current low levels of fishing mortality and the perceived recovery of this species, it has experienced an inferred decline of 50–79% over the past three generations and it is listed as Endangered A2bcd. Research is currently ongoing to produce an updated stock assessment.

Previously Published Red List Assessments

2014 – Critically Endangered (CR)

Geographic Range

Range Description:

This species is endemic to the southeastern coast of southern Africa from Cape Point, Western Cape to the mouth of the Limpopo River in southern Mozambique (Ahrens 1964, Smith and Heemstra 1986, van der Elst 1993, Heemstra and Heemstra 2004, Garratt 1996). Overexploitation has resulted in a range contraction from its historical distribution with no specimens recently reported north of Sodwana Bay and very few south of Cape Agulhas (Mann 2007). The centre of the adult distribution currently is deep offshore reefs between Durban and East London (Mann 2007). The depth range is 40–160 m (Mann and Fennessy 2013).

Based on a minimum convex polygon drawn around the extent of its range, its estimated extent of occurrence (EOO) is larger than 400,000 km². Its estimated area of occupancy (AOO) is larger than 2,000 km².

Country Occurrence:

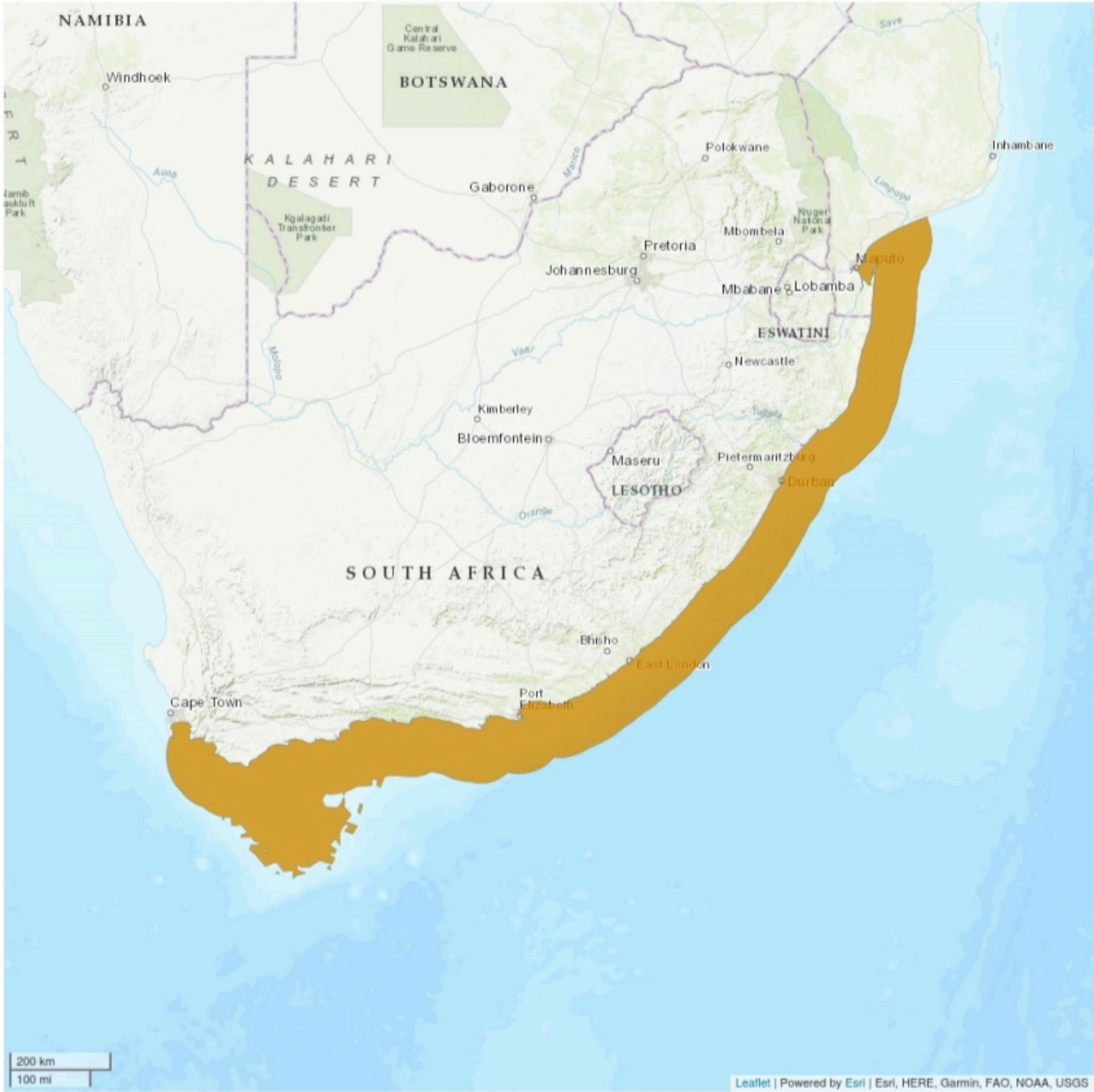
Native, Extant (resident): Mozambique; South Africa

FAO Marine Fishing Areas:

Native: Atlantic - southeast

Native: Indian Ocean - western

Distribution Map



Legend
■ EXTANT (RESIDENT)

Compiled by:
IUCN Marine Biodiversity Unit 2024



The boundaries and names shown and the designations used on this map do not imply any official endorsement, acceptance or opinion by IUCN.

Population

The historic distributional range of this species has decreased in size with no fish recently reported north of Sodwana Bay and very few south of Cape Agulhas (Mann 2007). Prior to the closure of the fishery in 1998, the spawner biomass per recruit (SB/R) was believed to have been <5% of its pristine level (Chale-Matsau 1996). Consequently, this species has been considered commercially extinct since before the fishery closed in 1998 (Chale-Matsau *et al.* 2001, Moloney *et al.* 2013). During the 20th century, catches and CPUE of adults declined off KwaZulu-Natal by more than 90% (Garratt 1996, Penney *et al.* 1999), while catches in the Western and Eastern Cape provinces also declined by more than 90% (Griffiths 2000). Stocks at <25% of their pristine status are indicative of stock depletion in long-lived species and are at high risk of collapse (Griffiths *et al.* 1999). Reductions in CPUE of >90% coincide with SB/R ratios of <10% and are indicative of severe stock depletion (Griffiths 2000).

The fishing moratorium implemented in 1998 currently is still in place for this species, prohibiting its capture by both commercial and recreational fisheries due to the overexploited status of the stock (DFFE 2024). This species was heavily targeted by commercial and recreational fisheries throughout the 20th century. Initially, it was targeted by harbour-based lineboats and then later by smaller, surf-launched ski-boats, especially on the spawning grounds in KwaZulu-Natal, south of Durban. Initially, large adult fish comprised the bulk of the catch taken by this fishery, but by the late 1960s, catches in KwaZulu-Natal had collapsed and only small quantities continued to be caught in the Eastern Cape (van der Elst and Garratt 1984, Penney *et al.* 1999, Mann 2007). Line catches from the Eastern and Southern Cape also declined considerably during the 20th century (Griffiths 2000). A retrospective stock assessment conducted in 1996 (based on data collected in KwaZulu-Natal and the Eastern Cape during 1962–1963 by Ahrens [1964]) revealed that the stock had collapsed in the 1960s (Griffiths 2000, Chale-Matsau *et al.* 2001). The decline of CPUE by more than 90% throughout its distribution triggered the implementation of a moratorium in 1998 to allow the stock to recover (Mann and Fennessy 2013). Griffiths (2000) estimated that CPUE had declined to <1% of historical values based on commercial and fishery-independent survey data.

In 1910, this species comprised 70% of the KwaZulu-Natal commercial linefish catch with 1,550 tonnes landed, and in 1921–1933, catch composition of this species ranged from 30% to 50% with 337 tonnes caught. By the late 1950s, the annual catch of this species had halved despite a dramatic increase in fishing effort (van der Elst and Garratt 1984, Penney *et al.* 1999). By 1985, only 5.4 tonnes were reported by the commercial linefishery, comprising < 1% of the total commercial linefish catch in KwaZulu-Natal (Penny *et al.* 1989, Birnie *et al.* 1994, Penney *et al.* 1999, Chale-Matsau *et al.* 2001). By 1997, the last year that the fishery for this species was still open, the total reported catch by the commercial line fishery throughout South Africa was only 2.6 tonnes with a mere 1.4 tonnes reported from KwaZulu-Natal, representing a dramatic collapse (Mann 2007, National Marine Linefish System [NMLS] unpublished data 2024). A similar collapse in catches was reported for Cape waters (Griffiths 2000). For example, the average catch per boat year dropped to 0.09% in the Southwestern Cape, 0.01% in the Southern Cape and 0.22% in the Southeastern Cape of historical values (Griffiths 2000). Average catch per boat year was: 40 kg in 1897–1906, 28 kg in 1927–1931, and 0.04 kg in 1986–1998 in the Southwestern Cape; 580 kg in 1897–1906, 200 kg in 1927–1931, and 0.07 kg in 1986–1998 in the Southern Cape; and 5,944 kg in 1897–1906, 339 kg in 1927–1931, and 13 kg in 1986–1998 in the Southeastern Cape (Griffiths 2000).

Since the implementation of the moratorium in 1998, poaching has continued to take place, driven by high prices on the black market (Mann 2007). This illegal and unreported fishing has slowed the potential recovery of this species. A reassessment conducted in 2007 showed a slight increase in the mean size of adult fish but little evidence of recovery of the adult spawning population in southern KwaZulu-Natal. However, juveniles have become increasingly abundant in the Amathole area of the Eastern Cape (Kei Mouth to East London) with fishermen now regularly reporting large catches which are subsequently released (J. Rance, Border Deep Sea Angling Association pers. comm. 2022). A recent study that used footage collected from a Remotely Operated Vehicle (ROV) deployed in the Amathole area found that both juvenile and adult individuals were observed in 24% of the ROV dive transects undertaken, making it the seventh most frequently encountered species. The highest MaxN (proxy for relative abundance) value observed was 23 individuals, which was the fifth highest MaxN recorded across the 65 species encountered throughout the study (Button et al. 2021). Furthermore, recent analysis of footage from stereo-BRUV surveys conducted on deep reefs (> 50 m) along the eastern seaboard of South Africa has also shown that juveniles and adults are frequently observed, especially in the Amathole region (A. Bernard, SAIAB unpublished data 2024). These observations suggest that the moratorium and the protection of this species within large no-take MPAs has reduced fishing mortality, and that the population is showing strong signs of recovery since the mid-2000s (B.Q. Mann, ORI pers. obs. 2024). Research is currently ongoing to produce an updated stock assessment.

No information is available on the status of the population or exploitation levels in Mozambique (B.Q. Mann pers. comm. 2024).

Current Population Trend: Increasing

Habitat and Ecology (see Appendix for additional information)

Adults of this species are found offshore, over deep-water reefs and pinnacles forming dense shoals in depths down to 160 m (Ahrens 1964, van der Elst 1993, Garratt 1996). Juveniles appear to be fairly resident and inhabit offshore reefs deeper than 20 m in the Eastern and Western Cape (Penney *et al.* 1989, Oceanographic Research Institute Cooperative Fish Tagging Project [ORI-CFTP] unpublished data 2024). This is primarily a piscivore, feeding on small pelagic fish species such as sardines (*Sardinops sagax*) and mackerel (*Scomber japonicus*), as well as small reef fish, cephalopods and crustaceans (Garratt 1996, Mann and Fennessy 2013). Juveniles feed primarily on mysids and other benthic invertebrates (Pillay 2011).

Adults undertake an annual spawning migration from Cape waters to the former Transkei and southern KwaZulu-Natal during the winter (Ahrens 1964, Garratt 1988, Garratt 1996), although a return migration of the adults back to Cape waters has not been confirmed (Ahrens 1964, Mann and Fennessy 2013). This annual migration may also be in response to the seasonal migration of *Sardinops sagax* into KwaZulu-Natal waters (Mann and Fennessy 2013).

This species is a rudimentary hermaphrodite and functional gonochorist (Ahrens 1964, Buxton and Garratt 1990, Chale-Matsau 1996, Mann 2007). The growth rate is similar between males and females and the maximum age is estimated to be more than 20 years (Chale-Matsau *et al.* 2001, Mann 2007). The maximum size is 100 cm total length and the maximum weight is 16 kg (IGFA 2012, van der Elst 1993, Heemstra and Heemstra 2004). It reaches 50% sexual maturity at about 8.8 years of age for both sexes (Chale-Matsau *et al.* 2001), with first maturity evident from four to five years (Mann and Fennessy

2013). Total length at 50% maturity is attained from 65 cm to 75 cm (Chale-Matsau 1996). Fecundity of females ranges from one to three million eggs (Ahrens 1964). The pelagic eggs of this species are assumed to be carried southwards inshore of the Agulhas Current (Penney *et al.* 1989) but have not been recorded off Park Rynie on the southern coast of KwaZulu-Natal after 25 years of sampling (A. Connell, SAIAB pers. comm. 2024).

Spawning occurs from late winter to spring (July to November) with peak spawning occurring from August to October when adults form predictable spawning aggregations (Ahrens 1964, Penney *et al.* 1989, Mann 2007). Spawning takes place on offshore reefs from 50 m to 100 m depth off the KwaZulu-Natal south coast and northern Transkei coast (Ahrens 1964, Garratt 1988, Mann 2007). Spawning was also previously known to occur on deep reefs off the Umvoti River mouth on the KwaZulu-Natal north coast (B. Clark, retired commercial fisherman pers. comm. 2024). The Illovo Banks, south of Amanzimtoti on the KwaZulu-Natal south coast, was a well-known spawning aggregation site (Ahrens 1964, Penney *et al.* 1989, Garratt 1988, Penney *et al.* 1999, Mann 2007). However, since the depletion of the stock, there has been little evidence of aggregation behaviour reoccurring at this locality (Mann and Fennessy 2013).

The estimated generation length of this species is 13 years, therefore, we estimate three generations to be around 39 years. The generation length calculation was derived from the Euler-Lotka equation, which weights the contribution of each successive cohort to population fecundity as the product of the survivorship to the age of the cohort and the fecundity of the average female in the cohort (Simpfendorfer 2005). The convention is to use females only, and we apply this convention to gonochoristic and protandrous fishes. An easily calculated and reliable substitute for age-specific relative fecundity is the mass of the mature female, as we find that female fecundity scales linearly with body mass for sparids. For protogynous fishes, it would be a mistake to ignore the males, as these represent the old fish which play a more crucial role in the spawning process especially when sperm becomes limiting. For protogynous fishes, we therefore use a combination of the two sexes, in proportion with the observed sex-ratio (C. Attwood pers. comm. 2024).

Systems: Marine

Use and Trade

This species was heavily targeted by commercial and recreational line-fisheries throughout the 20th century (Penney *et al.* 1999, Griffiths 2000). It is currently closed to commercial and recreational fishing due to the severely overexploited status of the stock (DFFE 2024). However, an unquantified amount of poaching does occur due to the species' high price on the black market (> R200/kg) (K. Sink, SANBI pers. comm. 2024).

Threats (see Appendix for additional information)

This species was overexploited and fished down to very low levels throughout the 20th century (Penney *et al.* 1999, Griffiths 2000). During the peak spawning season (August to October), it historically formed predictable spawning aggregations in areas such as the Illovo Banks south of Durban which were heavily targeted by line fishermen (Penney *et al.* 1999). This resulted in recruitment overfishing and severe depletion of the stock.

The range of this species has contracted, and as of the last assessment in 2007, there was no evidence indicating a definitive recovery of the adult stock (Mann 2007, Mann and Fennessy 2013). In addition to forming predictable spawning aggregations, it exhibits intrinsic characteristics such as slow growth and late maturation (Chale-Matsua *et al.* 2001, Mann 2007), which hinder stock recovery. Species with these traits are generally more susceptible to overexploitation, even at low levels of fishing effort (Acosta and Appeldoorn 1992). Furthermore, this is an iconic species and a popular food fish and despite the more than 24-year moratorium, illegal and unreported harvesting has continued (B.Q. Mann, ORI pers. obs. 2024) and this has likely impeded stock recovery.

The removal of large sparid fish can change the fish community structure (Heyns-Veale *et al.* 2019, Mann *et al.* 2022), reducing both primary and secondary production on temperate-reef ecosystems (Babcock *et al.* 1999), and can reduce the links of reef ecosystems with the pelagic food web. Several South African warm/temperate, reef-associated, linefish species have been overexploited which can result in the loss of productivity, commensurate socio-economic impact and a high risk of commercial extinction with likely harmful impacts to trophic flow and biodiversity (Griffiths 2000, Comeros-Raynal *et al.* 2016). Despite these threats, this species is now showing signs of recovery after 24+ years of strict protection (B. Mann, ORI pers. obs. 2024).

Conservation Actions (see Appendix for additional information)

The first conservation actions for this species were implemented in South African legislation in 1984 and included a minimum size limit of 25 cm total length, a bag limit of five fish/person/day, and a closed season during the spawning season from the 1st of September to the 30th of November (Garratt 1988, regulations in terms of the Sea Fisheries Act No. 58 of 1973). Amendments were made to this legislation in 1992, including an increased minimum size limit to 40 cm total length and a reduced daily bag limit to two fish/person/day (Chale-Matsua *et al.* 2001, regulations in terms of the Sea Fisheries Act No. 12 of 1988). Following research by Chale-Matsua *et al.* (2001) in 1996, and no further improvement in catches, a 10-year moratorium was implemented in South Africa in 1998 (RSA 2005). From 2006 to 2007, a reassessment of the stock was conducted on the KwaZulu-Natal coast (Mann 2007). Little evidence was found of increased catch-per-unit-effort (CPUE) off the KwaZulu-Natal coast although there was some evidence of increased abundance of juvenile fish in the Eastern Cape. Based on this research, the then responsible South African government department (Department of Environmental Affairs and Tourism) extended the moratorium until 2018, whereafter, the stock status was supposed to be re-evaluated. However, this was not undertaken, and the moratorium is currently still in place.

In addition to traditional fisheries management tools, several large no-take MPAs have been established along the South African coast within the distribution range of this species (Mann *et al.* 2006, RSA 2019). These include from north to south, iSimangaliso, Thukela, Aliwal Shoal, Protea, Pondoland, Dwesa-Cwebe, Amathole and Addo MPAs. Recent stereo-BRUV research has provided evidence that both juveniles and adults occur in all these MPAs (A. Bernard, SAIAB unpublished data 2024). With effective management, these MPAs will likely play an important role in providing additional protection and further assist in recovery (B.Q. Mann, ORI pers. obs. 2024). This is particularly true in the case of the Aliwal Shoal MPA which now includes some of the historical spawning grounds on the Illovo Banks and there is a regulation banning bottom-fishing in the Illovo Offshore Controlled Zone between 1 August and 31 October each year (RSA 2019). To date, there has been little evidence of it receiving protection in MPAs further south (i.e. Tsitsikamma, Goukamma, Stilbaai, De Hoop and Agulhas Bank MPAs) (Mann and Fennessy 2013).

The slow recovery of the stock is not surprising given its slow growth, late age at maturity and continued poaching that has occurred during the moratorium. It is also possible that its niche has been filled by other deep reef fishes, although this aspect has not been specifically investigated (Heyns-Veale *et al.* 2019, Mann *et al.* 2022). Monitoring the status of a fish species that has been closed to fishing is extremely difficult as all fishery-dependent data are excluded. Fishery-independent and non-invasive methods, such as underwater videography (e.g., stereo-BRUVs and ROVs), should be used to monitor populations in the future. There is also a need for additional information about the movement patterns of adults using tag-recapture and the distribution of eggs and larvae (Mann and Fennessy 2013). Although fishing mortality is incurred when this species is accidentally hooked and brought to the surface resulting in barotrauma (Kerwath *et al.* 2013), it is believed that overall fishing mortality has been greatly reduced since the implementation of the moratorium and with the associated increase in public awareness about its critical status. The increased abundance of juveniles in the Amathole area of the Eastern Cape and the occurrence of adults in large MPAs further north (e.g., Pondoland, Aliwal Shoal, uThukela and iSimangaliso) bodes well for the recovery of this species and careful consideration will need to be given to how it is managed in the future should the moratorium be lifted.

Research is needed on the status of this species in Mozambique.

Credits

Assessor(s): Mann, B.Q., Parker, D. & Bernard, A.T.F.

Reviewer(s): Linardich, C. & Comeros, M.

Authority/Authorities: IUCN SSC Snapper, Seabream & Grunt Specialist Group