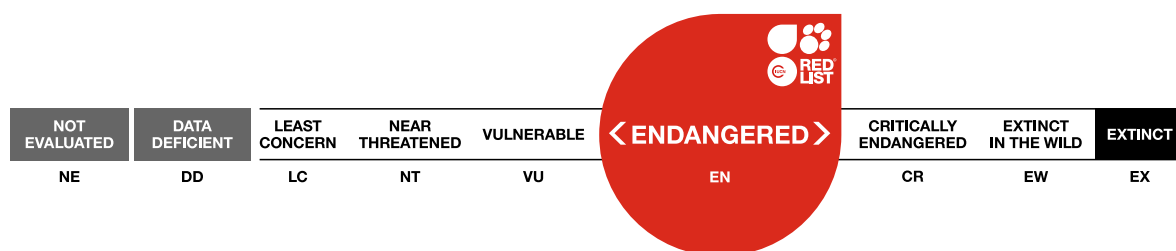


Haploblepharus edwardsii, Happy Eddie

Assessment by: Pollom, R., Da Silva, C., Gledhill, K., Leslie, R., McCord, M.E. & Winker, H.



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Citation: Pollom, R., Da Silva, C., Gledhill, K., Leslie, R., McCord, M.E. & Winker, H. 2020. *Haploblepharus edwardsii*. The IUCN Red List of Threatened Species 2020: e.T39345A124403633. <https://dx.doi.org/10.2305/IUCN.UK.2020-2.RLTS.T39345A124403633.en>

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Taxonomy

Kingdom	Phylum	Class	Order	Family
Animalia	Chordata	Chondrichthyes	Carcharhiniformes	Pentanchidae

Scientific Name: *Haploblepharus edwardsii* (Schinz, 1822)

Synonym(s):

- *Squalus edwardsii* Schinz, 1822

Common Name(s):

- English: Happy Eddie, Puffadder Shyshark

Taxonomic Source(s):

Fricke, R., Eschmeyer, W.N. and Van der Laan, R. (eds). 2020. Eschmeyer's Catalog of Fishes: genera, species, references. Updated 02 March 2020. Available at: <http://researcharchive.calacademy.org/research/ichthyology/catalog/fishcatmain.asp>.

Taxonomic Notes:

Haploblepharus edwardsii is commonly misidentified for other *Haploblepharus* species.

Assessment Information

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

Year Published: 2020

Date Assessed: August 1, 2019

Justification:

The Happy Eddie (*Haploblepharus edwardsii*) is a small (to 64 cm total length) catshark endemic to South Africa in the Southeast Atlantic and Western Indian Oceans, occurring from Langebaan Lagoon, Western Cape, to Algoa Bay, Eastern Cape. This species inhabits rocky reefs, kelp forests, sandy substrates, and the upper continental slope to a depth of 288 m. Little is known of its biology. The Happy Eddie is bycatch in a range of fisheries including beach seine, gillnet, trawl, recreational and commercial line, rock lobster, and demersal shark longline. Trend analyses of research trawl data in South African commercially fished areas and of angler surveys in the De Hoop Marine Protected Area, estimated population reductions of 88–97% over three generation lengths (60 years), with the highest probability of >80% reduction over three generation lengths. The reduction in research trawls is partly driven by a steep decline in catches during the early 1990s when fishing pressure in South Africa was substantially higher. Climate change likely contributed to a range shift away from the research trawl grounds that may account for some of the estimated population reduction but that also likely represents a loss of habitat for the Happy Eddie. Balancing these factors, it is suspected that the Happy Eddie has undergone a population reduction of 50–79% over the past three generation lengths (60 years), and it is assessed as Endangered A2bcd.

For further information about this species, see [Supplementary Material](#).

Previously Published Red List Assessments

2009 – Near Threatened (NT)

<https://dx.doi.org/10.2305/IUCN.UK.2009-2.RLTS.T39345A10211065.en>

2000 – Lower Risk/near threatened (LR/NT)

Geographic Range

Range Description:

The Happy Eddie is endemic to South Africa in the Southeast Atlantic and Western Indian Oceans where it occurs from Langebaan Lagoon, Western Cape, to Algoa Bay, Eastern Cape (Human 2007, Ebert *et al.* 2013).

Country Occurrence:

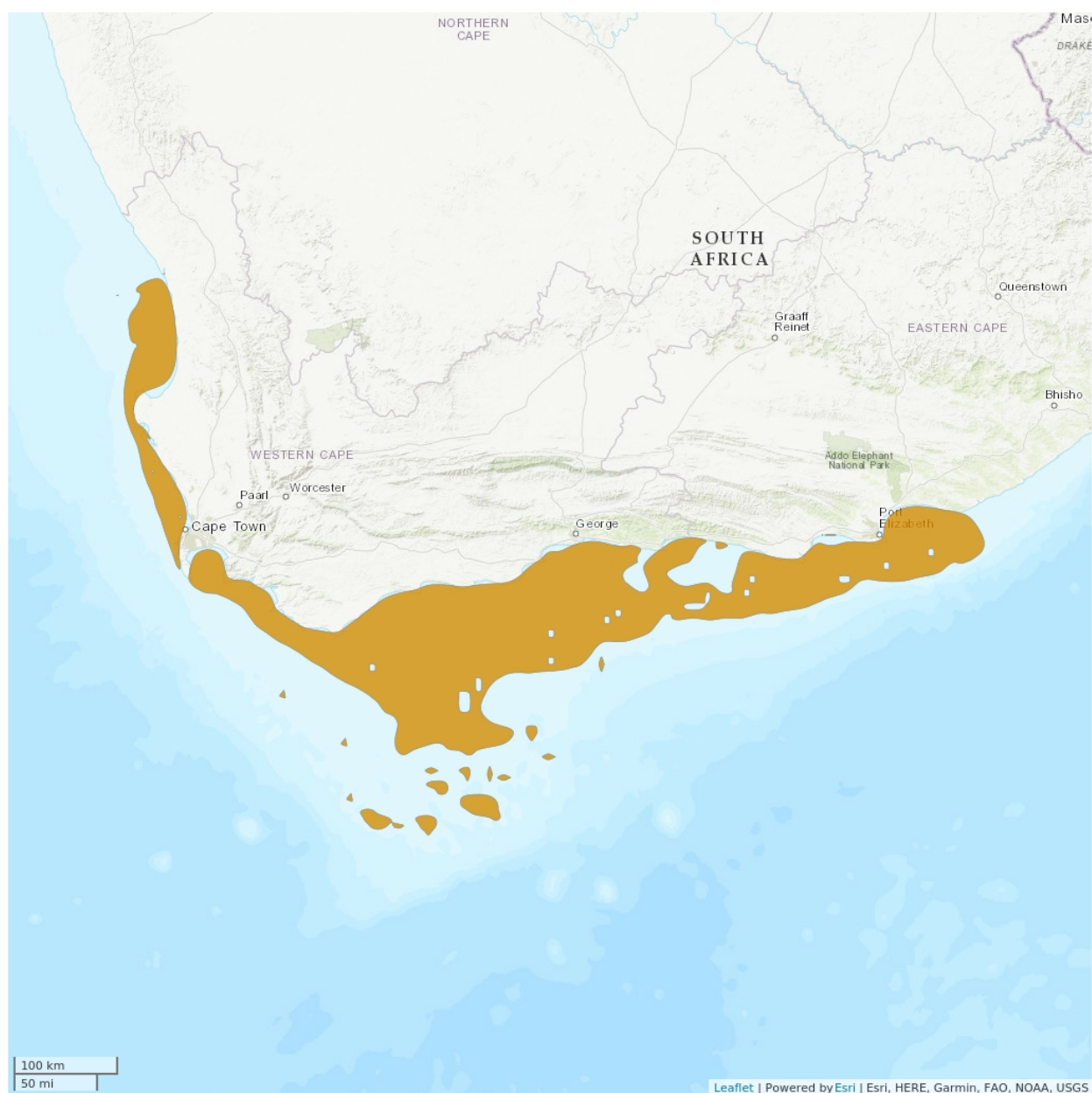
Native, Extant (resident): South Africa

FAO Marine Fishing Areas:

Native: Indian Ocean - western

Native: Atlantic - southeast

Distribution Map

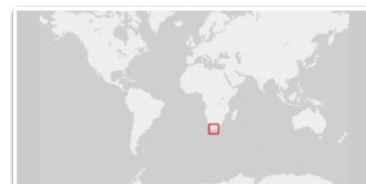


Legend

■ EXTANT (RESIDENT)

Compiled by:

IUCN SSC Shark Specialist Group 2018



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

Population

There are no estimates of population size for the Happy Eddie. Population trend data are available from two sources: (1) annual density estimates from South Africa (Department of Agriculture, Forestry and Fisheries (DAFF), unpubl. data, 2018); and (2) number of fish per angler per day from surveys in the De Hoop Marine Protected Area (MPA), South Africa (Department of Environmental Affairs (DEA), unpubl. data, 2018). The trend data from each source were analysed over three generation lengths using a Bayesian state-space framework (Winker and Sherley 2019). This analysis yields an annual rate of change, a median change over three generation lengths, and the probability of the most likely IUCN Red List category percent change over three generations (see the Supplementary Information).

First, the annual density estimates (kg per nm² area swept) were available from demersal research trawl surveys conducted over 26 years (1991–2016) in fished areas of South Africa during autumn and spring along the south coast by the Fisheries Branch of the South African Department of Agriculture, Forestry and Fisheries (DAFF, unpubl. data, 2018). The trend analysis revealed an annual rate of reduction of 3.4%, consistent with a median reduction of 87.7% over three past generation lengths (60 years), with the highest probability (64.9%) of >80% reduction over three generation lengths. The estimated reduction is driven partly by a steep decline in catch rates during the early 1990s when fishing pressure in South Africa was substantially higher; over the last two decades the population reduction has been less dramatic. Some of the reduction is possibly a result of a geographic shift in abundance away from the trawl grounds due to climate change (Currie *et al.* 2019). The southward range shift also likely represents a loss of habitat for the Happy Eddie.

Second, the number of fish per angler per day for 1996–2017 (22 years) were available from the De Hoop MPA shore-based research angling surveys conducted by the South African Department of Environmental Affairs (DEA, unpubl. data, 2018). The abundance of the species fluctuated considerably over the 22 years. The trend analysis revealed an annual rate of reduction of 6.6%, consistent with a median reduction of 96.5% over three past generation lengths (60 years), with the highest probability (93.2%) of >80% reduction over three generation lengths. The De Hoop MPA was established in 1985 and is a no-take reserve, and this may not be representative of the population trends in fished areas of South Africa.

Overall, due to an estimated population reduction over most of its range, combined with a substantial reduction in fishing effort in South Africa and a suspected range shift due to climate change that could account for some of the estimated reduction but also likely represents a decline in area of occupancy, it is suspected that this species has undergone a population reduction of 50–79% over the past three generation lengths (60 years).

For further information about this species, see [Supplementary Material](#).

Current Population Trend: Decreasing

Habitat and Ecology (see Appendix for additional information)

The Happy Eddie is demersal on rocky reefs, in kelp forests, over sandy substrates, and on the upper continental slope to a depth of 288 m, though mostly at depths of 30–90 m (Human 2007, Ebert *et al.* 2013, Weigmann 2016). The preferred depth range and habitat of this species varies across its

distribution; in the west, it occurs from the intertidal to 30 m in kelp forests and rocky reefs (K. Gledhill, unpubl. data, 2018), whereas in the east, it is found predominantly deeper on sandy habitat (Bass *et al.* 1975, Human 2007). The Happy Eddie reaches a maximum size of 64 cm total length (TL); males and females mature at 37 cm TL (Human 2007, Ebert *et al.* 2013, Weigmann 2016). Reproduction is oviparous with egg cases laid in pairs, reproductive periodicity is unknown, and size-at-birth of 9.3 cm TL (Bertolini 1993). Age-at-maturity and maximum age are unknown. Catsharks are difficult to age and the most reliable age estimates to date are from the Blacktip Sawtail Catshark (*Galeus sauteri*) that has an age-at-maturity of 9 years and maximum age of 21 years, resulting in a generation length of 15 years (Liu *et al.* 2011). The Blacktip Sawtail Catshark is smaller than the Happy Eddie (48 cm vs 64 cm TL) and thus based on scaled-size, the generation length is inferred as 20 years for the Happy Eddie.

Systems: Marine

Use and Trade (see Appendix for additional information)

The utilization of the Happy Eddie is unknown.

Threats (see Appendix for additional information)

The Happy Eddie is bycatch of a range of fisheries, including beach seine, gillnet, trawl, recreational and commercial line, rock lobster, and demersal shark longlines (da Silva *et al.* 2015). This species has a greater likelihood of capture in line fisheries compared to some other catsharks because it tends to take large hooks. Fisheries operate throughout its range, but trawl fishery effort in South Africa has decreased substantially over the past two decades (S. Fennessy, pers. comm., 20 April 2018). Recreational and rock lobster fishers consider the species a nuisance and persecute them as such, likely causing high mortality (Human 2009). When discarded from other fisheries, post-release mortality is likely low, based on generally very low at-vessel and post-release mortality for catsharks (Ellis *et al.* 2017). The Happy Eddie has tended to move southward within South Africa over three decades from 1981–2016, with a possible concurrent loss of area occupied (Currie *et al.* 2019). The range shift is likely at least partially related to climate change (Rouault *et al.* 2010, Blamey *et al.* 2015). The hatching rate of egg cases is temperature specific and potentially sensitive to climate change (M. McCord, unpubl. data, 2018).

Conservation Actions (see Appendix for additional information)

There are no species-specific protections or conservation measures in place for this species at present. Recreational anglers in South Africa are restricted to one shark per species per day (maximum of 10 individuals per day) (da Silva *et al.* 2015), although enforcement is an ongoing issue. Further research is needed on population size and trends, and life history, and catch rates should be monitored.

Credits

Assessor(s): Pollom, R., Da Silva, C., Gledhill, K., Leslie, R., McCord, M.E. & Winker, H.

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Contributor(s): Herman, K., Human, B. & Rigby, C.L.

**Facilitator(s) and
Compiler(s):** Kyne, P.M., Pollom, R. & Dulvy, N.K.

Authority/Authorities: IUCN SSC Shark Specialist Group (sharks and rays)

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Citation

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External Resources

For [Supplementary Material](#), and for [Images and External Links to Additional Information](#), please see the Red List website.

Appendix

Habitats

(<http://www.iucnredlist.org/technical-documents/classification-schemes>)

Habitat	Season	Suitability	Major Importance?
9. Marine Neritic -> 9.2. Marine Neritic - Subtidal Rock and Rocky Reefs	Resident	Suitable	Yes
9. Marine Neritic -> 9.4. Marine Neritic - Subtidal Sandy	Resident	Suitable	Yes
9. Marine Neritic -> 9.7. Marine Neritic - Macroalgal/Kelp	Resident	Suitable	Yes
11. Marine Deep Benthic -> 11.1. Marine Deep Benthic - Continental Slope/Bathyl Zone (200-4,000m)	-	-	-

Threats

(<http://www.iucnredlist.org/technical-documents/classification-schemes>)

Threat	Timing	Scope	Severity	Impact Score
5. Biological resource use -> 5.4. Fishing & harvesting aquatic resources -> 5.4.3. Unintentional effects: (subsistence/small scale) [harvest]	Ongoing	Majority (50-90%)	Slow, significant declines	Medium impact: 6
	Stresses:	2. Species Stresses -> 2.1. Species mortality		
5. Biological resource use -> 5.4. Fishing & harvesting aquatic resources -> 5.4.4. Unintentional effects: (large scale) [harvest]	Ongoing	Majority (50-90%)	Slow, significant declines	Medium impact: 6
	Stresses:	2. Species Stresses -> 2.1. Species mortality		

Conservation Actions in Place

(<http://www.iucnredlist.org/technical-documents/classification-schemes>)

Conservation Action in Place
In-place research and monitoring
Action Recovery Plan: No
Systematic monitoring scheme: No
In-place land/water protection
Conservation sites identified: No
Occurs in at least one protected area: Unknown
Invasive species control or prevention: Not Applicable
In-place species management
Harvest management plan: No

Conservation Action in Place
Successfully reintroduced or introduced benignly: No
Subject to ex-situ conservation: No
In-place education
Subject to recent education and awareness programmes: No
Included in international legislation: No
Subject to any international management / trade controls: No

Conservation Actions Needed

(<http://www.iucnredlist.org/technical-documents/classification-schemes>)

Conservation Action Needed
1. Land/water protection -> 1.1. Site/area protection
3. Species management -> 3.1. Species management -> 3.1.1. Harvest management
3. Species management -> 3.2. Species recovery

Research Needed

(<http://www.iucnredlist.org/technical-documents/classification-schemes>)

Research Needed
1. Research -> 1.2. Population size, distribution & trends
1. Research -> 1.3. Life history & ecology
1. Research -> 1.4. Harvest, use & livelihoods
3. Monitoring -> 3.1. Population trends
3. Monitoring -> 3.2. Harvest level trends

Additional Data Fields

Distribution
Lower depth limit (m): 288
Upper depth limit (m): 0
Habitats and Ecology
Generation Length (years): 20

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