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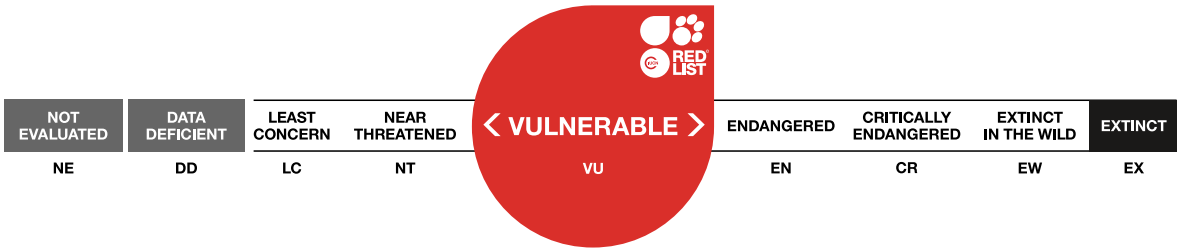
Bathyraja albomaculata, Whitedotted Skate

Assessment by: Pollom, R. *et al.*



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Taxonomy

Kingdom	Phylum	Class	Order	Family
Animalia	Chordata	Chondrichthyes	Rajiformes	Arhynchobatidae

Scientific Name: *Bathyraja albomaculata* (Norman, 1937)

Synonym(s):

- *Raja albomaculata* Norman, 1937
- *Rhinoraja albomaculata* (Norman, 1937)

Common Name(s):

- English: Whitedotted Skate
- Spanish; Castilian: Raya de Manchas Blancas, Rayas de Lunares

Taxonomic Source(s):

Fricke, R., W.N. Eschmeyer and R. Van der Laan (eds.). 2020. Eschmeyer's catalog of fishes: Genera, species, references. Available at: http://researcharchive.calacademy.org/research/ichthyology/catalog/fishcatmain.asp. (Accessed: March 2020).

Taxonomic Notes:

Compagno (1999, 2005) reallocated this species from *Bathyraja* to the genus *Rhinoraja* but the validity of this move remains unconfirmed. Both are currently in use, but Rhinoraja is now accepted as *Bathyraja* (Last et al. 2016, Ebert 2016).

Assessment Information

Red List Category & Criteria: Vulnerable A2bd ver 3.1

Year Published: 2020

Date Assessed: February 7, 2019

Justification:

The Whitedotted Skate (*Bathryraja albomaculata*) is a large (to 150 cm total length) skate that occurs in the Southeast Pacific and Southwest Atlantic Oceans from Coquimbo, Chile south around Cape Horn and north to Uruguay, including the Falkland Islands (Malvinas) and the Burdwood Bank, and is demersal on the inshore continental shelf and upper slope at depths of 55–945 m. It is captured in industrial longline and trawl fisheries, which operate throughout its range. Although discarded dead in some parts of its range, it is utilized for human consumption in others. In the Southeast Pacific, skates targeted in fisheries (*Dipturus* spp.) have undergone severe population reductions where this species is captured as unmanaged bycatch. In the Southwest Atlantic, there are some general management measures in place for skates but they are not species-specific. This skate is now absent from approximately one-third of its distribution in Argentina due to heavy fishing pressure on skates. Overall, due to the level of exposure to inadequately managed fisheries, noted population reductions in other skates, its lack of refuge at depth, a suspected decline in area of occupancy, and a combination of declines in some areas and stability in

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others, it is suspected that the Whitedotted Skate has undergone a population reduction of 30–49% over the past three generations (40.5 years). Therefore, the Whitedotted Skate is assessed as Vulnerable A2bd.

Previously Published Red List Assessments

2018 – Vulnerable (VU)
https://dx.doi.org/10.2305/IUCN.UK.2018-2.RLTS.T63102A136602064.en

2007 – Vulnerable (VU)
https://dx.doi.org/10.2305/IUCN.UK.2007.RLTS.T63102A12604017.en

Geographic Range

Range Description:

The Whitedotted Skate occurs in the Southeast Pacific and Southwest Atlantic Oceans from Coquimbo, Chile south around Cape Horn (Bustamante *et al.* 2014) and North to Uruguay (Ruocco *et al*. 2006), the Falkland Islands (Malvinas) and Burdwood Bank (Menni and Stehmann 2000).

Country Occurrence:

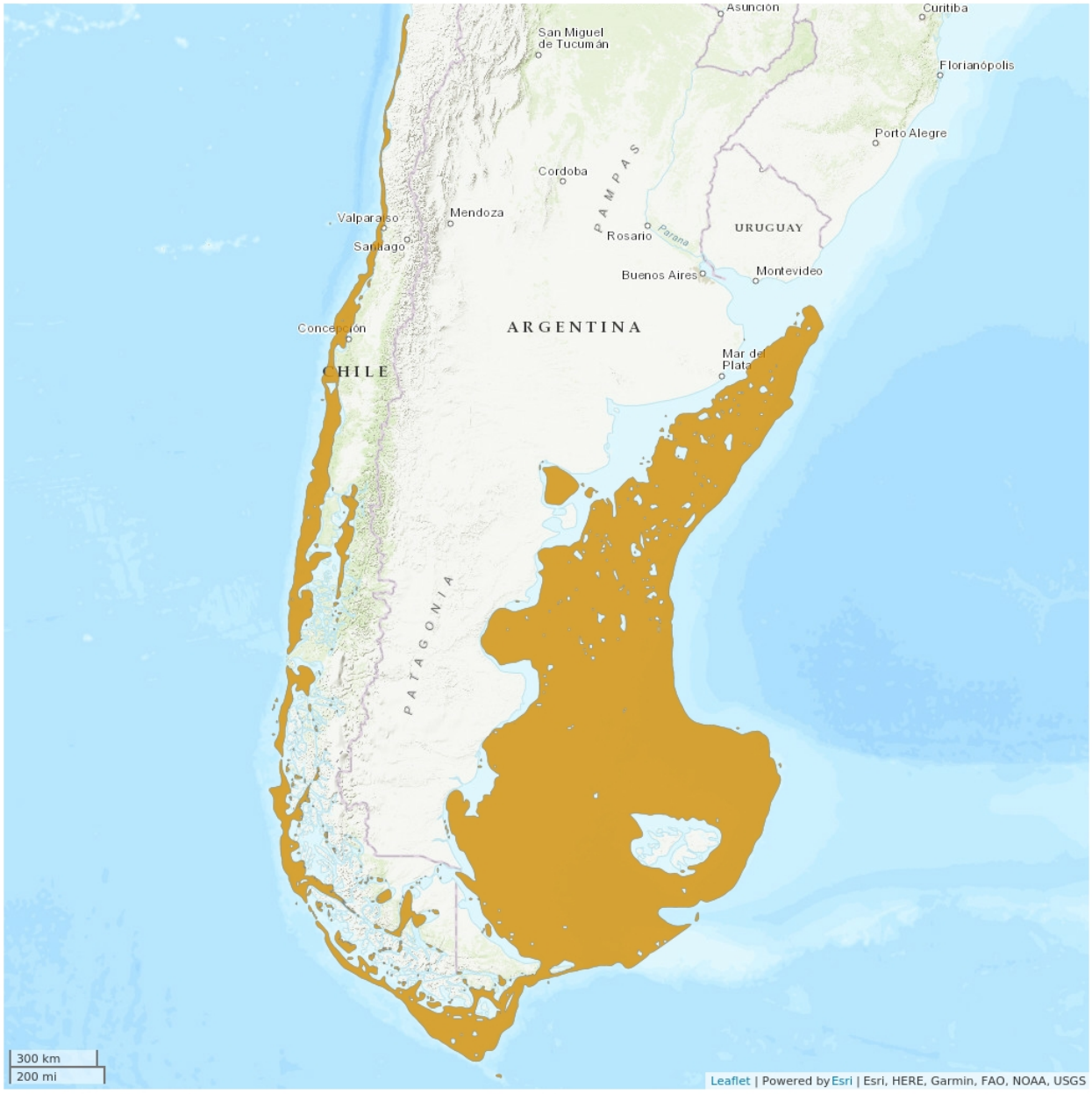
Native, Extant (resident): Argentina; Chile; Falkland Islands (Malvinas); Uruguay

FAO Marine Fishing Areas:

Native: Atlantic - southwest

Native: Pacific - 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.

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Population

There are no estimates of population size for this skate. There have been heavy target and bycatch fisheries for skates in Chilean and Argentinian waters, and steep declines are suspected. However, this species seems to be abundant and stable elsewhere in the Southwest Atlantic, including the Falkland Islands (Malvinas).

In the Southeast Pacific, the targeted Yellownose Skate (*Dipturus chilensis*) was estimated to have undergone a population reduction of 50–79% over three generation lengths (52.5 years for that species) due to overfishing, and this species is captured as bycatch with Yellownose Skate in that fishery.

In the Southwest Atlantic, the Whitedotted Skate is one of the most commonly captured skates caught in the target skate fishery north of the Falkland Islands (Malvinas); standardized catch-per-unit-effort there increased from 1993 to a peak in 2006–2007 and declined thereafter until 2017 (Winter 2018). In Argentina, this species was most abundant on the outer continental shelf and slope in two areas, in the northern and central area, from Rio del Plata to Comodora Rivadavia (between 36.3 and 45 degrees S) and west of the Falkland Islands (Malvinas) (Ruocco *et al.* 2006). In contrast, it was generally absent between in the central south area (48 to 52 degrees S), a region where it was reported as formerly abundant (Ruocco *et al.* 2006). Species-specific catch time-series for Argentinian skate fisheries are unavailable, but overall skate landings were <1,000 t prior to 1994, rising to >15,000 t in 2001, reaching a peak of 28,038 t in 2007 and dropping to 17,793 t in 2017 (G. Chiaramonte, unpubl. data 2019). In the Argentina-Uruguay Common Fishing Zone (AUCFZ), species-specific data re not available but landings of 'offshore skates' have only been recorded since 2014 and have fluctuated between 2,000 and 4,500 t (CTMFM 2018).

Overall, due to the level of inadequately managed fisheries that it is exposed to, noted population reductions in other skates, and a combination of declines in some areas and stability in others, it is suspected that the Whitedotted Skate has undergone a population reduction of 30–49% over the past three generations (40.5 years).

Current Population Trend: Decreasing

Habitat and Ecology **(see Appendix for additional information)**

The Whitedotted Skate is demersal on the continental shelf and upper slope at depths of 55–945 m (Last *et al.* 2016). It reaches a maximum size of 150 cm total length (TL) in Chile (C. Bustamante unpubl. data 2019) and 99 cm TL in the Falkland Islands (Malvinas) (Agnew *et al.* 2000). In Argentina, females mature at 65.3 cm TL and males at 62.8 cm TL and (Ruocco *et al*. 2006). In the Falkland Islands (Malvinas), females mature at 57.2 cm TL and males at 59.4 cm TL (Henderson *et al*. 2004). As in other skates, reproduction is oviparous (Last *et al.* 2016); ovarian fecundity ranges from 4 to 32 with a mean of 14. An annual reproductive cycle is suspected and size at hatch is 10.5 cm disc width (Henderson *et al*. 2004). Female age-at-maturity is 10 years and longevity is 17 years (Henderson *et al*. 2004), therefore generation length is estimated to be about 13.5 years.

Systems: Marine

Use and Trade

In Chile, this skate is discarded dead and is not utilized. Korean buyers prefer long-nosed dark-bellied skates (*Dipturus* spp.) rather than the white-bellied (*Bathyraja* spp.) skates. Skates larger than 30 cm disc width are generally retained in the Southwest Atlantic (Laptikhovsky 2004).

Threats (see Appendix for additional information)

This skate is captured as bycatch of longline and trawl fisheries that operate throughout its geographic and depth range. In the Southeast Pacific, it is captured by four main fisheries operating throughout its depth distribution: the bottom longline fishery targeting Patagonian Toothfish (*Dissostichus eleginoides*) fishing from 800–1,600m (Reyes and Torres-Florez 2009), the Yellownose Skate longline fishery, which operates from 150–300 m (Lamilla *et al.* 2009), the deepwater crustacean fishery operating from 250–500 m (Acuña *et al.* 2019), and the trawl and longline fishery for Chilean Hake (*Merluccius australis*) operating at depths of 50–300 m (Mateo *et al.* 2019). In Chile, it was captured between 379–461 m and is the third most abundant skate in the Yellownose Skate fishery discards (Lamilla *et al.* 2009).

In the Southwest Atlantic, in the shelf waters of Argentina, fishing pressure on all skate species is rising due to increasing demand on the international market. Skates are exploited over much of the Argentinean continental shelf (e.g. García de la Rosa *et al.* 2000). Skates, principally Warrah Skate (*Dipturus lamillai*, formerly *Z. chilensis*), were directly targeted by a licensed Korean longliner on the continental shelf off Mar del Plata, Argentina (Colonello *et al.* 2002) and were also taken in coastal fisheries (Massa *et al.* 2004). It is caught in trawl fisheries targeting Argentine Hake (*Merluccius hubbsi*) at around 100–200 m off Uruguay and Argentina. Furthermore, it was captured in 50% of trawl hauls for Patagonian Scallop (*Zygochlamys patagonica*) in one study (Schejter *et al.* 2012). That fishery operates to about 500 m depth.

This skate has been shown to decline in relative abundance compared to other smaller skates in heavily fished areas, indicating that its life history is not productive enough to withstand current levels of fishing (Ruocco *et al.* 2012).

Overall, although not targeted, the Whitedotted Skate is exposed to intense, inadequately managed, and in some areas increasing fishing pressure throughout its geographic range, and there is no refuge at depth. Its large size and low productivity indicate that it is not likely to be able to withstand fishing pressure.

Conservation Actions (see Appendix for additional information)

There are no species-specific protections or management measures in place for this skate. In Chile, the target skate fishery is regulated through reference points and an annual total allowable catch for the target Yellownose Skate (70 t in 2018), with no further species-specific measures in place (Mateo *et al.* 2019). Regulations and management tools need to be species-specific due to differing life histories and abundance patterns between the target Yellownose Skate and other species caught as bycatch such as this.

In Argentina, the assessment of direct and indirect catches is a priority. In the AUCFZ, it is managed with

the group 'offshore skates' through a total allowable catch (CTMFM 2018). In the Falklands (Malvinas), the multi-species skate fishery is managed by limiting effort. There is a multispecies stock assessment, but this may not translate into sustainable effort for individual species (Winter *et al.* 2015). Species-specific management and monitoring is needed in all fisheries operating within its range. Further research is needed on life history, population size and trend, and threats.

Credits

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

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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 -> 9.3. Marine Neritic - Subtidal Loose Rock/pebble/gravel	Resident	Suitable	Yes
9. Marine Neritic -> 9.4. Marine Neritic - Subtidal Sandy	Resident	Suitable	Yes
9. Marine Neritic -> 9.5. Marine Neritic - Subtidal Sandy-Mud	Resident	Suitable	Yes
9. Marine Neritic -> 9.6. Marine Neritic - Subtidal Muddy	Resident	Suitable	Yes
11. Marine Deep Benthic -> 11.1. Marine Deep Benthic - Continental Slope/Bathyl Zone (200-4,000m)	-	-	-

Use and Trade

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

End Use	Local	National	International
Food - human	No	Yes	Yes

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 -> 5.4.2. Intentional use: (large 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 -> 5.4.3. 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)

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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
Area based regional management plan: No
Occurs in at least one protected area: Unknown
Invasive species control or prevention: Not Applicable
In-place species management
Harvest management plan: Yes
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
3. Species management -> 3.1. Species management -> 3.1.1. Harvest management

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
1. Research -> 1.5. Threats
2. Conservation Planning -> 2.3. Harvest & Trade Management Plan
3. Monitoring -> 3.1. Population trends

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Research Needed
3. Monitoring -> 3.2. Harvest level trends
3. Monitoring -> 3.3. Trade trends

Additional Data Fields

Distribution
Lower depth limit (m): 945
Upper depth limit (m): 55
Habitats and Ecology
Generation Length (years): 13.5

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