

RED LIST ASSESSMENT NEW ASSESSMENT 2010

Questionnaire

(please complete one questionnaire per taxon, extra sheets may be used)

Administrator 10-8-10 11:05 AM

Comment: PLEASE NOTE: This is a DRAFT assessment and has not been evaluated (i.e. undergone the SSG and IUCN review processes). It is to be used as an example of how to populate a Red List Questionnaire, and should not be used to judge the status of this particular species.

1. SCIENTIFIC AND COMMON NAMES.

The IUCN Red List generally focuses at the species level. Subspecies, plant varieties, and subpopulations (as defined in the IUCN Red List Categories and Criteria, Version 3.1) may also be assessed and will be considered for inclusion in the IUCN Red List only if the species-level assessment is also available. Hybrids will not be considered for inclusion in the IUCN Red List. For currently undescribed species, please refer to the rules outlined in section 2.1 of current version of the *Guidelines for Using the IUCN Red List Categories and Criteria*.

1a. Scientific name (including authority details):

Dipturus endeavouri Last, 2008

1b. Synonym/s (if there has been a taxonomic change in the last 5 years or if widely used):

As *Raja polyommata* Ogilby, 1910 (in part): Last and Stevens (1994).

1c. English Common Name (if known):

Endeavour skate

1d. Other Common Names (if known and state language):

2. HIGHER TAXONOMY

Note that the IUCN Red List does not record sub-families, sub-orders, etc. Only the taxonomic levels requested below should be provided. A taxonomic notes field is also provided to allow further details about taxonomy to be recorded – see section 4a.

2a. Kingdom

Animalia

2b. Phylum

Chordata

2c. Class

Chondrichthyes

2c. Order

Rajiformes

2b. Family

Rajidae

3. COUNTRY, SUBCOUNTRY AND MARINE AREA OCCURRENCES

Provide a list of the **countries** and **subcountry units** (e.g., states, provinces, etc.) in which this taxon occurs. For marine taxa, also record names of FAO fisheries areas and (optional) Large Marine Ecosystems (LME).

Presence: For each country, subcountry or marine area, please record whether this taxon is extant, extinct, possibly extinct, or presence uncertain.

Origin: For each country, subcountry or marine area, please record whether this taxon is native, reintroduced, introduced, vagrant, or origin uncertain.

Note: A distribution map showing the extent of occurrence **MUST** also be attached.

See the current version of the *Guidelines for Using the IUCN Red List Categories and Criteria* for the IUCN definition of "extent of occurrence".

3a. Countries			3b. Subcountry units (if known)		
Country name	Presence	Origin	Subcountry unit name	Presence	Origin
Australia	Extant	Native	Queensland	Extant	Native
			New South Wales	Extant	Native

3c. Marine Areas		
FAO area name or LME	Presence	Origin
Western Central Pacific (FAO Fisheries Area 71)	Extant	Native
Southwest Pacific (FAO Fisheries Area 81)	Extant	Native

4. TEXT DOCUMENTATION

Provide a short narrative for each of the topics below to support the information used for the Red List assessment in section 5 and to complement and provide more detail for the Classification Scheme codes for habitats, threats, stresses and conservation actions recorded in Annex 1 (use additional sheets if required).

Please avoid using one-word answers in this section; the Red List assessment should be treated in the same way as a scientific paper, where the information is presented as clearly as possible for the reader, and all references used as cited within the text.

4a. Taxonomic Notes

Record any recent taxonomic changes or current taxonomic doubts or debates about the validity or identity of the taxon.

Last (2008) considered the previously wider-ranging *Dipturus polyommata* (Ogilby, 1910) to consist of two species, the southern form (and that considered here) was described as *Dipturus endeavouri* Last, 2008 and the northern form is considered *D. polyommata* (Ogilby, 1910). Last (2008) outlines in detail the justification for this taxonomic change and explains nomenclature.

4b. Distribution

Provide a summary of the current information available about the taxon's geographic range. Include a mention of important sites for this taxon.

Dipturus endeavouri is endemic to eastern Australia in the Western Central Pacific with a relatively restricted distribution from off Fraser Island, Queensland south to near Crowdy Head, New South Wales (32°20'S) (Last and Stevens, 2009; K. Graham, pers. comm.).

4c. Population

Provide a summary of the information available for size and trend of the global population. Information about sizes and trends of subpopulations or trends in particular regions of the taxon's range can also be included in this section. If no quantitative information on population sizes or trends is available, please record whether the species is common, abundant, rare, etc. If there really is no information at all about the population, please note this.

Apparently common (Last and Stevens, 1994), however there are no details of population size, structure or trends.

Current population trend (tick (✓) one box only)	Increasing	<input type="checkbox"/>
	Decreasing	<input type="checkbox"/>
	Stable	<input type="checkbox"/>
	Unknown	<input checked="" type="checkbox"/>

4d. Habitats and Ecology

Provide a summary of the habitats occupied by the taxon, highlighting essential habitats and ecological requirements. It is not necessary to know the details of behavioural traits, etc. unless these are relevant to the taxon's Red List status (e.g., it has a particular life cycle, growth pattern or behaviour that makes it vulnerable to specific threats).

This species occurs on the outer continental shelf and upper slope at depths of 110–370 m (K. Graham, pers. comm.). Although Last and Stevens (2009) suggested that the species may occur to a depth of 500 m, this is based on erroneous information and it has not been recorded deeper than 370 m (K. Graham, pers. comm.). There are no specific details on habitat.

Maximum size is about 37 cm total length (TL), and size at 50% maturity (LT₅₀ and 95% CI) is 32.1 (30.5–33.2) and 30.0 (28.5–30.6) cm TL for females and males, respectively. Size at first maturity corresponds to 87.7% of observed maximum size in females (36.6 cm TL) and 87.5% in males (34.3 cm TL). Size at birth is estimated at about 10–11 cm and size at first feeding at about 10.5–11.0 cm TL. Like other skates, this species is oviparous, but little is known regarding reproductive output or seasonality, although it has been observed carrying egg cases during Austral winter months (Kyne *et al.*, 2008).

Elevation	Upper limit:	<input type="text"/>	Depth	Upper limit:	<input type="text" value="110"/>
in m above sea level	Lower limit:	<input type="text"/>	in m below sea level	Lower limit:	<input type="text" value="370"/>

4e. Use and Trade

Provide a summary of any utilization of and/or trade in the taxon (at local, national and international levels). Please remember that the taxon may be utilized or be the focus of local, national or international trade, but if these activities are carried out sustainably they may not actually be a threat to the species; it is therefore useful to record whether this utilization/trade is a likely threat to the global population; this information helps to identify species that are important for human livelihoods, but which may be under threat from factors other than utilization or trade.

If unknown or there is no trade in the taxon, please state this.

This species is not known to be traded. It is generally too small to be marketed and while it is a bycatch of trawl fisheries, it is discarded at sea (elasmobranchs are prohibited from being retained in the Queensland prawn trawl fishery in which this species is a bycatch).

4f. Threats

Provide a summary of the major threats affecting, or likely to affect, the taxon. Try to indicate whether these threats are historic threats that caused past population declines, or current threats affecting the population now, and whether they are likely to affect the population in future.

Please record as much detail about the threats as possible, including the main cause of the threat (the driver), the threat itself, the scale of the threat (e.g., is most of the global population affected, or is the threat affecting only small parts of the population), and the stress this threat places on the taxon (e.g., habitat degradation, loss of breeding sites, loss of prey base, direct mortality, etc.).

The eastern king prawn sector (deepwater component) of the Queensland East Coast Trawl Fishery, operates on the outer continental shelf and upper slope to depths of 300–350 m off southern Queensland (Courtney *et al.*, 2007). In surveys of this fishery on the outer continental shelf, *D. endeavouri* was found to be the most common elasmobranch bycatch species comprising 36% of the elasmobranch catch by number (Kyne, 2008). While the overall catch rate was low (0.029 ± 0.007 individuals ha^{-1}), on deck mortality was high (79% of individuals landed on deck were dead) (it should be noted that these observations were made with fishery-independent sampling employing short shots of about one hour trawl time, whereas regular commercial trawls are far longer in duration) (Kyne, 2008). This fishery operates over much of the Queensland geographic distribution of the species, but is highly seasonal, with the vast majority of effort generally occurring during the months of May to August (outside of these months, vessels fish in shallower waters where skates do not occur).

Similarly in northern New South Wales, outer shelf depths (~100–200 m) are trawled only for a short season targeting king prawns, and generally on fairly restricted fishing grounds (K. Graham, pers. comm.). Information on bycatch of skates is lacking, but it is most probable that *D. endeavouri* is a component of the bycatch since its range overlaps with that of the fishery. Northern New South Wales, in the area of occurrence of *D. endeavouri* on the upper continental slope, receives little trawling effort (K. Graham, pers. comm.), and as such this species may have some refuge at the deeper extent of its bathymetric range.

Given that much of the species' Queensland range and parts of its New South Wales continental shelf range are trawled, albeit seasonally, and that on deck mortality has been shown to be high, an assessment of Near Threatened is warranted based on a suspected population reduction in the past as a result of 'actual levels of exploitation' (as discarded bycatch with high mortality in long established seasonal trawl fisheries). This assessment applies the precautionary principle, and until such time as surveys can demonstrate that a healthy population exists on the upper continental slope outside the area of current trawling activities, concern is warranted for this relatively narrow-ranging skate.

4g. Conservation Actions

Provide a summary of the conservation actions currently in place, and **realistic** actions needed to mitigate the

major threats to the taxon (if any). This section should not be used to record a full "wish list" of conservation actions for the species; please try to restrict recommendations to those actions that could realistically be implemented and have a good chance of improving the status of the taxon.

No conservation actions are currently in place for this species. Due to their small size, turtle exclusion devices used in the Queensland trawl fishery are not effective at limiting catches (Kyne, 2008). There is no regular monitoring of bycatch in commercial fisheries and so catch and trend information, which is vital to inform management, are lacking.

5. DATA FOR RED LIST CRITERIA

Record the available data for population sizes, trends, decline rates, ranges, etc. to compare against the IUCN Red List Criteria thresholds.

For full IUCN definitions of "population size", "subpopulation", "mature individuals", "generation length", "reduction", "continuing decline", "extreme fluctuation", "severely fragmented", "extent of occurrence", "area of occupancy", "location", and "quantitative analysis", please refer to the current version of the *Guidelines for Using the IUCN Red List Categories and Criteria*.

5a. Data for criterion A: rate of population reduction

<p>Generation length (please state the unit used).</p> <div style="border: 1px solid black; width: 100px; height: 30px; margin: 5px 0;"></div>	<p>Time period used for criterion A (tick (✓) one box only)</p> <p style="text-align: center;">10 years <input type="checkbox"/></p> <p style="text-align: center;">3 generations <input type="checkbox"/></p> <p>Time period <input style="width: 80px;" type="text"/></p>	
<p>Criteria A1 and A2: % population size reduction over the last 10 yrs or 3 generations:</p> <div style="border: 1px solid black; width: 100px; height: 40px; margin: 5px 0;"></div>	<p>Data quality:</p> <p>Observed <input type="checkbox"/></p> <p>Estimated <input type="checkbox"/></p> <p>Inferred <input type="checkbox"/></p> <p>Suspected <input type="checkbox"/></p>	
<p>Are the causes of this reduction understood? (tick (✓) one box only)</p> <p>Yes <input type="checkbox"/></p> <p>No <input type="checkbox"/></p> <p>Unknown <input type="checkbox"/></p>	<p>Have the causes of the reduction now ceased? (tick (✓) one box only)</p> <p>Yes <input type="checkbox"/></p> <p>No <input type="checkbox"/></p> <p>Unknown <input type="checkbox"/></p>	<p>Is the reduction reversible? i.e., is the population now showing signs of recovery? (tick (✓) one box only)</p> <p>Yes <input type="checkbox"/></p> <p>No <input type="checkbox"/></p> <p>Unknown <input type="checkbox"/></p>
<p>Past population reduction rate based on (select any combination):</p>	<p>Direct observation <input type="checkbox"/></p> <p>Index of abundance <input type="checkbox"/></p> <p>Decline in area of occupancy, extent of occurrence, and/or habitat quality <input type="checkbox"/></p> <p>Actual or potential levels of exploitation <input type="checkbox"/></p> <p>Effects of introduced taxa, hybridization, pathogens, pollutants, competitors or parasites <input type="checkbox"/></p>	
<p>Criterion A3: % population size reduction over the next 10 yrs or 3 generations (max. 100 years in future):</p> <div style="border: 1px solid black; width: 100px; height: 40px; margin: 5px 0;"></div>	<p>Data quality:</p> <p>Projected <input type="checkbox"/></p> <p>Suspected <input type="checkbox"/></p>	
<p>Future population reduction rate based on (select any combination):</p>	<p>Index of abundance <input type="checkbox"/></p> <p>Decline in area of occupancy, extent of occurrence, and/or habitat quality <input type="checkbox"/></p> <p>Actual or potential levels of exploitation <input type="checkbox"/></p> <p>Effects of introduced taxa, hybridization, pathogens, pollutants, competitors or parasites <input type="checkbox"/></p>	
<p>Criterion A4: % population size reduction over the longer time period of 10 yrs or 3 generations, where some time falls in the past and some is projected in to the future (max. 100 yrs in future):</p> <div style="border: 1px solid black; width: 100px; height: 40px; margin: 5px 0;"></div>	<p>Data quality:</p> <p>Observed <input type="checkbox"/></p> <p>Estimated <input type="checkbox"/></p> <p>Inferred <input type="checkbox"/></p> <p>Projected <input type="checkbox"/></p> <p>Suspected <input type="checkbox"/></p>	
<p>Population reduction rate based on (select any combination):</p>	<p>Direct observation <input type="checkbox"/></p> <p>Index of abundance <input type="checkbox"/></p> <p>Decline in area of occupancy, extent of occurrence, and/or habitat quality <input type="checkbox"/></p> <p>Actual or potential levels of exploitation <input type="checkbox"/></p> <p>Effects of introduced taxa, hybridization, pathogens, pollutants, competitors or parasites <input type="checkbox"/></p>	

5b. Data for criterion B: restricted range

Criterion B1: Extent of occurrence (EOO) in <input style="width: 80px;" type="text"/>		Criterion B2: Area of occupancy (AOO) in <input style="width: 80px;" type="text"/>	
km ² :		km ² :	
Is the population severely fragmented? (tick (✓) one box only)	Yes	<input type="checkbox"/>	If yes, justify this statement in the population text box (refer to habitat fragmentation AND the dispersal abilities of the taxon).
	No	<input type="checkbox"/>	
	Unknown	<input type="checkbox"/>	
			Number of locations: <input style="width: 50px;" type="text"/>
Extent of occurrence	Continuing decline	<input type="checkbox"/>	Observed <input type="checkbox"/>
			Inferred <input type="checkbox"/>
			Projected <input type="checkbox"/>
	Extreme fluctuation	<input type="checkbox"/>	
Area of occupancy	Continuing decline	<input type="checkbox"/>	Observed <input type="checkbox"/>
			Inferred <input type="checkbox"/>
			Projected <input type="checkbox"/>
	Extreme fluctuation	<input type="checkbox"/>	
Area, extent and/or quality of habitat	Continuing decline	<input type="checkbox"/>	Observed <input type="checkbox"/>
			Inferred <input type="checkbox"/>
			Projected <input type="checkbox"/>
	Extreme fluctuation	<input type="checkbox"/>	
Number of locations or subpopulations	Continuing decline	<input type="checkbox"/>	Observed <input type="checkbox"/>
			Inferred <input type="checkbox"/>
			Projected <input type="checkbox"/>
	Extreme fluctuation	<input type="checkbox"/>	
Number of mature individuals	Continuing decline	<input type="checkbox"/>	Observed <input type="checkbox"/>
			Inferred <input type="checkbox"/>
			Projected <input type="checkbox"/>
	Extreme fluctuation	<input type="checkbox"/>	

5c. Data for criterion C: small population size and continuing decline

Population size		<input style="width: 100px; height: 20px;" type="text"/>							
Number of mature individuals in the global population:									
Is there continuing decline in the population? (tick one box only)	Yes	<input type="checkbox"/>	Rate of continuing decline known? (tick one box only)						
	No	<input type="checkbox"/>							
	Unknown	<input type="checkbox"/>							
		<table style="width: 100%; border: none;"> <tr> <td style="text-align: center;">Yes</td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> <tr> <td style="text-align: center;">No</td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> <tr> <td style="text-align: center;">Unknown</td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> </table>		Yes	<input type="checkbox"/>	No	<input type="checkbox"/>	Unknown	<input type="checkbox"/>
Yes	<input type="checkbox"/>								
No	<input type="checkbox"/>								
Unknown	<input type="checkbox"/>								
Estimated continuing decline % within 3 years or 1 generation (whichever is the longer time period; max. 100 years in future):		<input style="width: 100px; height: 20px;" type="text"/>							
Estimated continuing decline % within 5 years or 2 generation (whichever is the longer time period; max. 100 years in future):		<input style="width: 100px; height: 20px;" type="text"/>							
Estimated continuing decline % within 10 years or 3 generation (whichever is the longer time period; max. 100 years in future):		<input style="width: 100px; height: 20px;" type="text"/>							
Number of mature individuals in largest subpopulation:	<input style="width: 100px; height: 20px;" type="text"/>	% of mature individuals in largest subpopulation	<input style="width: 100px; height: 20px;" type="text"/>						
Extreme fluctuations in number of mature individuals:	Yes	<input type="checkbox"/>							
	No	<input type="checkbox"/>							
	Unknown	<input type="checkbox"/>							

5d. Data for criterion D: small population size or restricted range

Population size		<input style="width: 100px; height: 20px;" type="text"/>							
Number of mature individuals in the global population:									
Area of occupancy (AOO) in km²:	<input style="width: 100px; height: 20px;" type="text"/>	Number of locations:	<input style="width: 100px; height: 20px;" type="text"/>						
		<table style="width: 100%; border: none;"> <tr> <td style="text-align: center;">Yes</td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> <tr> <td style="text-align: center;">No</td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> <tr> <td style="text-align: center;">Unknown</td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> </table>		Yes	<input type="checkbox"/>	No	<input type="checkbox"/>	Unknown	<input type="checkbox"/>
Yes	<input type="checkbox"/>								
No	<input type="checkbox"/>								
Unknown	<input type="checkbox"/>								
		Is there a plausible threat that could rapidly push the taxon towards extinction?							

5e. Data for criterion E: quantitative analysis

Has a quantitative analysis predicting probability of extinction been carried out? (e.g. Population Viability Analysis)	Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/>
Probability (%) of extinction within the next 10 years or 3 generations (use the longer time period; max. 100 years in future)	<input type="text"/>
Probability (%) of extinction within the next 20 years or 5 generations (use the longer time period; max. 100 years in future)	<input type="text"/>
Probability (%) of extinction within the next 100 years	<input type="text"/>

6. RED LIST ASSESSMENT

Assess the taxon using the information and data recorded in section 4 and 5, and following the *IUCN Red List Categories and Criteria: version 3.1.* and current version of the *Guidelines for Using the IUCN Red List Categories and Criteria* for guidance on applying the IUCN criteria.

6a. Red List Category & Criteria

Tick (✓) one of the following Red List categories, For taxa qualifying for a threatened category (CR, EN or VU), record all criteria and subcriteria met. For the NT category, record all criteria and subcriteria nearly met:

<input type="checkbox"/>	Extinct (EX)	Date last seen in wild (day/month/year)	<input type="text"/>
<input type="checkbox"/>	Extinct in the Wild (EW)	Date last seen in wild (day/month/year)	<input type="text"/>
<input type="checkbox"/>	Critically Endangered (CR)	Criteria met for CR	<input type="text"/>
<input type="checkbox"/>	Endangered (EN)	Criteria met for EN	<input type="text"/>
<input type="checkbox"/>	Vulnerable (VU)	Criteria met for VU	<input type="text"/>
<input checked="" type="checkbox"/>	Near Threatened (NT)	Criteria nearly met for NT	<input type="text"/>
<input type="checkbox"/>	Least Concern (LC)		
<input type="checkbox"/>	Data Deficient (DD)		
<input type="checkbox"/>	Not Evaluated (NE)		

Is this taxon Possibly Extinct? (applies to CR taxa only)	Yes	<input type="text"/>
	No	<input type="text"/>
	Unknown	<input type="text"/>

6b. Rationale for the assessment

Provide a summary of the reasons why the taxon qualifies for the category and criteria recorded in section 6a. Include any population or range information used, inferences, assumptions, etc. For NT specify what criteria were nearly met and for DD state what little information is known. Please refer to the *IUCN Red List Categories and Criteria: version 3.1.* and the current version of the *Guidelines for Using the IUCN Red List Categories and Criteria* for guidance on definitions of terms and applying the IUCN criteria).

Dipturus endeavouri is a small skate (reaching 37 cm total length), endemic to eastern Australia in the Western Central Pacific off southern Queensland and northern New South Wales. Recent taxonomic revision has split *D. endeavouri* from *Dipturus polyommata* (Ogilby, 1910), which occurs off northeastern Queensland. As such, *D. endeavouri* has a relatively restricted distribution on the outer continental shelf and upper slope in depths of 110–370 m. Like other skates, this species is oviparous, but little is known regarding reproductive output or seasonality, although it has been observed carrying egg cases during Austral winter months. Off southern Queensland, where seasonal prawn trawling occurs on the outer continental shelf and upper slope, this skate is the most common elasmobranch bycatch species in outer shelf trawling, and on deck mortality is high. Seasonal trawling also occurs over the species' continental shelf distribution off northern New South Wales, but bycatch details are lacking. Off northern New South Wales, in the area of occurrence of *D. endeavouri*, the upper continental slope receives little trawling effort, and as such this species may have some refuge at the deeper extent of its bathymetric range. However, given that much of the species' Queensland range and parts of its New South Wales continental shelf range are trawled, albeit seasonally, and that on deck mortality has been shown to be high, an assessment of Near Threatened is warranted. This is based on a suspected population reduction in the past as a result of 'actual levels of exploitation' (as discarded bycatch with high mortality in long established seasonal trawl fisheries). This assessment applies the precautionary principle, and until such time as surveys can demonstrate that a healthy population exists on the upper continental slope outside the area of current trawling activities, concern is warranted for this relatively narrow-ranging skate.

Assessment Date:	10	08	2010

Assessors' Names:	Given Name(s)	Family Name	Email Address	Institution
	Peter M.	Kyne	peter.kyne@cdu.edu.au	Charles Darwin University

6c. Changes in Red List status

Check the IUCN Red List web site (www.iucnredlist.org) to find out whether the taxon has previously been assessed.

Has this taxon been assessed for a previous IUCN Red List?	Yes	<input checked="" type="checkbox"/>	If yes, what was the previous assessment?	Data Deficient (assessment date 08 March 2003). DD assessment in part as was combined with <i>Dipturus polyommata</i> ; <i>Dipturus endeavouri</i> is now considered separate from <i>D. polyommata</i> .
	No	<input type="checkbox"/>		
	Unknown	<input type="checkbox"/>		

If yes, has the taxon changed category since its last assessment?	Yes	<input checked="" type="checkbox"/>	If no, have the criteria changed?	Yes	<input type="checkbox"/>
	No	<input type="checkbox"/>		No	<input type="checkbox"/>

Reason for change in category:

Genuine change	Recent change	<input type="checkbox"/>	Non-genuine change	New/better information available	<input checked="" type="checkbox"/>
	Change since first assessment	<input type="checkbox"/>		Taxonomic change	<input checked="" type="checkbox"/>
				Incorrect application of criteria previously	<input type="checkbox"/>
				Criteria thresholds changed since previous assessment	<input type="checkbox"/>

7. LITERATURE REFERENCES

Provide a list of all published and unpublished reference sources used for the information recorded above. Please provide full references, and try to avoid abbreviations (e.g., write *Conservation Biology* rather than *Cons. Biol.*).

Courtney, A.J., Haddy, J.A., Campbell, M.J., Roy, D.P., Tonks, M.L., Gaddes, S.W., Chilcott, K.E., O'Neill, M.F., Brown, I.W., McLennan, M., Jebreen, J.E., van der Geest, C., Rose, C., Kistle, S., Turnbull, C.T., Kyne, P.M., Bennett, M.B. and Taylor, J. 2007. *Bycatch weight, composition and preliminary estimates of the impact of bycatch reduction devices in Queensland's trawl fishery*. FRDC Project 2000/170 Final Report.

Kyne, P.M. (2008) Chondrichthyans and the Queensland East Coast Trawl Fishery: Bycatch reduction, biology, conservation status and sustainability. PhD Thesis. The University of Queensland, Brisbane.

Kyne, P.M. Courtney, A.J. and Bennett, M.B. (2008) Aspects of reproduction and diet of the Australian endemic skate *Dipturus polyommata* (Ogilby) (Elasmobranchii: Rajidae), by-catch of a commercial prawn trawl fishery. *Journal of Fish Biology* **72**, 61–77.

Last, P.R. (2008) New short-snout members of the skate genus *Dipturus* (Rajoidei: Rajidae) from Australian seas. Pp. 53–99. In: Last, P.R., White, W.T., Pogonoski, J.J. and Gledhill, D.C. (Eds) Descriptions of new Australian skates (Batoidea: Rajoidei). *CSIRO Marine and Atmospheric Research Paper* No. 021.

Last, P.R. and Stevens, J.D. (1994) *Sharks and Rays of Australia*. CSIRO Division of Fisheries, Hobart.

Last, P.R. and Stevens, J.D. (2009) *Sharks and Rays of Australia*. Second Edition. CSIRO Publishing, Collingwood.

RED LIST ASSESSMENT RE-ASSESSMENT 2010

Questionnaire

(please complete one questionnaire per taxon, extra sheets may be used)

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1c. English Common Name (if known):

Argus skate

1d. Other Common Names (if known and state language):

2. HIGHER TAXONOMY

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4a. Taxonomic Notes

Record any recent taxonomic changes or current taxonomic doubts or debates about the validity or identity of the taxon.

Last (2008) considered the previously wider-ranging *Dipturus polyommata* (Ogilby, 1910) to consist of two species, the southern form was described as *Dipturus endeavouri* Last, 2008 and the northern form (that considered here) is *D. polyommata* (Ogilby, 1910). Last (2008) outlines in detail the justification for this taxonomic change and explains nomenclature.

4b. Distribution

Provide a summary of the current information available about the taxon's geographic range. Include a mention of important sites for this taxon.

Dipturus polyommata is endemic to northeastern Australia in the Western Central Pacific with a relatively restricted distribution from off Townsville to Rockhampton, Queensland (Last and Stevens, 2009). However, the full extent of its distribution, particularly to the north, is uncertain (Last and Stevens, 2009).

4c. Population

Provide a summary of the information available for size and trend of the global population. Information about sizes and trends of subpopulations or trends in particular regions of the taxon's range can also be included in this section. If no quantitative information on population sizes or trends is available, please record whether the species is common, abundant, rare, etc. If there really is no information at all about the population, please note this.

There are no details of population size, structure or trends.

Current population trend (tick (✓) one box only)	Increasing	<input type="checkbox"/>
	Decreasing	<input type="checkbox"/>
	Stable	<input type="checkbox"/>
	Unknown	<input checked="" type="checkbox"/>

4d. Habitats and Ecology

Provide a summary of the habitats occupied by the taxon, highlighting essential habitats and ecological requirements. It is not necessary to know the details of behavioural traits, etc. unless these are relevant to the taxon's Red List status (e.g., it has a particular life cycle, growth pattern or behaviour that makes it vulnerable to specific threats).

This species occurs on the outer continental shelf and upper slope at depths of 135–320 m (Last and Stevens, 2009). There are no specific details available on habitat.

Maximum size is about 38 cm total length (TL), and size at maturity is about 32 cm TL for females and 30 cm TL for males (Last and Stevens, 2009). Like other skates, this species is oviparous, but there are no other details available regarding its ecology or life history.

Elevation	Upper limit:	<input type="text"/>	Depth	Upper limit:	<input type="text" value="135"/>
in m above sea level	Lower limit:	<input type="text"/>	in m below sea level	Lower limit:	<input type="text" value="320"/>

4e. Use and Trade

Provide a summary of any utilization of and/or trade in the taxon (at local, national and international levels). Please remember that the taxon may be utilized or be the focus of local, national or international trade, but if these activities are carried out sustainably they may not actually be a threat to the species; it is therefore useful to record whether this utilization/trade is a likely threat to the global population; this information helps to identify species that are important for human livelihoods, but which may be under threat from factors other than utilization or trade.

If unknown or there is no trade in the taxon, please state this.

This species is not known to be traded and is generally too small to be marketed.

4f. Threats

Provide a summary of the major threats affecting, or likely to affect, the taxon. Try to indicate whether these threats are historic threats that caused past population declines, or current threats affecting the population now, and whether they are likely to affect the population in future.

Please record as much detail about the threats as possible, including the main cause of the threat (the driver), the threat itself, the scale of the threat (e.g., is most of the global population affected, or is the threat affecting only small parts of the population), and the stress this threat places on the taxon (e.g., habitat degradation, loss of breeding sites, loss of prey base, direct mortality, etc.).

Demersal fishing pressure across this species' range is generally very low. The management area of the Australian Commonwealth managed Coral Sea Fishery mostly lies to the east of the distribution of *D. polyommata*, overlapping only marginally with the species' range. This is a relatively small-scale fishery with only two licenses in the Trawl and Trap Sector of the fishery (Wilson *et al.*, 2009). Other sectors of the fishery utilise gear unlikely to interact with skates. It is possible that this skate is a bycatch of trawling within this fishery, but while details are not known, the management area of the fishery is far greater than the range of this skate, with the majority of fishing effort outside of the species' occurrence.

The Queensland managed Deep Water Fin Fish Fishery also overlaps partially with the distribution of *D. polyommata*, operating east of the 200 m depth contour. But again, the majority of fishing effort is outside of the species' occurrence. Furthermore, this is a small-scale commercial fishery (four licenses) utilising multi-hook line fishing gear targeting mainly benthopelagic species (Holmes 2009). As such, interactions with demersal skates are likely to be minimal.

The very southern edge of the species' range also overlaps with the eastern king prawn sector (deepwater component) of the Queensland managed East Coast Trawl Fishery. This fishery operates to depths of 300–350 m, so *D. polyommata* is a potential bycatch, although the majority of effort in this fishery sector is further south (Courtney *et al.*, 2007; Courtney and Posser, 2009).

4g. Conservation Actions

Provide a summary of the conservation actions currently in place, and **realistic** actions needed to mitigate the major threats to the taxon (if any). This section should not be used to record a full "wish list" of conservation actions for the species; please try to restrict recommendations to those actions that could realistically be implemented and have a good chance of improving the status of the taxon.

No conservation actions are currently in place for this species. Research is required to better define its full distribution, estimate abundance and examine life history traits.

5. DATA FOR RED LIST CRITERIA

Record the available data for population sizes, trends, decline rates, ranges, etc. to compare against the IUCN Red List Criteria thresholds.

For full IUCN definitions of "population size", "subpopulation", "mature individuals", "generation length", "reduction", "continuing decline", "extreme fluctuation", "severely fragmented", "extent of occurrence", "area of occupancy", "location", and "quantitative analysis", please refer to the current version of the *Guidelines for Using the IUCN Red List Categories and Criteria*.

5a. Data for criterion A: rate of population reduction

<p>Generation length (please state the unit used).</p> <div style="border: 1px solid black; width: 100px; height: 30px; margin: 5px;"></div>	<p>Time period used for criterion A (tick (✓) one box only)</p> <p style="text-align: center;">10 years <input type="checkbox"/></p> <p style="text-align: center;">3 generations <input type="checkbox"/></p> <p>Time period <div style="border: 1px solid black; width: 80px; height: 20px; display: inline-block;"></div></p>	
<p>Criteria A1 and A2: % population size reduction over the last 10 yrs or 3 generations:</p> <div style="border: 1px solid black; width: 100px; height: 50px; margin: 5px;"></div>	<p>Data quality:</p> <p>Observed <input type="checkbox"/></p> <p>Estimated <input type="checkbox"/></p> <p>Inferred <input type="checkbox"/></p> <p>Suspected <input type="checkbox"/></p>	<p>Are the causes of this reduction understood? (tick (✓) one box only)</p> <p>Yes <input type="checkbox"/></p> <p>No <input type="checkbox"/></p> <p>Unknown <input type="checkbox"/></p>
<p>Have the causes of the reduction now ceased? (tick (✓) one box only)</p> <p>Yes <input type="checkbox"/></p> <p>No <input type="checkbox"/></p> <p>Unknown <input type="checkbox"/></p>	<p>Is the reduction reversible? i.e., is the population now showing signs of recovery? (tick (✓) one box only)</p> <p>Yes <input type="checkbox"/></p> <p>No <input type="checkbox"/></p> <p>Unknown <input type="checkbox"/></p>	<p>Past population reduction rate based on (select any combination):</p> <p>Direct observation <input type="checkbox"/></p> <p>Index of abundance <input type="checkbox"/></p> <p>Decline in area of occupancy, extent of occurrence, and/or habitat quality <input type="checkbox"/></p> <p>Actual or potential levels of exploitation <input type="checkbox"/></p> <p>Effects of introduced taxa, hybridization, pathogens, pollutants, competitors or parasites <input type="checkbox"/></p>
<p>Criterion A3: % population size reduction over the next 10 yrs or 3 generations (max. 100 years in future):</p> <div style="border: 1px solid black; width: 100px; height: 50px; margin: 5px;"></div>	<p>Data quality:</p> <p>Projected <input type="checkbox"/></p> <p>Suspected <input type="checkbox"/></p>	<p>Future population reduction rate based on (select any combination):</p> <p>Index of abundance <input type="checkbox"/></p> <p>Decline in area of occupancy, extent of occurrence, and/or habitat quality <input type="checkbox"/></p> <p>Actual or potential levels of exploitation <input type="checkbox"/></p> <p>Effects of introduced taxa, hybridization, pathogens, pollutants, competitors or parasites <input type="checkbox"/></p>
<p>Criterion A4: % population size reduction over the longer time period of 10 yrs or 3 generations, where some time falls in the past and some is projected in to the future (max. 100 yrs in future):</p> <div style="border: 1px solid black; width: 100px; height: 50px; margin: 5px;"></div>	<p>Data quality:</p> <p>Observed <input type="checkbox"/></p> <p>Estimated <input type="checkbox"/></p> <p>Inferred <input type="checkbox"/></p> <p>Projected <input type="checkbox"/></p> <p>Suspected <input type="checkbox"/></p>	<p>Population reduction rate based on (select any combination):</p> <p>Direct observation <input type="checkbox"/></p> <p>Index of abundance <input type="checkbox"/></p> <p>Decline in area of occupancy, extent of occurrence, and/or habitat quality <input type="checkbox"/></p> <p>Actual or potential levels of exploitation <input type="checkbox"/></p> <p>Effects of introduced taxa, hybridization, pathogens, pollutants, competitors or parasites <input type="checkbox"/></p>

5b. Data for criterion B: restricted range

Criterion B1: Extent of occurrence (EOO) in <input style="width: 80px;" type="text"/> km ² :		Criterion B2: Area of occupancy (AOO) in <input style="width: 80px;" type="text"/> km ² :	
Is the population severely fragmented? (tick (✓) one box only)	Yes <input style="width: 30px;" type="checkbox"/> No <input style="width: 30px;" type="checkbox"/> Unknown <input style="width: 30px;" type="checkbox"/>	If yes, justify this statement in the population text box (refer to habitat fragmentation AND the dispersal abilities of the taxon).	Number of locations: <input style="width: 50px;" type="text"/>
Extent of occurrence	Continuing decline	<input style="width: 20px;" type="text"/>	Observed <input style="width: 20px;" type="checkbox"/> Inferred <input style="width: 20px;" type="checkbox"/> Projected <input style="width: 20px;" type="checkbox"/>
	Extreme fluctuation	<input style="width: 20px;" type="text"/>	
Area of occupancy	Continuing decline	<input style="width: 20px;" type="text"/>	Observed <input style="width: 20px;" type="checkbox"/> Inferred <input style="width: 20px;" type="checkbox"/> Projected <input style="width: 20px;" type="checkbox"/>
	Extreme fluctuation	<input style="width: 20px;" type="text"/>	
Area, extent and/or quality of habitat	Continuing decline	<input style="width: 20px;" type="text"/>	Observed <input style="width: 20px;" type="checkbox"/> Inferred <input style="width: 20px;" type="checkbox"/> Projected <input style="width: 20px;" type="checkbox"/>
	Extreme fluctuation	<input style="width: 20px;" type="text"/>	
Number of locations or subpopulations	Continuing decline	<input style="width: 20px;" type="text"/>	Observed <input style="width: 20px;" type="checkbox"/> Inferred <input style="width: 20px;" type="checkbox"/> Projected <input style="width: 20px;" type="checkbox"/>
	Extreme fluctuation	<input style="width: 20px;" type="text"/>	
Number of mature individuals	Continuing decline	<input style="width: 20px;" type="text"/>	Observed <input style="width: 20px;" type="checkbox"/> Inferred <input style="width: 20px;" type="checkbox"/> Projected <input style="width: 20px;" type="checkbox"/>
	Extreme fluctuation	<input style="width: 20px;" type="text"/>	

5c. Data for criterion C: small population size and continuing decline

Population size		<input style="width: 100px; height: 20px;" type="text"/>							
Number of mature individuals in the global population:									
Is there continuing decline in the population? (tick one box only)	Yes	<input type="checkbox"/>	Rate of continuing decline known? (tick one box only)						
	No	<input type="checkbox"/>							
	Unknown	<input type="checkbox"/>							
		<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: center;">Yes</td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> <tr> <td style="text-align: center;">No</td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> <tr> <td style="text-align: center;">Unknown</td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> </table>		Yes	<input type="checkbox"/>	No	<input type="checkbox"/>	Unknown	<input type="checkbox"/>
Yes	<input type="checkbox"/>								
No	<input type="checkbox"/>								
Unknown	<input type="checkbox"/>								
Estimated continuing decline % within 3 years or 1 generation (whichever is the longer time period; max. 100 years in future):		<input style="width: 100px; height: 20px;" type="text"/>							
Estimated continuing decline % within 5 years or 2 generation (whichever is the longer time period; max. 100 years in future):		<input style="width: 100px; height: 20px;" type="text"/>							
Estimated continuing decline % within 10 years or 3 generation (whichever is the longer time period; max. 100 years in future):		<input style="width: 100px; height: 20px;" type="text"/>							
Number of mature individuals in largest subpopulation:	<input style="width: 100px; height: 20px;" type="text"/>	% of mature individuals in largest subpopulation	<input style="width: 100px; height: 20px;" type="text"/>						
Extreme fluctuations in number of mature individuals:	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">Yes</td> <td style="width: 50%; text-align: center;"><input type="checkbox"/></td> </tr> <tr> <td>No</td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> <tr> <td>Unknown</td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> </table>			Yes	<input type="checkbox"/>	No	<input type="checkbox"/>	Unknown	<input type="checkbox"/>
Yes	<input type="checkbox"/>								
No	<input type="checkbox"/>								
Unknown	<input type="checkbox"/>								

5d. Data for criterion D: small population size or restricted range

Population size		<input style="width: 100px; height: 20px;" type="text"/>													
Number of mature individuals in the global population:															
Area of occupancy (AOO) in km²:	<input style="width: 100px; height: 20px;" type="text"/>	Number of locations:	<input style="width: 100px; height: 20px;" type="text"/>												
		<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">Is there a plausible threat that could rapidly push the taxon towards extinction?</td> <td style="width: 50%;">Yes</td> </tr> <tr> <td></td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> <tr> <td></td> <td style="text-align: center;">No</td> </tr> <tr> <td></td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> <tr> <td></td> <td style="text-align: center;">Unknown</td> </tr> <tr> <td></td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> </table>		Is there a plausible threat that could rapidly push the taxon towards extinction?	Yes		<input type="checkbox"/>		No		<input type="checkbox"/>		Unknown		<input type="checkbox"/>
Is there a plausible threat that could rapidly push the taxon towards extinction?	Yes														
	<input type="checkbox"/>														
	No														
	<input type="checkbox"/>														
	Unknown														
	<input type="checkbox"/>														

5e. Data for criterion E: quantitative analysis

Has a quantitative analysis predicting probability of extinction been carried out? (e.g. Population Viability Analysis)	Yes <input type="checkbox"/>
	No <input type="checkbox"/>
	Unknown <input type="checkbox"/>
Probability (%) of extinction within the next 10 years or 3 generations (use the longer time period; max. 100 years in future)	<input type="text"/>
Probability (%) of extinction within the next 20 years or 5 generations (use the longer time period; max. 100 years in future)	<input type="text"/>
Probability (%) of extinction within the next 100 years	<input type="text"/>

6. RED LIST ASSESSMENT

Assess the taxon using the information and data recorded in section 4 and 5, and following the *IUCN Red List Categories and Criteria: version 3.1.* and current version of the *Guidelines for Using the IUCN Red List Categories and Criteria* for guidance on applying the IUCN criteria.

6a. Red List Category & Criteria

Tick (✓) one of the following Red List categories, For taxa qualifying for a threatened category (CR, EN or VU), record all criteria and subcriteria met. For the NT category, record all criteria and subcriteria nearly met:

<input type="checkbox"/>	Extinct (EX)	Date last seen in wild (day/month/year)	<input type="text"/>
<input type="checkbox"/>	Extinct in the Wild (EW)	Date last seen in wild (day/month/year)	<input type="text"/>
<input type="checkbox"/>	Critically Endangered (CR)	Criteria met for CR	<input type="text"/>
<input type="checkbox"/>	Endangered (EN)	Criteria met for EN	<input type="text"/>
<input type="checkbox"/>	Vulnerable (VU)	Criteria met for VU	<input type="text"/>
<input type="checkbox"/>	Near Threatened (NT)	Criteria nearly met for NT	<input type="text"/>
<input checked="" type="checkbox"/>	Least Concern (LC)		
<input type="checkbox"/>	Data Deficient (DD)		
<input type="checkbox"/>	Not Evaluated (NE)		

Is this taxon Possibly Extinct? (applies to CR taxa only)	Yes	<input type="text"/>
	No	<input type="text"/>
	Unknown	<input type="text"/>

6b. Rationale for the assessment

Provide a summary of the reasons why the taxon qualifies for the category and criteria recorded in section 6a. Include any population or range information used, inferences, assumptions, etc. For NT specify what criteria were nearly met and for DD state what little information is known. Please refer to the *IUCN Red List Categories and Criteria: version 3.1.* and the current version of the *Guidelines for Using the IUCN Red List Categories and Criteria* for guidance on definitions of terms and applying the IUCN criteria).

Dipturus polyommata is a poorly-known small skate (reaching 38 cm total length), endemic to northeastern Australia in the Western Central Pacific. Recent taxonomic revision has split the southern form (*Dipturus endeavouri* Last, 2008) from *D. polyommata*, and as such this species has a relatively restricted distribution on the outer continental shelf and upper slope in depths of 135–320 m. Essentially nothing is known of its ecology or life history. Despite this, its area of occurrence receives little demersal fishing effort, and with no significant threats apparent, an assessment of Least Concern is warranted. However, any future expansion of demersal trawling within its range may pose a risk given its limited geographic and bathymetric distribution.

Assessment Date:

10	08	2010

Assessors' Names:

Given Name(s)	Family Name	Email Address	Institution
Peter M.	Kyne	peter.kyne@cdu.edu.au	Charles Darwin University

6c. Changes in Red List status

Check the IUCN Red List web site (www.iucnredlist.org) to find out whether the taxon has previously been assessed.

Has this taxon been assessed for a previous IUCN Red List?

Yes **If yes, what was the previous assessment?** Data Deficient (assessment date 08 March 2003). DD assessment was for two species now considered separate: *Dipturus polyommata* and the recently described *Dipturus endeavouri*.

No

Unknown

If yes, has the taxon changed category since its last assessment?

Yes **If no, have the criteria changed?** Yes

No No

Reason for change in category:

<p>Genuine change</p> <p>Change since first assessment</p>	Recent change	<input type="checkbox"/>	<p>Non-genuine change</p>	New/better information available	<input checked="" type="checkbox"/>
		<input type="checkbox"/>		Taxonomic change	<input checked="" type="checkbox"/>
		<input type="checkbox"/>		Incorrect application of criteria previously	<input type="checkbox"/>
		<input type="checkbox"/>		Criteria thresholds changed since previous assessment	<input type="checkbox"/>

7. LITERATURE REFERENCES

Provide a list of all published and unpublished reference sources used for the information recorded above. Please provide full references, and try to avoid abbreviations (e.g., write *Conservation Biology* rather than *Cons. Biol.*).

Courtney, A. and Prosser, A. (2009). Research update on the eastern king prawn fishery. *The Queensland Fisherman* **October 2009**, 20–23.

Courtney, A.J., Haddy, J.A., Campbell, M.J., Roy, D.P., Tonks, M.L., Gaddes, S.W., Chilcott, K.E., O'Neill, M.F., Brown, I.W., McLennan, M., Jebreen, J.E., van der Geest, C., Rose, C., Kistle, S., Turnbull, C.T., Kyne, P.M., Bennett, M.B. and Taylor, J. 2007. *Bycatch weight, composition and preliminary estimates of the impact of bycatch reduction devices in Queensland's trawl fishery*. FRDC Project 2000/170 Final Report.

Holmes, B. (2009). Annual Status Report 2009. Deep Water Fin Fish Fishery. The State of Queensland, Department of Employment, Economic Development and Innovation, Brisbane.

Last, P.R. (2008) New short-snout members of the skate genus *Dipturus* (Rajoidei: Rajidae) from Australian seas. Pp. 53–99. In: Last, P.R., White, W.T., Pogonoski, J.J. and Gledhill, D.C. (Eds) Descriptions of new Australian skates (Batoidea: Rajoidei). *CSIRO Marine and Atmospheric Research Paper* No. 021.

Last, P.R. and Stevens, J.D. (2009) *Sharks and Rays of Australia*. Second Edition. CSIRO Publishing, Collingwood.

Wilson, D., Curtotti, R., Begg, G. and Phillips, K. (eds.) (2009). *Fishery status reports 2008: status of fish stocks and fisheries managed by the Australian Government*. Bureau of Rural Sciences and Australian Bureau of Agricultural and Resource Economics, Canberra.

Threat Type	Timing:	Scope:	Severity:	STRESSES	
				1 Ecosystem stresses	2 Species stresses
	1 = Past, unlikely to return 2 = Past, likely to return 3 = Ongoing 4 = Future 5 = Unknown	1 = Whole (>90%) 2 = Majority (50-90%) 3 = Minority (50%) 4 = Unknown	1 = Very rapid declines 2 = Rapid declines 3 = Slow, significant declines 4 = Causing/could cause fluctuations 5 = Negligible declines 6 = No decline 7 = Unknown	1.1 Ecosystem conversion 1.2 Ecosystem degradation 1.3 Indirect ecosystem effects	2.1 Species mortality 2.2 Species disturbance 2.3 Indirect species effects 2.3.1 Hybridisation 2.3.2 Competition 2.3.3 Loss of mutualism 2.3.4 Loss of pollinator 2.3.5 Inbreeding 2.3.6 Skewed sex ratios 2.3.7 Reduced reproductive success 2.3.8 Other
5.2 Gathering terrestrial plants					
5.2.1 Intentional use (species is the target)					
5.2.2 Unintentional effects (species is not the target)					
5.2.3 Persecution/control					
5.2.4 Motivation unknown/unrecorded					
5.3 Logging & wood harvesting					
5.3.1 Intentional use (subsistence/small scale)					
5.3.2 Intentional use (large scale)					
5.3.3 Unintentional effects (subsistence/small scale)					
5.3.4 Unintentional effects (large scale)					
5.3.5 Motivation unknown/unrecorded					
5.4 Fishing & harvesting aquatic resources					
5.4.1 Intentional use (subsistence/small scale)					
5.4.2 Intentional use (large scale)					
5.4.3 Unintentional effects (subsistence/small scale)					
5.4.4 Unintentional effects (large scale)					
5.4.5 Persecution/control					
5.4.6 Motivation unknown/unrecorded					
6 human intrusions & disturbance					
6.1 Recreational activities					
6.2 War, civil unrest & military exercises					
6.3 Work & other activities					
7 Natural system modifications					
7.1 Fire & fire suppression					
7.1.1 Increase in fire frequency/intensity					
7.1.2 Suppression in fire frequency/intensity					
7.1.3 Trend unknown/unrecorded					
7.2 Dams & water management/use					
7.2.1 Abstraction of surface water (domestic use)					
7.2.2 Abstraction of surface water (commercial use)					
7.2.3 Abstraction of surface water (agricultural use)					
7.2.4 Abstraction of surface water (unknown use)					
7.2.5 Abstraction of ground water (domestic use)					
7.2.6 Abstraction of ground water (commercial use)					
7.2.7 Abstraction of ground water (agricultural use)					
7.2.8 Abstraction of ground water (unknown use)					
7.2.9 Small dams					
7.2.10 Large dams					
7.2.11 Dams (size unknown)					
7.3 Other ecosystem modifications					
8 Invasive & other problematic species & genes					
8.1 Invasive non-native/alien species					
8.1.1 Unspecified species					
8.1.2 Named species					
8.2 Problematic native species					
8.3 Introduced genetic material					
9 Pollution					
9.1 Domestic & urban waste water					
9.1.1 Sewage					
9.1.2 Run-off					

Threat Type	Timing:	Scope:	Severity:	STRESSES	
				1 Ecosystem stresses	2 Species stresses
9.1.3 Type unknown/unrecorded					
9.2 Industrial & military effluents					
9.2.1 Oil spills					
9.2.2 Seepage from mining					
9.2.3 Type unknown/unrecorded					
9.3 Agricultural & forestry effluents					
9.3.1 Nutrient loads					
9.3.2 Soil erosion, sedimentation					
9.3.3 Herbicides & pesticides					
9.3.4 type unknown/unrecorded					
9.4 garbage & solid waste					
9.5 Air-borne pollutants					
9.5.1 Acid rain					
9.5.2 Smog					
9.5.3 Ozone					
9.5.4 Type unknown/unrecorded					
9.6 Excess energy					
9.6.1 Light pollution					
9.6.2 Thermal pollution					
9.6.3 Noise pollution					
9.6.4 Type unknown/unrecorded					
10 Geological events					
10.1 Volcanoes					
10.2 Earthquakes/tsunamis					
10.3 Avalanches/landslides					
11 Climate change & severe weather					
11.1 Habitat shifting & alteration					
11.2 Droughts					
11.3 Temperature extremes					
11.4 Storms & flooding					
11.5 Other impacts					
12 Other options					
12.1 Other threat					

Habitats Classification Scheme

Taxon name: *Dipturus polyommata*

Indicate suitability and major importance of each habitat with a cross (X)

Habitat Type	Suitability (select one option only)			Major Importance	
	Suitable	Marginal	Possible	Yes	No
1. Forest					
1.1. Boreal					
1.2. Subarctic					
1.3. Subantarctic					
1.4. Temperate					
1.5. Subtropical/Tropical Dry					
1.6. Subtropical/Tropical Moist Lowland					
1.7. Subtropical/Tropical Mangrove Vegetation Above High Tide Level					
1.8. Subtropical/Tropical Swamp					
1.9. Subtropical/Tropical Moist Montane					
2. Savanna					
2.1. Dry					
2.2. Moist					
3. Shrubland					
3.1. Subarctic					
3.2. Subantarctic					
3.3. Boreal					
3.4. Temperate					
3.5. Subtropical/Tropical Dry					
3.6. Subtropical/Tropical Moist					
3.7. Subtropical/Tropical High Altitude					
3.8. Mediterranean-type Shrubby Vegetation					
4. Grassland					
4.1. Tundra					
4.2. Subarctic					
4.3. Subantarctic					
4.4. Temperate					
4.5. Subtropical/Tropical Dry Lowland					
4.6. Subtropical/Tropical Seasonally Wet/Flooded					
4.7. Subtropical/Tropical High Altitude					
5. Wetlands (inland)					
5.1. Permanent Rivers/Streams/Creeks [includes waterfalls]					
5.2. Seasonal/Intermittent/Irregular Rivers/Streams/Creeks					
5.3. Shrub Dominated Wetlands					
5.4. Bogs, Marshes, Swamps, Fens, Peatlands					
5.5. Permanent Freshwater Lakes [over 8 ha]					
5.6. Seasonal/Intermittent Freshwater Lakes [over 8 ha]					
5.7. Permanent Freshwater Marshes/Pools [under 8 ha]					
5.8. Seasonal/Intermittent Freshwater Marshes/Pools [under 8 ha]					
5.9. Freshwater Springs and Oases					
5.10. Tundra Wetlands [includes pools and temporary waters from snowmelt]					
5.11. Alpine Wetlands [includes temporary waters from snowmelt]					
5.12. Geothermal Wetlands					
5.13. Permanent Inland Deltas					
5.14. Permanent Saline, Brackish or Alkaline Lakes					
5.15. Seasonal/Intermittent Saline, Brackish or Alkaline Lakes and Flats					
5.16. Permanent Saline, Brackish or Alkaline Marshes/Pools					
5.17. Seasonal/Intermittent Saline, Brackish or Alkaline Marshes/Pools					
5.18. Karst and Other Subterranean Hydrological Systems [inland]					
6. Rocky Areas [e.g. inland cliffs, mountain peaks]					
7. Caves and Subterranean Habitats (non-aquatic)					
7.1. Caves					
7.2. Other Subterranean Habitats					
8. Desert					
8.1. Hot					
8.2. Temperate					
8.3. Cold					
9. Marine Neritic (Submergent Nearshore Continental Shelf or Oceanic island)					
9.1. Pelagic					
9.2. Subtidal Rock and Rocky Reefs					
9.3. Subtidal Loose Rock/Pebble/Gravel					
9.4. Subtidal Sandy	X			X	
9.5. Subtidal Sandy-Mud	X			X	
9.6. Subtidal Muddy					
9.7. Macroalgal Kelp					
9.8. Coral Reef					
9.8.1. Outer reef channel					
9.8.2. Back Slope					
9.8.3. Foreslope [Outer Reef Slope]					
9.8.4. Lagoon					
9.8.5. Inter-reef Soft Substrate					
9.8.6. Inter-reef Rubble Substrate					
9.9. Seagrass [submerged]					
9.10. Estuaries					
10. Marine Oceanic					
10.1. Epipelagic [0-200 m]					
10.2. Mesopelagic [200-1,000 m]					
10.3. Bathypelagic [1,000-4,000 m]					
10.4. Abyssopelagic [4,000-6,000 m]					

Habitat Type	Suitability (select one option only)			Major Importance	
	Suitable	Marginal	Possible	Yes	No
11. Marine Deep Benthic					
11.1. Continental Shelf/Bathyl Zone [200-4,000 m]	X			X	
11.1.1. Hard Substrate					
11.1.2. Soft Substrate					
11.2. Abyssal Plain [4,000-6,000 m]					
11.3. Abyssal/Mountain/Hills [4,000-6,000 m]					
11.4. Hadal/Dep Sea Trench [>6,000 m]					
11.5. Seamount					
11.6. Deep Sea Vents [Rifts/Seeps]					
12. Marine Intertidal					
12.1. Rocky Shoreline					
12.2. Sandy Shoreline and/or Beaches, Sand Bars, Spits, etc.					
12.3. Shingle and/or Pebble Shoreline and/or Beaches					
12.4. Mud Flats/Salt Flats					
12.5. Salt Marshes [Emergent Grasses]					
12.6. Tidepools					
12.7. Mangrove Submerged Roots					
13. Marine Coastal/Supratidal					
13.1. Sea Cliffs and Rocky Offshore Islands					
13.2. Coastal Caves/Karst					
13.3. Coastal Sand Dunes					
13.4. Coastal Brackish/Saline Lagoons/Marine Lakes					
13.5. Coastal Freshwater Lakes					
14. Artificial - Terrestrial					
14.1. Arable Land					
14.2. Pastureland					
14.3. Plantations					
14.4. Rural Gardens					
14.5. Urban Areas					
14.6. Subtropical/Tropical Heavily Degraded Former Forest					
15. Artificial/Aquatic & Marine					
15.1. Water Storage Areas [over 8 ha]					
15.2. Ponds [below 8 ha]					
15.3. Aquaculture Ponds					
15.4. Salt Exploitation Sites					
15.5. Excavations [open]					
15.6. Wastewater Treatment Areas					
15.7. Irrigated Land [includes irrigation channels]					
15.8. Seasonally Flooded Agricultural Land					
15.9. Canals and Drainage Channels, Ditches					
15.10. Karst and Other Subterranean Hydrological Systems [human-made]					
15.11. Marine Anthropogenic Structures					
15.12. Mariculture Cages					
15.13. Mari/Brackishculture Ponds					
16. Introduced Vegetation					
17. Other					
18. Unknown					

Research & Conservation Actions Classification Scheme

Taxon name: *Dipturus polyommata*

Indicate applicable actions needed with a cross (X)

Research Actions needed

1 Research	
1.1 Taxonomy	
1.2 Population size, distribution & trends	X
1.3 Life history	X
1.4 Harvest, use & livelihoods	
1.5 Threats	
1.6 Actions	
2 Conservation Planning	
2.1 Species Action/Recovery Plan	
2.2 Area-based Management Plan	
2.3 Harvest & Trade Management Plan	
3 Monitoring	
3.1 Population trends	X
3.2 Harvest trends	
3.3 Trade trends	
3.4 Habitat trends	
4 Other	

Conservation Actions needed

1 Land/water protection	
1.1 site/area protection	
1.2 Resource & habitat protection	
2 Land/water management	
2.1 Site/area management	
2.2 Invasive/problematic species control	
2.3 Habitat & natural process restoration	
3 Species management	
3.1 Species management	
3.1.1 Harvest management	
3.1.2 Trade management	
3.1.3 Limiting population growth	
3.2 Species recovery	
3.3 Species re-introduction	
3.3.1 Reintroduction	
3.3.2 Benign introduction	
3.4 Ex-situ conservation	
3.4.1 Captive breeding/artificial propagation	
3.4.2 Genome resource bank	
4 Education & awareness	
4.1 Formal education	
4.2 Training	
4.3 Awareness & communications	
5 Law & policy	
5.1 Legislation	
5.1.1 International level	
5.1.2 National level	
5.1.3 sub-national level	
5.1.4 Scale unspecified	
5.2 Policies and regulations	
5.3 Private sector standards and codes	
5.4 Compliance and enforcement	
5.4.1 International level	
5.4.2 National level	
5.4.3 Sub-national level	
5.4.4 Scale unspecified	
6 Livelihood, economic & other incentives	
6.1 Linked enterprises & livelihood alternatives	
6.2 Substitution	
6.3 Market forces	
6.4 Conservation payments	
6.5 Non-monetary values	

RED LIST ASSESSMENT

Questionnaire

(please complete one questionnaire per taxon, extra sheets may be used)

1. SCIENTIFIC AND COMMON NAMES.

The IUCN Red List generally focuses at the species level. Subspecies, plant varieties, and subpopulations (as defined in the IUCN Red List Categories and Criteria, Version 3.1) may also be assessed and will be considered for inclusion in the IUCN Red List only if the species-level assessment is also available. Hybrids will not be considered for inclusion in the IUCN Red List. For currently undescribed species, please refer to the rules outlined in section 2.1 of current version of the *Guidelines for Using the IUCN Red List Categories and Criteria*.

1a. Scientific name (including authority details):

Amblyraja frerichsi Krefft, 1968

1b. Synonym/s (if there has been a taxonomic change in the last 5 years or if widely used):

None

1c. English Common Name (if known):

Thickbody Skate

1d. Other Common Names (if known and state language):

None

2. HIGHER TAXONOMY

Note that the IUCN Red List does not record sub-families, sub-orders, etc. Only the taxonomic levels requested below should be provided. A taxonomic notes field is also provided to allow further details about taxonomy to be recorded – see section 4a.

2a. Kingdom

Animalia

2b. Phylum

Chordata

2c. Class

Chondrichthyes

2c. Order

Rajiformes

2b. Family

Rajidae

3. COUNTRY, SUBCOUNTRY AND MARINE AREA OCCURRENCES

Provide a list of the **countries** and **subcountry units** (e.g., states, provinces, etc.) in which this taxon occurs. For marine taxa, also record names of FAO fisheries areas and (optional) Large Marine Ecosystems (LME).

Presence: For each country, subcountry or marine area, please record whether this taxon is extant, extinct, possibly extinct, or presence uncertain.

Origin: For each country, subcountry or marine area, please record whether this taxon is native, reintroduced, introduced, vagrant, or origin uncertain.

Note: A distribution map showing the extent of occurrence **MUST** also be attached.

See the current version of the *Guidelines for Using the IUCN Red List Categories and Criteria* for the IUCN definition of "extent of occurrence".

3a. Countries			3b. Subcountry units (if known)		
Country name	Presence	Origin	Subcountry unit name	Presence	Origin
Argentina	Extant	Native			
Chile	Extant	Native			
Uruguay	Extant	Native			

3c. Marine Areas		
FAO area name or LME	Presence	Origin
Southwest Atlantic (FAO Fisheries Area 41)	Extant	Native
Southeast Pacific (FAO Fisheries Area 87)	Extant	Native

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4. TEXT DOCUMENTATION

Provide a short narrative for each of the topics below to support the information used for the Red List assessment in section 5 and to complement and provide more detail for the Classification Scheme codes for habitats, threats, stresses and conservation actions recorded in Annex 1 (use additional sheets if required).

Please avoid using one-word answers in this section; the Red List assessment should be treated in the same way as a scientific paper, where the information is presented as clearly as possible for the reader, and all references used as cited within the text.

4a. Taxonomic Notes

Record any recent taxonomic changes or current taxonomic doubts or debates about the validity or identity of the taxon.

A species of *Amblyraja* has been taken around South Georgia Island which appears not to be *A. georgiana*, but may be either *A. frerichsi* or *A. robertsi* (Mike Endicott via M. Stehmann pers. comm.).

4b. Distribution

Provide a summary of the current information available about the taxon's geographic range. Include a mention of important sites for this taxon.

There appears to be only limited records of this species in the Atlantic, but it may be more widespread there than presently known. If the specimens referred to above turn out to be *A. frerichsi* this would extend its range in the Atlantic. The holotype and paratype locality is from off the Rio de la Plata, Argentina/Uruguay (35°04' to 36°00' S, 52°06' to 58°00' W) at depths of 800 to 1,000 m (Krefft 1968). Further specimens were recorded off Argentina and Uruguay in the 1978 'Walther Herwig' expedition at 36°18' S, 53°19' W (720 m) and 36°32.9' S, 53°37.4' W (1,040 m) (M. Stehmann, pers. comm.). A number of specimens were observed in 2002 and 2003 taken in bottom fish traps targeting *Dissostichus eleginoides* off the Rio de la Plata (35°02' to 37°23' S) at depths of 1,464 to 2,609 m (P. Meneses, pers. comm.).

4c. Population

Provide a summary of the information available for size and trend of the global population. Information about sizes and trends of subpopulations or trends in particular regions of the taxon's range can also be included in this section. If no quantitative information on population sizes or trends is available, please record whether the species is common, abundant, rare, etc. If there really is no information at all about the population, please note this.

Unknown.

Current population trend
(tick (✓) one box only)

Increasing
Decreasing
Stable
Unknown

<input type="checkbox"/>
<input type="checkbox"/>
<input type="checkbox"/>
<input checked="" type="checkbox"/>

4d. Habitats and Ecology

Provide a summary of the habitats occupied by the taxon, highlighting essential habitats and ecological requirements. It is not necessary to know the details of behavioural traits, etc. unless these are relevant to the taxon's Red List status (e.g., it has a particular life cycle, growth pattern or behaviour that makes it vulnerable to specific threats).

Amblyraja freerichsii is bathydemersal in depths of 800 to 2,500 m off Chile. In the Atlantic, recorded off the Rio de la Plata (Uruguay/Argentina) at depths of 720 to 2,609 m (Krefft 1968, P. Meneses, pers. comm., M. Stehmann, pers. comm.). Mature males have been observed at 105 to 120 cm total length (TL) and mature females at 70.6 to 100 cm TL off Chile. A mature male has been observed off Rio de la Plata at 96 cm TL (P. Meneses, pers. comm.). Nothing known of its biology.

Elevation
in m above sea level

Upper limit:
Lower limit:

<input type="text"/>
<input type="text"/>

Depth
in m below sea level

Upper limit:
Lower limit:

720 m
2,609 m

4e. Use and Trade

Provide a summary of any utilization of and/or trade in the taxon (at local, national and international levels). Please remember that the taxon may be utilized or be the focus of local, national or international trade, but if these activities are carried out sustainably they may not actually be a threat to the species; it is therefore useful to record whether this utilization/trade is a likely threat to the global population; this information helps to identify species that are important for human livelihoods, but which may be under threat from factors other than utilization or trade.

If unknown or there is no trade in the taxon, please state this.

No information available.

4f. Threats

Provide a summary of the major threats affecting, or likely to affect, the taxon. Try to indicate whether these threats are historic threats that caused past population declines, or current threats affecting the population now, and whether they are likely to affect the population in future.

Please record as much detail about the threats as possible, including the main cause of the threat (the driver), the threat itself, the scale of the threat (e.g., is most of the global population affected, or is the threat affecting only small parts of the population), and the stress this threat places on the taxon (e.g., habitat degradation, loss of breeding sites, loss of prey base, direct mortality, etc.).

Is taken as bycatch of longline artisanal fisheries for Patagonian Toothfish (*Dissostichus eleginoides*) off Chile. Taken in bottom fish traps for toothfish off Uruguay/Argentina using *Merluccius* spp., *Illex* spp. and *Scomber japonicus* as bait (P. Meneses, pers. comm.). It is captured in low numbers by bottom trawl nets targeting Argentine Hake (*Merluccius hubbsi*) off Uruguay (A. Domingo, pers. comm).

4g. Conservation Actions

Provide a summary of the conservation actions currently in place, and **realistic** actions needed to mitigate the major threats to the taxon (if any). This section should not be used to record a full “wish list” of conservation actions for the species; please try to restrict recommendations to those actions that could realistically be implemented and have a good chance of improving the status of the taxon.

Given the vulnerability of large skates to overfishing, bycatch levels need monitoring and research should focus on distribution and ecology.

5. DATA FOR RED LIST CRITERIA

Record the available data for population sizes, trends, decline rates, ranges, etc. to compare against the IUCN Red List Criteria thresholds.

For full IUCN definitions of “population size”, “subpopulation”, “mature individuals”, “generation length”, “reduction”, “continuing decline”, “extreme fluctuation”, “severely fragmented”, “extent of occurrence”, “area of occupancy”, “location”, and “quantitative analysis”, please refer to the current version of the *Guidelines for Using the IUCN Red List Categories and Criteria*.

5a. Data for criterion A: rate of population reduction

Generation length (please state the unit used).		Time period used for criterion A (tick (✓) one box only)	10 years <input type="checkbox"/> 3 generations <input type="checkbox"/>	Time period	
Criteria A1 and A2: % population size reduction over the last 10 yrs or 3 generations:		Data quality:	Observed <input type="checkbox"/> Estimated <input type="checkbox"/> Inferred <input type="checkbox"/> Suspected <input type="checkbox"/>		
Are the causes of this reduction understood? (tick (✓) one box only)	Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/>	Have the causes of the reduction now ceased? (tick (✓) one box only)	Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/>	Is the reduction reversible? i.e., is the population now showing signs of recovery? (tick (✓) one box only)	Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/>
Past population reduction rate based on (select any combination):	Direct observation Index of abundance Decline in area of occupancy, extent of occurrence, and/or habitat quality Actual or potential levels of exploitation Effects of introduced taxa, hybridization, pathogens, pollutants, competitors or parasites		Data quality:	Projected <input type="checkbox"/> Suspected <input type="checkbox"/>	
Criterion A3: % population size reduction over the next 10 yrs or 3 generations (max. 100 years in future):		Data quality:	Projected <input type="checkbox"/> Suspected <input type="checkbox"/>		
Future population reduction rate based on (select any combination):	Index of abundance Decline in area of occupancy, extent of occurrence, and/or habitat quality Actual or potential levels of exploitation Effects of introduced taxa, hybridization, pathogens, pollutants, competitors or parasites		Data quality:	Observed <input type="checkbox"/> Estimated <input type="checkbox"/> Inferred <input type="checkbox"/> Projected <input type="checkbox"/> Suspected <input type="checkbox"/>	
Criterion A4: % population size reduction over the longer time period of 10 yrs or 3 generations, where some time falls in the past and some is projected in to the future (max. 100 yrs in future):		Data quality:	Observed <input type="checkbox"/> Estimated <input type="checkbox"/> Inferred <input type="checkbox"/> Projected <input type="checkbox"/> Suspected <input type="checkbox"/>		
Population reduction rate based on (select any combination):	Direct observation Index of abundance Decline in area of occupancy, extent of occurrence, and/or habitat quality Actual or potential levels of exploitation Effects of introduced taxa, hybridization, pathogens, pollutants, competitors or parasites		Data quality:	Observed <input type="checkbox"/> Estimated <input type="checkbox"/> Inferred <input type="checkbox"/> Projected <input type="checkbox"/> Suspected <input type="checkbox"/>	

5b. Data for criterion B: restricted range

Criterion B1: Extent of occurrence (EOO) in km ² : <input style="width: 100px;" type="text"/>	Criterion B2: Area of occupancy (AOO) in km ² : <input style="width: 100px;" type="text"/>		
Is the population severely fragmented? (tick (✓) one box only)	Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/>	If yes, justify this statement in the population text box (refer to habitat fragmentation AND the dispersal abilities of the taxon).	Number of locations: <input style="width: 50px;" type="text"/>
Extent of occurrence	Continuing decline <input style="width: 20px;" type="text"/> Extreme fluctuation <input style="width: 20px;" type="text"/>	Observed <input style="width: 20px;" type="text"/> Inferred <input style="width: 20px;" type="text"/> Projected <input style="width: 20px;" type="text"/>	
Area of occupancy	Continuing decline <input style="width: 20px;" type="text"/> Extreme fluctuation <input style="width: 20px;" type="text"/>	Observed <input style="width: 20px;" type="text"/> Inferred <input style="width: 20px;" type="text"/> Projected <input style="width: 20px;" type="text"/>	
Area, extent and/or quality of habitat	Continuing decline <input style="width: 20px;" type="text"/>	Observed <input style="width: 20px;" type="text"/> Inferred <input style="width: 20px;" type="text"/> Projected <input style="width: 20px;" type="text"/>	
Number of locations or subpopulations	Continuing decline <input style="width: 20px;" type="text"/> Extreme fluctuation <input style="width: 20px;" type="text"/>	Observed <input style="width: 20px;" type="text"/> Inferred <input style="width: 20px;" type="text"/> Projected <input style="width: 20px;" type="text"/>	
Number of mature individuals	Continuing decline <input style="width: 20px;" type="text"/> Extreme fluctuation <input style="width: 20px;" type="text"/>	Observed <input style="width: 20px;" type="text"/> Inferred <input style="width: 20px;" type="text"/> Projected <input style="width: 20px;" type="text"/>	

5c. Data for criterion C: small population size and continuing decline

<p>Population size Number of mature individuals in the global population:</p>	<input style="width: 100px; height: 30px;" type="text"/>								
<p>Is there continuing decline in the population? (tick one box only)</p> <p>Yes <input style="width: 30px; height: 20px;" type="checkbox"/> No <input style="width: 30px; height: 20px;" type="checkbox"/> Unknown <input style="width: 30px; height: 20px;" type="checkbox"/></p>	<p>Rate of continuing decline known? (tick one box only)</p> <p>Yes <input style="width: 30px; height: 20px;" type="checkbox"/> No <input style="width: 30px; height: 20px;" type="checkbox"/> Unknown <input style="width: 30px; height: 20px;" type="checkbox"/></p>								
<p>Estimated continuing decline % within 3 years or 1 generation (whichever is the longer time period; max. 100 years in future):</p>	<input style="width: 100%; height: 30px;" type="text"/>								
<p>Estimated continuing decline % within 5 years or 2 generation (whichever is the longer time period; max. 100 years in future):</p>	<input style="width: 100%; height: 30px;" type="text"/>								
<p>Estimated continuing decline % within 10 years or 3 generation (whichever is the longer time period; max. 100 years in future):</p>	<input style="width: 100%; height: 30px;" type="text"/>								
<p>Number of mature individuals in largest subpopulation:</p>	<input style="width: 100px; height: 30px;" type="text"/>	<p>% of mature individuals in largest subpopulation</p>	<input style="width: 60px; height: 30px;" type="text"/>						
<p>Extreme fluctuations in number of mature individuals:</p>	<table border="1" style="margin: auto;"> <tr> <td style="width: 50px;">Yes</td> <td style="width: 50px;"><input style="width: 20px; height: 20px;" type="checkbox"/></td> </tr> <tr> <td>No</td> <td><input style="width: 20px; height: 20px;" type="checkbox"/></td> </tr> <tr> <td>Unknown</td> <td><input style="width: 20px; height: 20px;" type="checkbox"/></td> </tr> </table>			Yes	<input style="width: 20px; height: 20px;" type="checkbox"/>	No	<input style="width: 20px; height: 20px;" type="checkbox"/>	Unknown	<input style="width: 20px; height: 20px;" type="checkbox"/>
Yes	<input style="width: 20px; height: 20px;" type="checkbox"/>								
No	<input style="width: 20px; height: 20px;" type="checkbox"/>								
Unknown	<input style="width: 20px; height: 20px;" type="checkbox"/>								

5d. Data for criterion D: small population size or restricted range

<p>Population size Number of mature individuals in the global population:</p>	<input style="width: 100px; height: 30px;" type="text"/>			
<p>Area of occupancy (AOO) in km²:</p>	<input style="width: 60px; height: 30px;" type="text"/>	<p>Number of locations:</p>	<input style="width: 60px; height: 30px;" type="text"/>	<p>Is there a plausible threat that could rapidly push the taxon towards extinction?</p> <p>Yes <input style="width: 30px; height: 20px;" type="checkbox"/> No <input style="width: 30px; height: 20px;" type="checkbox"/> Unknown <input style="width: 30px; height: 20px;" type="checkbox"/></p>

5e. Data for criterion E: quantitative analysis

Has a quantitative analysis predicting probability of extinction been carried out?
(e.g. Population Viability Analysis)

Yes	<input type="checkbox"/>
No	<input type="checkbox"/>
Unknown	<input type="checkbox"/>

Probability (%) of extinction within the next 10 years or 3 generations (use the longer time period; max. 100 years in future)

Probability (%) of extinction within the next 20 years or 5 generations (use the longer time period; max. 100 years in future)

Probability (%) of extinction within the next 100 years

6. RED LIST ASSESSMENT

Assess the taxon using the information and data recorded in section 4 and 5, and following the *IUCN Red List Categories and Criteria: version 3.1.* and current version of the *Guidelines for Using the IUCN Red List Categories and Criteria* for guidance on applying the IUCN criteria.

6a. Red List Category & Criteria

Tick (✓) one of the following Red List categories, For taxa qualifying for a threatened category (CR, EN or VU), record all criteria and subcriteria met. For the NT category, record all criteria and subcriteria nearly met:

<input type="checkbox"/>	Extinct (EX)	Date last seen in wild (day/month/year)	<input type="text"/>
<input type="checkbox"/>	Extinct in the Wild (EW)	Date last seen in wild (day/month/year)	<input type="text"/>
<input type="checkbox"/>	Critically Endangered (CR)	Criteria met for CR	<input type="text"/>
<input type="checkbox"/>	Endangered (EN)	Criteria met for EN	<input type="text"/>
<input type="checkbox"/>	Vulnerable (VU)	Criteria met for VU	<input type="text"/>
<input type="checkbox"/>	Near Threatened (NT)	Criteria nearly met for NT	<input type="text"/>
<input type="checkbox"/>	Least Concern (LC)		
<input checked="" type="checkbox"/>	Data Deficient (DD)		
<input type="checkbox"/>	Not Evaluated (NE)		

Is this taxon Possibly Extinct? (applies to CR taxa only)	Yes	<input type="text"/>
	No	<input type="text"/>
	Unknown	<input type="text"/>

6b. Rationale for the assessment

Provide a summary of the reasons why the taxon qualifies for the category and criteria recorded in section 6a. Include any population or range information used, inferences, assumptions, etc. For NT specify what criteria were nearly met and for DD state what little information is known. Please refer to the *IUCN Red List Categories and Criteria: version 3.1.* and the current version of the *Guidelines for Using the IUCN Red List Categories and Criteria* for guidance on definitions of terms and applying the IUCN criteria).

A large bathydemersal skate recorded off Uruguay, Argentina and Chile. Off the Rio de la Plata (Uruguay/Argentina) recorded from depths of 720 to 2,609 m. Off Chile reported from depths of 800 to 2,500 m. Maximum size at least 120 cm total length (TL) (male). Nothing known of its biology. Is taken as bycatch of longline artisanal fisheries for Patagonian toothfish *Dissostichus eleginoides* in the Pacific, and in the Atlantic, in bottom fish trap fisheries for the same species, as well as in trawls for Argentine hake *Merluccius hubbsi*. Species-specific catch data are not available. Like many deepwater skates, there is little information available to undertake an accurate assessment of its conservation status. Given the vulnerability of large skates to overfishing, bycatch levels need monitoring and research needs include information on distribution and ecology.

Assessment Date:

DD	MM	YYYY
30	04	2004

Assessors' Names:

Given Name(s)	Family Name	Email Address	Institution
Julio	Lamilla		
Peter M.	Kyne		

6c. Changes in Red List status

Check the IUCN Red List web site (www.iucnredlist.org) to find out whether the taxon has previously been assessed.

Has this taxon been assessed for a previous IUCN Red List?

Yes

No

Unknown

If yes, what was the previous assessment?

If yes, has the taxon changed category since its last assessment?

Yes

No

If no, have the criteria changed?

Yes

No

Reason for change in category:

Genuine change

Recent change

Change since first assessment

Non-genuine change

New/better information available

Taxonomic change

Incorrect application of criteria previously

Criteria thresholds changed since previous assessment

7. LITERATURE REFERENCES

Provide a list of all published and unpublished reference sources used for the information recorded above. Please provide full references, and try to avoid abbreviations (e.g., write *Conservation Biology* rather than *Cons. Biol.*).

Krefft, G. 1968. Neue und erstmalig nachgewiesene Knorpelfische aus dem Archibenthal des Südwestantlantiks, einschliesslich einer Diskussion einiger *Etmopterus*. *Arten südlicher Meere. Arch. Fisch.* 19(1):1-42.

Lamilla, J. and Sáez, S. 2003. Clave taxonómica para el reconocimiento de especies de rayas chilenas (Chondrichthyes, Batoidei). *Invest. Mar., Valparaíso* 31(2):3-16.

Lamilla, J., Saéz, S., Sepúlveda, C., Acuña, E. and Vargas, M. (in prep.) A Morphological and skeletal description of *Amblyraja freerichsi* Krefft, 1968: a bathyal species present in the Southeastern Pacific (Rajiformes, Rajidae).