

IUCN Shark Specialist Group Red List assessments, 2000-2004
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Table compiled by Peter Kyne, Rachel Cavanagh and Sarah Fowler (IUCN Shark Specialist Group), and Caroline Pollock (IUCN Red List Programme). Further documentation and details can be found at www.redlist.org, in Cavanagh *et al.* (2003) and in Fowler *et al.* (In press). Red List assessments will be updated as new information is obtained. Please contact us if you have additional information on any of the species listed or wish to assess any species not yet listed below. To make suggestions, corrections and updates, or for any queries specific to chondrichthyans, contact Rachel Cavanagh rachel.cavanagh@ssc-uk.org For general Red List enquiries and information, go to www.redlist.org or contact Caroline Pollock caroline.pollock@ssc-uk.org

Species	Assessor(s)	Red List assessment	Year assessed	Red List rationale
Order Hexanchiformes				
Family Chlamydoselachidae				
Friilled Shark <i>Chlamydoselachus anguineus</i>	Paul, L.J. & Fowler, S.L.	NT	2003	A generally rare to uncommon deepwater species, with a few localities where it is taken more commonly as bycatch in several fisheries. Not an important target species, but a regular though small bycatch in many bottom trawl, midwater trawl, deep-set longline, and deep-set gillnet fisheries. As bycatch, this species is variously either used for meat, fishmeal, or discarded. Occasionally kept in aquaria (Japan). There is some concern that expansion of deepwater fisheries effort (geographically and in depth range) will increase the levels of bycatch. Although little is known of its life history, this deepwater species is likely to have very little resilience to depletion as a result of even non-targeted exploitation. It is classified as Near Threatened due to concern that it may meet the Vulnerable A2d+A3d+4d criteria.
Southern African Friilled Shark <i>Chlamydoselachus</i> sp. nov. [Ebert & Compagno]	Ebert, D.A. & Compagno, L.J.V.	DD	2004	The species is known from only a few specimens collected throughout its range and virtually nothing is known of its biology. Recorded from offshore continental and insular shelves and upper slopes, at depths of 51–1,440 m. It is possibly being caught in deepwater fishery off central and northern Namibia, but no data is available at this time.
Family Hexanchidae				
Sharpnose Sevengill Shark <i>Heptranchias perlo</i>	Paul, L.J. & Fowler, S.L.	NT	2003	A wide ranging, but relatively uncommon species where it occurs. Its centres of abundance may be at outer shelf, slope, and oceanic seamounts where commercial fisheries for other target species are likely to develop. It is likely to have a low intrinsic rate of increase, and poor resilience to depletion. This species is of minor commercial importance, but bycatch in bottom trawl and longline fisheries may have caused population declines where deepwater fisheries have been underway for several decades. Increased deepwater fishing effort in many regions is likely to affect populations in the future. The species is assessed as Near Threatened due to concern that it may meet the Vulnerable A2d+A3d+4d criteria.
Bluntnose Sixgill Shark <i>Hexanchus griseus</i>	Cook, S.F. & Compagno, L.J.V.	NT	2000	A valuable food and sports fish, the species seems unable to sustain target fisheries and is taken as bycatch (e.g., in <i>Centrophorus</i> liver oil fisheries now underway over large areas of the Indo-Pacific). Fisheries activity in parts of its range, including the Northeast Pacific, have led to the depletion of regional populations, some of which may be Vulnerable (A1bd+2bd). However, because population and fisheries data are lacking from many regions, a worldwide population depletion of over 20% is not proven for this wide-spread species.
Broadnose Sevengill Shark <i>Notorynchus cepedianus</i>	Compagno, L.J.V.	DD	2000	Although wide-ranging and moderately common (where not heavily exploited), this shark is restricted to a limited inshore depth range in heavily fished temperate waters and is exposed to

		<i>NT in Eastern Pacific</i>		intensive inshore fisheries over most of its range. The central California stock in the San Francisco Bay area is thought to have been depleted in the early 1980s, but lack of fisheries data elsewhere make it impossible to determine whether this pattern of depletion occurs throughout its range.
Order Squaliformes				
Family Echinorhinidae				
Bramble Shark <i>Echinorhinus brucus</i>	Paul, L.J.	DD	2003	An apparently rare deepwater shark, recorded sporadically and usually singly at widely dispersed localities. It may be present at greater depths than are commercially fished, but this is only speculative. It reaches a large size and, although very little is known of its life history, it is likely to be a slow-growing, late-maturing species of low overall productivity. In the Northeast Atlantic there is published qualitative information on a decline in this species over recent decades. At present there is inadequate information to assess the conservation status of this species, however, since it is a known (albeit infrequent) component of fisheries bycatch with probable limiting life history characteristics and likely rare status, the species may well meet the criteria for a threatened category as more information becomes available.
Prickly Shark <i>Echinorhinus cookei</i>	Paul, L.J.	NT	2003	A rare deepwater shark, known only from the Pacific Ocean. It may be present and more widely dispersed at greater depths than are presently fished, but this is only speculative. It appears to be vulnerable to deepwater trawling and line fishing and, as these fishing activities increase, there is potential for ongoing reduction of what may be a small fragmented population with low resilience to fisheries.
Family Squalidae				
Mandarin Shark <i>Cirrhigaleus barbifer</i>	White, W.T.	NT	2003	<i>Cirrhigaleus barbifer</i> is found in Japan, Torres Island, Indonesia, New Zealand and Tasmania and New South Wales in Australia, and appears to be locally rare (which may be a natural characteristic of this species). Very little is known about the biology of this species, however, its productivity is presumably low. The long dorsal-fin spines and probable slow moving lifestyle of this species makes it highly vulnerable to fishing activities involving nets and trawls within its known range and habitat. <i>C. barbifer</i> has a wide distribution, but the extent of occurrence appears to be highly fragmented with extremely low numbers of mature individuals. This species may meet Vulnerable criterion B2a and possibly even C1, however, there is no direct evidence to suggest that populations of this species are in decline due to the low numbers observed within its range and its apparent absence from the deepwater fisheries in some areas. Further investigation into populations and range of this species is necessary.
Piked (Spiny) Dogfish <i>Squalus acanthias</i>	Fordham, S.	NT	2000	The spiny dogfish is a widespread demersal continental shelf species, traditionally deemed the world's most abundant shark. It is theoretically, therefore, one of the few shark species with potential to support long-term large-scale sustainable fisheries. They are a highly valued food species, particularly in Europe, with fins and liver oil also utilized. Exceptionally slow growth and extremely low reproductive potential, combined with an aggregating habit that makes it possible for fishers to continue to target high value mature females even after stocks have been extremely seriously depleted, make this species particularly vulnerable to overfishing. Most fisheries around the world are unmanaged and, where stock assessments are available, known to be seriously depleted.
		VU	2003	Northwest Atlantic: The high demand in European markets have stimulated fisheries in the

		(A2bd+3bd+4bd) in Northwest Atlantic		Northwest Atlantic, where US federal efforts to manage the Northwest Atlantic stock for recovery are hampered by continued intensive and increasing exploitation in state waters to supply European market demand. As a result, mature female biomass has been reduced 75% in the past ten years, there have been seven years of recruitment failure, and pup survival is very low.
		EN (A2bd+3bd+4bd) in Northeast Atlantic	2003	Northeast Atlantic: Intensive fisheries in the Northeast Atlantic have been yielding declining catches since the early 1960s. Warnings since the late 1960s of over-exploitation of this stock have been ignored. There is still no effective management in place and a recent stock assessment indicates a decline to ~1% of original biomass. Despite a lack of management in the Mediterranean and Black Seas, these stocks do not appear to have been so seriously depleted.
Shortnose Spurdog <i>Squalus megalops</i>	Cavanagh, R.D. & Lisney, T.J.	DD LC in Australia*	2003	A common to abundant dogfish of temperate and tropical seas, this species is of considerable interest to fisheries. It is taken in significant quantities in bottom trawls and also caught with lines and mesh nets. <i>Squalus megalops</i> is one of the most abundant chondrichthyan species on the outer continental shelf and upper slope of southern Australia. Its distribution includes some heavily fished areas, for example, off southeast Australia, although significant declines have not been documented to date. It is a minor component of the demersal gillnet fisheries through Bass Strait, off South Australia and Western Australia. However, <i>S. megalops</i> is too small to be readily captured by gillnets, particularly the 6–6½-inch mesh of shark nets, and there has been no detectable changes in catch rates of this species by commercial shark gillnets in Bass Strait since the 1970s. There are large regions around southern Australia where <i>S. megalops</i> is not greatly impacted by fishing, including a large area off the northern west coast which is closed to shark fishing. Consequently, the species is assessed as Least Concern in Australia, but the situation should be monitored because there are recent indications that fishing pressure may be affecting the local abundance of the species in some areas e.g. off Ulladulla, New South Wales. It should be noted that although currently considered a wide-ranging single species, <i>S. megalops</i> , as assessed here, may in fact be an Australian endemic pending further taxonomic studies. Due to taxonomic uncertainty, the global assessment is Data Deficient, pending further study.
Blacktailed Spurdog <i>Squalus melanurus</i>	Fowler, S.L. & Séret, B.	LC	2003	This species is common all around New Caledonia, off the Loyalty Islands, the Chesterfield archipelago, on the Norfolk Ridge and off Vanuatu. It has been reported from a wide depth range (34-480 m) and there is very limited occurrence of deepsea fisheries within much of its range.
Shortspine (Greeneye) Spurdog <i>Squalus mitsukurii</i>	Cavanagh, R.D. & Lisney, T.J.	DD EN (A2bd+3d+4bd) in Australia NT in New Zealand	2003	<i>Squalus mitsukurii</i> has suffered documented declines of as much as 97% between 1976-77 and 1996-97 in a heavily trawled area off New South Wales, Australia. However, the category of Endangered (A2bd+3d+4bd) for this species in Australia has been assigned. This reflects varying levels of fishing pressure on much of the trawlable ground throughout the species' range on the continental slope of southern Australia (from Western Australia to Northern Queensland). Fishing pressure is intensive on trawl grounds around south-east Australia, and lower in Western Australia where <i>S. mitsukurii</i> was taken as bycatch in a small, short-lived demersal gillnet fishery for <i>Centrophorus uyato</i> in the mid-1990s, which ceased due to rapid catch declines; there may be some continuing bycatch in the Commonwealth-managed trawl fishery. In New Zealand, <i>S. mitsukurii</i> has a relatively restricted, disjunct distribution and is fished

				throughout its range by trawl, set net and longline fisheries, and there are currently no management measures. Research trawl surveys off the west coast of South Island show no trends in relative biomass between 1992 and 2000, but the survey may not be adequately monitoring abundance. <i>Squalus mitsukurii</i> is classified as Near Threatened in New Zealand, coming near to (if not actually) meeting Vulnerable criterion A2 and possibly also criterion A3. Due to taxonomic uncertainty (and lack of quantitative data from elsewhere), this species is currently Data Deficient globally. However, deepwater demersal trawl fisheries are expanding in other parts of its possible range, and with the observed declines described above, together with the knowledge that its biology is similar to other deepwater shark species, <i>S. mitsukurii</i> is not sufficiently fecund to withstand continued exploitation pressure.
Cyrano Spurdog <i>Squalus rancureli</i>	Fowler, S.L.	NT	2003	This species appears to be a Vanuatu endemic with an extremely restricted geographic range near Éfate. Furthermore, all specimens were obtained from a relatively narrow depth band (320-400 m). This species fails to meet the 'B' criterion for a threatened category, however, because there is no evidence that its deepwater habitat is threatened or fished heavily, hence no reason to suspect a decline in range, habitat quality or number of individuals.
Bartail Spurdog <i>Squalus</i> sp. nov. A [Last & Stevens, 1994]	Lisney, T.J. & Cavanagh, R.D.	DD	2003	This undescribed dogfish is likely to be rare or uncommon. Its current known distribution is off northeastern Australia where it is known from only a few specimens. This area has minimal fisheries although future expansion of fisheries here could pose a threat to the species. The biology is poorly known, though it is likely to have the limiting life history characteristics similar to other deepwater shark species. At present there is inadequate information to assess the conservation status of this species.
Eastern Highfin Spurdog <i>Squalus</i> sp. nov. B [Last & Stevens, 1994]	Lisney, T.J. & Cavanagh, R.D.	DD	2003	This undescribed dogfish occurs in eastern Australian waters. Its main known range is in an area with minimal fisheries although future expansion of deepsea trawl fisheries could pose a threat. The biology is virtually unknown though it is likely to have the limiting life history characteristics similar to other deepwater shark species. At present there is inadequate information to assess the conservation status of this species.
Western Highfin Spurdog <i>Squalus</i> sp. nov. C [Last & Stevens, 1994]	Cavanagh, R.D. & Lisney, T.J.	DD	2003	Virtually nothing is known of the biology of this undescribed dogfish, <i>Squalus</i> sp. nov. C, though it is likely to have the limiting life history characteristics similar to other deepwater shark species, thus will not be sufficiently fecund to withstand high levels of exploitation. It occurs on the continental slope off Western Australia with a known depth range of 220-510 m. This area is subject to the North West Slope Trawl and Western Deepwater Trawl fisheries. Although there has been no assessment of the effect on the non-target bycatch species of these fisheries, which will likely include <i>Squalus</i> sp. nov. C, fishing effort is small with only a few boats in operation. The lack of data on the species biology, extent of occurrence, population size, or any indicator of population trend warrants a Data Deficient assessment at this time.
Fatspine Spurdog <i>Squalus</i> sp. nov. D [Last & Stevens, 1994]	Cavanagh, R.D. & Lisney, T.J.	DD	2003	Very little is known of the biology of this undescribed dogfish, which occurs on the upper continental slope off northwestern Australia with a known depth range of 180-210 m. At depths below 200 m this area is fished by the North West Slope Trawl and Western Deepwater Trawl fisheries. Based on its known depth range, <i>Squalus</i> sp. nov. D is unlikely to be a significant component of the bycatch of these deepwater fisheries, although information is sparse and it is highly likely that the distribution and range of this species is wider than current knowledge suggests. In addition, fishing effort is small with only a few boats operating in these fisheries, and it is unlikely the impact is cause for concern for this species at the present time. The current known range of this species is an area less than 10,000 km ² , thus may qualify for Vulnerable

				under B1, but the lack of data on the species' biology (though it is likely to have the limiting life history characteristics similar to other deepwater shark species), details on its extent of occurrence, population size, or any indicator of population trend warrants a Data Deficient assessment at this time.
Western Longnose Spurdog <i>Squalus</i> sp. nov. E [Last & Stevens, 1994]	Cavanagh, R.D. & Lisney, T.J.	DD	2003	Little is known of the biology of this undescribed dogfish though it is likely to have the limiting life history characteristics similar to other deepwater shark species, thus will not be sufficiently fecund to withstand high levels of exploitation. It occurs on the continental slope off Western Australia with a depth range of 300-510 m. This area is subject to the North West Slope Trawl and Western Deepwater Trawl fisheries. Although there has been no assessment of the effect on the non-target bycatch species of these fisheries, which will likely include <i>Squalus</i> sp. nov. E, fishing effort is small with only a few boats in operation. The lack of data on the species' biology, extent of occurrence, population size, or any indicator of population trend warrants a Data Deficient assessment at this time.
Eastern Longnose Spurdog <i>Squalus</i> sp. nov. F [Last & Stevens, 1994]	Cavanagh, R.D. & Lisney, T.J.	NT	2003	This undescribed deepwater dogfish would qualify for Critically Endangered based on application of the criteria to part of its range studied off New South Wales, Australia with documented declines of as much as 97% between 1976-77 and 1996-97. Indeed, almost all trawlable ground on the continental slope off central and southern New South Wales is regularly fished and is likely to be maintaining continual local pressure on this species. However, this area represents less than 20% of its known range, with the rest to the north where fishery threats are non-existent or minor. Thus <i>Squalus</i> sp. nov. F is assessed as Near Threatened, reflecting its wider distribution outside the heavily fished area. However, if specimens are found to occur in other areas exploited by fisheries, and if it is found to have the life history characteristics (low fecundity, slow growth and high longevity) typical of better known squalids, the situation must be re-evaluated.
Family Centrophoridae				
Gulper Shark <i>Centrophorus granulosus</i>	Cook, S.F.	VU (A1abd+2d)	2000	This wide-spread species is being heavily fished in deepwater fisheries in the Northeast Atlantic, Northwest Pacific and other regions. Its life history makes it highly vulnerable to overexploitation and population depletion. The 'Vulnerable' assessment for the gulper shark may well be applicable to most other poorly known deep sea species that are now being exploited by unmanaged expanding fisheries. Studies are required to determine their life history characteristics and other parameters necessary for management.
Harrison's Dogfish <i>Centrophorus harrissoni</i>	Pogonoski, J.J. & Pollard, D.A.	CR (A2bd+3d+4bd)	2003	Documented declines of over 99% between 1976-77 and 1996-97 between the Sydney area (central New South Wales) and the Eden-Gabo Island Area (southern New South Wales/northern Victoria) by a fishery independent trawl research survey. The relatively narrow continental slope habitat of this species (which is fished throughout its entire depth range) suggests that it may now only be present in any numbers in areas that are non-trawlable. However, as dropline fishers also harvest this species off New South Wales (under New South Wales jurisdiction), further pressure may be placed on it in such areas. As with other deepwater sharks, particularly this genus, the low fecundity (1-2 pups maximum every 1-2 years), high longevity (closely related species live for at least 46 years according to preliminary ageing studies) and probable late age at first maturity of this species not only result in extremely rapid population depletion in fisheries, but also prevent it from quick recovery after such depletion.
Black Gulper Shark <i>Centrophorus isodon</i>	Duffy, C.	DD	2004	A rare, little-known deepwater dogfish with sporadic records in the Indian and Pacific Oceans. May be more wide-ranging than the records suggest. Inhabits upper continental and insular

				slopes and has been recorded at depths of 760–770 m. Maximum reported size 93 cm total length (TL). Nothing known of its biology, but related species generally have very low fecundity. Other members of the genus exhibit little resilience to fishing pressure and have been rapidly depleted by directed commercial fisheries, and as bycatch. Further research and monitoring of deepsea fisheries as they expand globally is necessary. Insufficient information is available to assess this species beyond Data Deficient at this time.
Endeavour Dogfish <i>Centrophorus</i> cf. <i>moluccensis</i> (See footnote 1)	Pogonoski, J.J. & Pollard, D.A.	DD EN (A2bd+3d+4bd) in Australia	2003	A fishery independent trawl survey of the Australian population documented declines of over 95% between 1976-77 and 1996-97 between the Sydney area (central New South Wales) and the Eden-Gabo Island Area (southern New South Wales/northern Victoria). However, populations of this species in Western Australia waters have not been overfished like those along the east coast of Australia and are therefore not threatened with extinction. Overall population declines in Australian waters have resulted in an Endangered assessment in Australia. The relatively narrow continental slope habitat of this species (which is fished throughout its entire depth range on the east coast of Australia) suggests that it may now only be present in significant numbers in east coast areas that are non-trawlable. However, as dropline fishers also harvest this species off New South Wales (under New South Wales jurisdiction), further pressure may be placed on it in such areas. As with other deepwater sharks, particularly this genus, the low fecundity (1-2 pups maximum every 1-2 years), high longevity (closely related species live for at least 46 years according to preliminary ageing studies) and probable late age at first maturity of this species not only result in extremely rapid population depletion in fisheries, but also prevent it from quick recovery after such depletion. It is still to be determined whether <i>Centrophorus moluccensis</i> may be a different (related) species outside the Australasia region, thus this species is currently Data Deficient globally pending further study. However, deepwater demersal trawl fisheries are expanding in other parts of its potential range, and with the observed declines described above, together with the knowledge that its biology is similar to other deepwater sharks, this, and related species warrant urgent conservation attention globally.
Taiwan Gulper Shark <i>Centrophorus niaukang</i>	Fowler, S.L.	NT	2003	Deepwater gulper sharks are highly vulnerable to population depletion through fisheries bycatch because of their highly K-selected biology. This species is very widely, but patchily distributed world-wide. Records are sparse and it is probably not abundant. The virtually complete absence of data on extent of occurrence, population size, or any indicator of population trend might be considered to warrant a Data Deficient assessment, but a Near Threatened assessment reflects widespread concern that bycatch of this biologically highly-vulnerable species has been occurring and will continue to occur in deepwater fisheries, possibly through a significant proportion of this species' range.
Leafscale Gulper Shark <i>Centrophorus squamosus</i>	White, W.T.	VU (A2bd+3bd+4bd) DD in Australia and Oceania*	2003	<i>Centrophorus squamosus</i> is an important component of deepwater fisheries (longline and trawl) off Ireland, Spain, Portugal and France. Quantitative CPUE data available for autoline catches in three ICES areas (Northeast Atlantic) show an 80-90% decline in three years, a 67-77% decline in four years and a 20-69% decline in one year. Although this data is for <i>C. squamosus</i> and <i>Centroscymnus coelolepis</i> combined, these declines together with the acute vulnerability to exploitation of <i>Centrophorus</i> species as shown from the New South Wales fishery independent surveys, and the knowledge that <i>C. squamosus</i> is the more vulnerable of these two species in terms of life history, leads to this species being assessed as Vulnerable. A stock analysis will be available shortly from the 'DELASS' project in the North East Atlantic and more detailed CPUE

				data throughout its range is required. The flesh and liver are marketed from this species in many areas throughout its range, e.g. eastern Atlantic and eastern Indonesia. In the latter region, <i>C. squamosus</i> is landed frequently but in relatively low numbers and in a very limited artisanal fishery. The catches of this species in Australia and Oceania are relatively low and do not represent a significant component of the squaloid catches in either southeastern Australia and New Zealand, but at present there is not enough information to assess it beyond Data Deficient in this region.
Southern Dogfish <i>Centrophorus cf. uyato</i> (See footnote 1)	Pogonoski, J.J. & Pollard, D.A.	DD CR (A2bd+3d+4bd) in Australia	2003	Declines of over 99% between the years 1976-77 and 1996-97 between the Sydney area (central New South Wales) and the Eden-Gabo Island area (southern New South Wales/northern Victoria) have been documented by a fishery independent trawl survey. The relatively narrow continental slope habitat of this species (which is fished throughout its entire depth range) suggests that it may now only be present in any numbers in areas that are non-trawlable. However, as dropline fishers also harvest this species off New South Wales (under NSW jurisdiction), further pressure may be placed on it in such areas. There was a small, short-lived fishery out of Esperance, Western Australia for <i>C. uyato</i> in the mid-1990s, which ceased due to rapid catch declines and there may be some bycatch in the Western Australia Commonwealth-managed trawl fishery. As with other deepwater sharks, particularly this genus, the low fecundity, high longevity and probable late age at first maturity of this species not only result in extremely rapid population depletion in fisheries, but also prevent it from quick recovery after such depletion. This species is currently Data Deficient globally due to the taxonomic problems. However, deepwater demersal trawl fisheries are expanding in other parts of its potential range, and with the observed declines described above, together with the knowledge that its biology is similar to other deepwater shark species, this, and related species warrants urgent conservation attention globally.
Brier Shark <i>Deania calcea</i>	Stevens, J.D.	LC	2003	Mainly a bycatch species taken by trawl and hook, although with some limited targeting, for its flesh and oil. Catches in Australia have been increasing in the last few years with relaxation of mercury laws and fishers looking for non-quota species in the South East Trawl Fishery. The quality of the catch data has improved recently but there are as yet no species specific trends in abundance or biomass available. Biomass estimates in New Zealand over a ten-year period show no evidence of a declining trend, although there may be problems of effort standardization. Research surveys on the New South Wales slope over a 20-year period have shown a decline from 15.7 kg/h to 1.4 kg/h for the related longsnout dogfish <i>Deania quadrispinosa</i> . While there are currently no quantitative data on population trends, the species has low productivity and increased targeting should be viewed with concern. However, the species is currently still abundant and a Near Threatened assessment cannot be justified. The situation should be monitored carefully.
Family Etmopteridae				
Hooktooth Dogfish <i>Aculeola nigra</i>	Acuña, E. & Romero, M.	DD	2004	A poorly known deepwater (110–735 m, but most commonly 200–500 m) etmopterid shark endemic to a limited area of the Southeast Pacific off Peru and Chile. Grows to a maximum of 60 cm total length (TL), with an average litter size of 10, but its biology is still relatively unknown. <i>Aculeola nigra</i> is reported to be relatively common within its limited range, but is potentially vulnerable to deepwater fishing methods. It is known to be taken as bycatch in Chilean deepwater crustacean trawl fisheries, where it was the most important chondrichthyan bycatch species by weight in the deep sea shrimp fishery. There is no indication of bycatch levels off

				Peru. Without detailed data on catch levels and trends, and pending further work on life history, the species cannot be assessed beyond Data Deficient at present.
Granular Dogfish <i>Centroscyllium granulatum</i>	Acuña, E. & Kyne, P.M.	DD	2004	A small, poorly known, deepwater shark endemic to Chile. Reported type locality as Falkland Islands is incorrect and the species is not known to occur there. Occurs at 300–500 m depth and reaches at least 61.5 cm total length (TL). Essentially nothing known about its biology or population status. Taken sporadically in small numbers as bycatch in the Chilean deep-sea shrimp fishery (Acuña and Villaroel 2002). There is no information available at this time to assess the species beyond Data Deficient.
Bareskin Dogfish <i>Centroscyllium kamoharai</i>	Fowler, S.L.	DD	2003	A little-known deepwater dogfish likely to be highly vulnerable to population depletion through fisheries bycatch because of its highly K-selected biology. Fairly broad but patchy occurrence through the Western Pacific, but records are sparse and the species is not abundant in bycatch in any deepwater fishery. The lack of data on extent of occurrence, population size, or any indicator of population trend is considered to warrant a Data Deficient assessment, despite concerns that bycatch has been occurring and will continue to occur in deepwater fisheries, possibly through most of the species' range.
Combtooth Dogfish <i>Centroscyllium nigrum</i>	Acuña, E.	DD	2004	A poorly known deepwater shark from the Central and Eastern Pacific in depths of 250–1,250 m. Taxonomic resolution is required as specimens from southern Chile to the Strait of Magellan may represent a separate species. Associated with both soft sand and mud bottoms, but may also feed off the bottom. Little known of its biology. Grows to about 50 cm total length (TL), and is aplacental viviparous with litters of at least seven. This species is captured in small numbers as bycatch in the Chilean deep sea shrimp fishery, and in sablefish traps in California, where it is not utilized. In Californian waters they do not appear to occur in large concentrations, as do other members of the genus (such as <i>C. fabricii</i>) in the Atlantic Ocean (D. Ebert, pers. comm.). Bycatch numbers need to be monitored; however, at present there is insufficient information available to assess the species beyond Data Deficient.
Baxter's Dogfish <i>Etmopterus baxteri</i>	Paul, L.J.	LC	2003	A moderately common deepwater shark within its known geographic range (Southern Australia and New Zealand), and which may extend deeper than is currently recognized. Although captured in some quantity in some deepwater trawl fisheries, it is taken only as bycatch, and over part of its known range. However, if the population is mobile and migrates into exploited fishing grounds from other parts of its range, and if it proves to have the life history characteristics (low fecundity, slow growth and high longevity) typical of better known squaloids, the assessment may have to move into a higher threat category.
Tailspot Lantern Shark <i>Etmopterus caudistigmus</i>	Fowler, S.L. & Séret, B.	LC	2003	This small deepwater shark has been recorded in small numbers from only a small area and relatively narrow depth band (638-793 m) off New Caledonia. Additional surveys will probably demonstrate that it is more widely distributed on the island slope, but it is still likely to be a New Caledonian endemic, particularly if (like related taxa) it is restricted to a relatively narrow depth band on the insular slope. There is very limited deepwater fishing within its range, the species is not targeted but discarded if occasionally caught on the unsuitable large hooks of commercial gear. There is no reason to suspect a decline in range, habitat quality or number of individuals.
Pink Lantern Shark <i>Etmopterus dianthus</i>	Kyne, P.M. & Cavanagh, R.D.	LC	2003	This deepwater lantern shark is currently recorded only from the continental slope of the central Queensland Plateau off Australia and off New Caledonia. Although the species is known only from two small areas and a narrow bathymetric range, further exploratory trawls may indicate a wider distribution. There are presently no major fishing activities in the known area of occurrence, and if captured it is likely discarded due to its small size and lack of commercial

				value. Survival rates after discarding, however, are not known. Given the global expansion of deepwater trawl fisheries, future pressure may be placed on this small species and any increase in fishing activities within its range should monitor the catch of this and other etmopterid species closely. At present, however, there is no reason to suspect a decline in range, habitat quality or number of mature individuals.
Lined Lantern Shark <i>Etmopterus dislineatus</i>	Kyne, P.M. & Cavanagh, R.D.	LC	2003	This deepwater lantern shark is currently recorded only from the central Coral Sea off Australia on the continental slope. Although the species is known only from a small area and a narrow bathymetric range, further exploratory trawls may indicate a wider distribution. There are presently no major fishing activities in the known area of occurrence, and if captured it is likely discarded due to its small size and lack of commercial value. Survival rates after discarding, however, are not known. Given the global expansion of deepwater trawl fisheries future pressure may be placed on this small species and any increase in fishing activities within its range should monitor the catch of this and other etmopterid species closely. At present, however, there is no reason to suspect a decline in range, habitat quality or number of mature individuals.
Blackmouth Lantern Shark <i>Etmopterus evansi</i>	Kyne, P.M. & Cavanagh, R.D.	LC	2003	A small deepwater lantern shark currently recorded from off northwestern Western Australia and the Arafura Sea (Indonesia) on the continental slope. Although the species is known only from a few small localities and has a narrow bathymetrical range, further exploratory trawls may indicate a wider distribution. Deepwater trawl fisheries are expanding globally, including in Indonesian waters. These activities may place future pressure on this small species. At present <i>Etmopterus evansi</i> is unlikely to be captured frequently as most of the trawl activity is not within its known depth range, and if captured it is likely discarded due to its small size and low commercial value. However, survival rates from trawl discards are likely to be low. There is currently no evidence of a decline in range, habitat quality or number of mature individuals; although any expansion of fishing throughout its range, especially in Indonesian waters should be closely monitored.
Pygmy Lantern Shark <i>Etmopterus fusus</i>	Kyne, P.M. & Cavanagh, R.D.	LC	2003	A small lantern shark currently recorded from off northwestern Western Australia on the continental slope, with the possibility of occurrence off Java, Indonesia. Although the species is known only from a few small localities, further exploratory trawls may indicate a wider distribution. <i>Etmopterus fusus</i> is assessed as Least Concern because there is little fishing in its known area of occurrence off Western Australia. However, deepwater trawl fisheries are expanding globally, including in Indonesian waters where its potential area of occurrence and depth range are heavily fished. These activities may place future pressure on this small species and if it is verified from the waters off Java, a higher category (of at least Near Threatened) should be considered.
False Pygmy Shark <i>Etmopterus pseudosqualiolus</i>	Fowler, S.L. & Séret, B.	LC	2003	This small lantern shark has been recorded from only a small area and relatively narrow depth band on oceanic ridges near New Caledonia. There is very limited deepwater fishing within its range, the species is not targeted but discarded if occasionally caught on the unsuitable large hooks of commercial gear. There is no reason to suspect a decline in range, habitat quality or number of individuals. It may also prove not to be restricted to such a small area if additional surveys are undertaken.
Rasptooth Dogfish <i>Miroscyllium sheikoi</i>	Yano, K.	DD	2004	A rare deepsea shark with a limited distribution area in southern Japan where it is known only from the Kyushu-Palau submarine ridge at depths of 340–370 m. Reaches at least 43 cm total length (TL) but very little information available on biology. Known specimens were collected by

				research surveys using commercial bottom trawl nets. Of no commercial value, but possibly taken as very rare bycatch in bottom trawl nets. Future expansion of deepwater fisheries could pose a threat to this poorly known species. However, at present there is very little, if any, fishing within the species' range. At this time the species cannot be assessed beyond Data Deficient.
Viper Dogfish <i>Trigonognathus kabeyai</i>	Yano, K.	DD	2004	A rare deepsea shark with a limited distribution area in Japan and a single record from Hawaii. Recorded on or near the bottom and in mid-water. Reaches at least 54 cm total length (TL) but very little information available on biology. Taken as bycatch of bottom trawl and purse seine fisheries, but not utilised. At this time the species cannot be assessed beyond Data Deficient. If fisheries expand in the future catches of this species may increase and would need to be monitored.
Family Somniosidae				
Portuguese Dogfish <i>Centroscymnus coelolepis</i>	Stevens, J.D. & Correia, J.P.S.	NT	2003	Mainly a bycatch species taken by trawl and hook, although with some limited targeting, for its flesh and oil. Catches in Australia have been increasing in the last few years with relaxation of mercury laws and fishers looking for non-quota species in the South East Trawl Fishery. However, appropriate data on biomass or trends in abundance are lacking. The productivity of this species is likely to be low (although age estimates and annual fecundity are currently unknown) and further increases in catches should be viewed with concern. This species is of much lower abundance than <i>D. calcea</i> or <i>C. crepidater</i> and, although the quantitative data on populations are lacking, its lower abundance, demersal habits (not appearing to range into midwater) and suspected low productivity warrant a Near Threatened assessment.
Owston's Dogfish <i>Centroscymnus owstoni</i>	Paul, L.J.	LC	2003	A moderately common deepwater shark within its known geographic range, and which may extend deeper than is currently recognised. Although captured in some quantity in some deepwater trawl fisheries, it is taken mainly as bycatch, and presumably from only part of its known range. However, if the population is mobile and migrates into exploited fishing grounds from other parts of its range, if (with other deepwater sharks) it becomes more frequently targeted, and if it proves to have the life history characteristics (low fecundity, slow growth and high longevity) typical of better known squaloids, the assessment may have to move into a higher category. However, the species is currently still moderately common over its wide southern Australian and New Zealand range and a Near Threatened assessment is not justified at this time.
Golden Dogfish <i>Centroselachus crepidater</i> (See footnote 2)	Stevens, J.D.	LC	2003	Mainly a bycatch species taken by trawl and hook, although with some limited targeting for its flesh and oil. Catches in Australia have been increasing in the last few years with relaxation of mercury laws and fishers looking for non- quota species in the South East Trawl Fishery. Biomass surveys extending over 10 years in New Zealand show an increasing trend, but may be confounded by the use of different vessels. The productivity of this species appears to be low, with age at maturity in Australia of 15 years (males) and 22 years (females), and longevity of around 60 years, thus further increases in catches should be viewed with concern. However, the species is currently still abundant and a Near Threatened assessment cannot be justified at this time, although the situation should be monitored carefully.
Largespine Velvet Dogfish <i>Proscymnodon macracanthus</i>	Leandro, L.	DD	2004	<i>Proscymnodon macracanthus</i> is a deepwater dogfish known only from the holotype collected at an unrecorded depth from the Straits of Magellan, Chile. Holotype was 68 cm total length (TL), but species may attain a larger size. Nothing known of its biology. Probably of little interest to fisheries, but insufficient information to assess this species beyond Data Deficient.

Plunket's Shark <i>Proscymnodon plunketi</i> (See footnote 2)	Paul, L.J.	NT	2003	A relatively uncommon deepwater shark within its known geographic range (parts of Australasia, perhaps now extended to southern Africa), although it may extend deeper than is currently recognised. Captured as bycatch in small but erratic quantities in some deepwater line and trawl fisheries, although presumably from only part of its known range. This species is of much lower abundance than the sympatric <i>C. owstoni</i> and its larger size and aggregating behaviour make it more susceptible to capture. The species appears to be of low productivity and if the population is mobile and migrates into and/or aggregates on exploited fishing grounds from other parts of its potentially small range, any increases in catches from increasing deepwater fisheries should be viewed with concern. These factors warrant a Near Threatened assessment.
Whitetail Dogfish <i>Scymnodalatias albicauda</i>	Duffy, C.A.J.	DD	2003	This species appears to be widespread in the Southern Ocean but is known from very few specimens. It is naturally rare and there is insufficient information on its biology, distribution and exploitation to assess it beyond Data Deficient.
Sparsetooth Dogfish <i>Scymnodalatias oligodon</i>	Leandro, L.	DD	2004	<i>Scymnodalatias oligodon</i> is known only from the holotype, a 26 cm total length (TL) immature male collected in the open ocean approximately 2,300 km WNW of Santiago, Chile. The species is apparently oceanic and captured near the surface (at 0–200 m) in water 2,000–4,000 m deep. Not known to be of any interest to fisheries, but cannot, at present, be assessed beyond Data Deficient.
Sherwood Dogfish <i>Scymnodalatias sherwoodi</i>	Duffy, C.A.J.	DD	2003	A very poorly known species known from a few specimens trawled off the east coast of South Island, New Zealand between 400–500 m depth. May also occur off Australia. Nothing is known of the species ecology, and there is insufficient information to assess it beyond Data Deficient.
Southern Sleeper Shark <i>Somniosus antarcticus</i>	Stevens, J.D.	DD	2003	A large dogfish species which is taken as bycatch in the orange roughy, Patagonian toothfish and other deepwater fisheries. It is only in the last five years or so that this species has started to be reported; although not very rare, little is known of catch rates and nothing about population numbers.
Family Oxynotidae				
Prickly Shark <i>Oxynotus bruniensis</i>	Francis, M.P.	DD	2003	Widespread in southern Australia and throughout New Zealand, but uncommon and only occasionally caught. No information available on catches by commercial vessels, no directed fisheries, but likely to be taken as trawl bycatch. Biology poorly known but fecundity is low (probably 7–8 pups/litter).
Caribbean Roughshark <i>Oxynotus caribbaeus</i>	Leandro, L.	DD	2004	<i>Oxynotus caribbaeus</i> is a rare, deepwater benthic shark recorded from the Gulf of Mexico and Venezuela on the upper continental slope at depths of 402–457 m. Attains a maximum size of at least 49 cm total length (TL) but virtually nothing known about its biology. This species is not known to be of interest to fisheries at present. Insufficient information available to assess the species beyond Data Deficient.
Japanese Roughshark <i>Oxynotus japonicus</i>	Yano, K.	DD	2004	A rare deepsea shark, known from only seven specimens, with a limited distribution area in Japan where it has been recorded in 150–350 m. Reaches a maximum size of at least 64.5 cm total length (TL), but very little information on biology. Bycatch of bottom trawl fisheries in Suruga Bay and Enshu-nada Sea. At this time the species cannot be assessed beyond Data Deficient. However given that its entire known geographic and depth range is affected by trawl fisheries, and other deepsea species have exhibited declines in Suruga Bay, the species may be threatened and a revised assessment is necessary when more information is available and/or if fisheries expand in the future and catches of this species increase.

Family Dalatiidae				
Kitefin Shark <i>Dalatias licha</i>	Compagno, L.J.V. & Cook, S.F.	DD <i>NT in Northeast Atlantic</i>	2000	Records of yields from the Portuguese/Azores kitefin shark fishery suggest that targeted fisheries are capable of reducing populations quite rapidly. The life history of this species is expected to result in a slow recovery after depletion. An increasing trend for fisheries to move into deeper water on continental shelves and slopes suggests that fishing pressure on this species will likely increase over the next decade or more. However, because the kitefin shark is widely distributed and data on fisheries and populations are lacking from most of its range, it is not possible to reach a global assessment.
Taillight Shark <i>Euprotomicroides zantedeschia</i>	Burgess, G.H.	DD	2004	<i>Euprotomicroides zantedeschia</i> is an extremely rare small pelagic shark. It is not known to enter any fishery, hence there are no apparent threats but given that it is only known from two specimens (from two widely separated South Atlantic locations) it cannot be assessed beyond Data Deficient at this time.
Cookie-cutter Shark <i>Isistius brasiliensis</i>	Stevens, J.D.	LC	2003	<i>Isistius brasiliensis</i> is widespread but with patchy distribution records. It is too small (up to about 50 cm total length (TL)) to be regularly taken by fisheries and although it is occasionally caught by pelagic longlines, and sometimes in midwater trawls and plankton nets there are no significant threats to this species.
Pocket Shark <i>Mollisquama parini</i>	Leandro, L.	DD	2004	A very poorly known deepwater shark recorded from the Naska Submarine Ridge in the Eastern South Pacific, off northern Chile. The holotype, and only known specimen, was an adult female (40 cm total length (TL)), taken at a depth of 330 m. Nothing is known of its biology or threats in the area.
Smalleye Pygmy Shark <i>Squaliolus aliae</i>	Heupel, M.R.	LC	2003	<i>Squaliolus aliae</i> has a patchy, but wide distribution throughout the Indo-West Pacific. Possibly the smallest known living shark, its size means it is irregularly taken in fisheries. Based on this and its wide range this species is classified as Least Concern.
Order Squatiniformes				
Family Squatinidae				
African Angelshark <i>Squatina africana</i>	Cliff, G.	DD	2004	Details of <i>Squatina africana</i> population status and threats are lacking throughout most of the species' Western Indian Ocean range. Data on the extent of catches in the Mozambique trawl fishery and in other parts of its range (Southwest Indian Ocean) are not available, although the species is taken in trawls and artisanal deepset gillnets in Tanzania. It cannot, therefore, be assessed globally beyond Data Deficient at this time. <i>Squatina africana</i> is reported in the bycatch of only two fisheries in KwaZulu-Natal (KZN), South Africa: the KZN shark nets (that provide protection against shark attack) and the Tugela Bank prawn trawl fishery. In both cases the species is caught in low numbers, with a significant proportion released alive, and a reasonably high survival rate. It is apparently little utilised and has no commercial value. The assessment for South Africa is therefore Least Concern. Given the apparent 'slow' life history of angel sharks together with documented declines of other similar species, catches should be monitored, particularly elsewhere in the species range.
Argentine Angel Shark <i>Squatina argentina</i>	Chiaromonte, G.E.	DD	2000	The Argentine angel shark is one of the three species of angel sharks on the western south Atlantic continental shelf from southern Brazil to northern Argentina. It is a poorly known but moderately common bottom-dwelling shark in depths of over 120 m. Although rarely targeted because of its depth range, its life history is only partly understood and population status uncertain. Further study and reassessment in the near future will be required, in view of the fact that most species of <i>Squatina</i> are likely to prove to be vulnerable to depletion by fisheries.

South Pacific Angel Shark <i>Squatina armata</i>	Lamilla, J. & Romero, M.	DD	2004	<i>Squatina armata</i> is tentatively recognised as distinct from <i>S. californica</i> , and, for the purpose of this assessment, it is considered a separate regional endemic, pending urgent taxonomic resolution of Eastern Pacific angel sharks. This species occurs from Colombia south to Chile on the continental shelf. Nothing is known of its biology. In Peru, angel sharks are of little importance to fisheries where landings have fluctuated with no apparent trend from 1964–1999, averaging at 267 metric tonnes per year. Information is not available from other countries within its range. Given declines in other <i>Squatina</i> species globally, careful monitoring of catches is required, as are life history studies.
Australian Angel Shark <i>Squatina australis</i>	Pogonoski, J.J. & Pollard, D.A.	LC	2003	A relatively abundant angel shark, endemic to the continental shelf (0-130 m) of southern Australia (central New South Wales to southern Western Australia). Valuable in fisheries and vulnerable to demersal trawls. Large areas of its range are untrawled, and observer data in the South East Trawl Fishery (Sydney, New South Wales to Great Australian Bight, South Australia) show no significant decline in abundance of <i>Squatina australis</i> from 1992-2001. The species is assessed as Least Concern, but there is a need to continue to monitor catch rates (standardized for effort), particularly in the South East Trawl Fishery, to ensure they remain stable.
Pacific Angel Shark <i>Squatina californica</i>	Cailliet, G.M.	NT	2000	This once abundant eastern Pacific coastal shark is relatively slow-growing, late maturing, and moderately fecund. Because of its rather limited geographical range and life history, resident stocks may be particularly vulnerable to heavy localised fishing pressure. Commercial catch data in recent decades documented a peak, followed by an almost complete collapse in the central California gillnet fishery for California halibut, now closed. This area encompasses a sizable portion of the species' range and its main center of distribution. A continued targeted commercial fishery for this species would pose a threat to the population in U.S. waters. It is uncertain what the Mexican fishery effort or catch might be for this, and perhaps a different species of <i>Squatina</i> , and the long-term prognosis of the population.
Angular Angel Shark <i>Squatina guggenheim</i>	Chiaramonte, G.E.	VU (A1bd+2d) <i>EN (A1bd+2d) in Brazil</i>	2000	This is a common bottom-dwelling shark at depths of between 10 and 80 m in western south Atlantic coastal waters from southern Brazil to northern Argentina. Although not usually targeted, it is commonly captured and landed by unmanaged multi-species gillnet and bottom trawl fisheries, and 50% of landings are immature. Intensive exploitation in recent years has led to an 88% decrease in trawling CPUE for the angel sharks <i>S. guggenheim</i> and <i>S. occulta</i> in southern Brazil, although landings remain high because of the increased fishing effort targeting more fecund species in the multi-species fishery.
Smoothback Angel Shark <i>Squatina occulta</i>	Chiaramonte, G.E.	EN (A1abd+2d)	2000	This bottom-dwelling shark occurs from 24° S (Rio de Janeiro, Brazil) to 33° S (Uruguay), in the western south Atlantic shelf waters. It matures at a larger size and reproduces more slowly than <i>S. guggenheim</i> , the other angel shark commonly captured and landed from multi-species gillnet and bottom trawl fisheries in the region. <i>S. occulta</i> makes up about 30% of angel shark catches and 70% of individuals landed are immature. Intensive exploitation in Brazilian waters in recent years has led to an 88% decrease in trawling CPUE for both <i>S. guggenheim</i> and <i>S. occulta</i> in southern Brazil. Fishing effort in the multi-species fisheries that take this angel shark as utilised bycatch will not be affected by a continued population decline.
Angel Shark <i>Squatina squatina</i>	Pawson, M. & Ellis, J.	VU (A1abcd+2d)	2000	This species is restricted to the northeast Atlantic and Mediterranean, where it is becoming increasingly uncommon and has been extirpated from parts of its former range. It is vulnerable as bycatch in bottom trawls and set nets throughout its range.
Ornate Angel Shark	Kyne, P.M. &	LC	2003	<i>Squatina tergozellata</i> is endemic to southern Australia, demersal on the continental shelf and

<i>Squatina tergocellata</i>	Bennett, M.B.			upper slope in depths of 130–400 m (most common about 300 m). The species matures at a large size (relative to maximum size), produces litters of two to nine young (average 4.5) probably biennially, after a gestation period of 6–12 months. It is taken in the Great Australian Bight Trawl Fishery (shelf/upper slope component) where catches appear to be stable. This component of the fishery operates mostly in 120–180 m, therefore a large portion of the species depth range is not trawled. Furthermore, the fishery receives relatively low effort (the fishery is managed by limited entry with only 10 Statuary Fishing Rights) and a large portion of the species range receives minimal fishing effort. The species is assessed as Least Concern. However, given documented declines in other angel shark species together with their 'slow' life history characteristics, any future expansion of fisheries within its area of occurrence would need to closely monitor catches of this species.
Eastern Angel Shark <i>Squatina</i> sp. nov. A [Last & Stevens, 1994]	Pogonoski, J.J. & Pollard, D.A.	VU (A2bd)	2003	An endemic species of the outer shelf and upper slope of Eastern Australia. Generation period inferred to be >10 years. Heavily fished (utilized trawl bycatch) in the southern half of its range. A 96% documented decline in CPUE and a reduction in the mean size of large individuals reported by fishery-independent trawl surveys between 1976-77 and 1996-97 in fished areas near the centre of the range. This represents only a quarter of the total range of this endemic, with large areas of its northern range (where the species' abundance is suspected to be lower than in the central and southern parts of its range) remaining untrawled.
Western Angel Shark <i>Squatina</i> sp. nov. B [Last & Stevens, 1994]	Kyne, P.M. & Cavanagh, R.D.	DD	2003	A poorly known, undescribed, angel shark endemic to the Western Australia continental shelf and upper slope (150-310 m). Nothing is known of its biology, but all those members of this genus for which biological data are available are known to be extremely vulnerable to fishing pressure because of their life history characteristics, morphology, limited dispersion and recolonisation potential, and habitat preferences. Serious declines have been documented for many better-known <i>Squatina</i> species with a wider distribution, but no population data or trend data are available for this endemic. The species is presently of no commercial value and is not recorded in Western Australia state fisheries. It is likely to be encountered in the commonwealth North West Slope Trawl Fishery, but effort in that fishery is very low. Bycatch data should be collected and the life history characteristics of this species elucidated. Any future expansion of fisheries within its area of occurrence would need to closely monitor catches of this species.
Order Pristiophoriformes				
Family Pristiophoridae				
Sixgill Sawshark <i>Pliotrema warreni</i>	Fowler, S.L.	NT	2004	<i>Pliotrema warreni</i> is a southern African endemic with a relatively restricted geographic distribution, depth range of 37 m to at least 500 m, and possibly a discontinuous habitat distribution. Likely a relatively unproductive species, with fairly small litters and relatively large size at maturity compared with some other sawsharks. Vulnerable to net gear because of its morphology. Taken as discarded, unmonitored bycatch in demersal trawlers throughout much of its range. Although population and trend data are lacking, levels of bycatch of this species are considered likely to be unsustainable. <i>P. warreni</i> is assessed as Near Threatened due to concerns regarding its vulnerability to this unmonitored fishing pressure and its restricted distribution.
Common Sawshark <i>Pristiophorus cirratus</i>	Walker, T.I. & Simpfendorfer, C.A.	LC	2003	The 2000 IUCN Red List Assessment classed this species as Near Threatened. The current assessment lowers the classification to Least Concern due to new information, including a comprehensive study of age, growth and reproduction. The revised assessment is also based

				<p>on a 25-year time series of catch and effort data from the Southern Shark Fishery and 12 years of monitoring data from an onboard observer program on trawlers.</p> <p><i>Pristiophorus cirratus</i> is a moderately abundant endemic species on the continental shelf and, to a lesser extent, the continental slope of southern Australia. The species is harvested over its entire range, but most of the catch is taken from Bass Strait in gillnets of mesh-size ranging 6–6½ inches or from New South Wales and off eastern Victoria by the South East Trawl Fishery. Current exploitation rates are considered sustainable. Classification of this species is based mainly on six pieces of evidence: (1) stable commercial catch rates for the combined catch of <i>P. nudipinnis</i> and <i>P. cirratus</i> during the past 20 years, following an earlier decline; (2) fishery-independent survey indicates over the past 25-year period indicates the number of animals caught declined to 67%; the change is not statistically significant; (3) fishing effort has been reducing and a combined Total Allowable Catch has been implemented for <i>P. nudipinnis</i> and <i>P. cirratus</i>; (4) relatively high biological productivity; maximum age of 15 years with 6–19 offspring produced biennially; (5) no contraction of range or fragmentation of the population, and; (6) the three-mile closure of all Victorian waters to shark fishing provides a large refuge for the species.</p>
Southern Sawshark <i>Pristiophorus nudipinnis</i>	Walker, T.I.	LC	2003	<p><i>Pristiophorus nudipinnis</i> is a moderately abundant endemic species and is harvested over its entire range on the continental shelf of southern Australia. Most of the catch is taken from Bass Strait in gillnets of mesh-size ranging 6–6½ inches. Current exploitation rates are considered sustainable, based mainly on six pieces of evidence: (1) stable commercial catch rates in the combined catch of <i>P. nudipinnis</i> and <i>P. cirratus</i> during the past 20 years, following an earlier decline; (2) fishery-independent surveys over the past 25-year period indicates the number of animals caught declined to 45%, however, the change is not statistically significant; (3) fishing effort has been reducing while a Total Allowable Catch (TAC) has been implemented for the two pristiophorid species; (4) relatively high biological productivity; maximum age is nine years with 7–14 offspring produced biennially; (5) No contraction of range or fragmentation of the population; and (6) The three-mile closure of all Victorian waters to shark fishing provides a large refuge for the species.</p>
Eastern Sawshark <i>Pristiophorus</i> sp. nov. A [Last & Stevens, 1994]	Heupel, M.R.	NT	2003	<p><i>Pristiophorus</i> sp. nov. A is an endemic found only in a small region off the east coast of Australia on the continental shelf and upper slope. The depth range and distribution of the species overlaps with heavily fished areas. Due to its restricted range and susceptibility to capture in commercial fisheries, which may rapidly lead to population depletion, this species is classified as Near Threatened.</p>
Tropical Sawshark <i>Pristiophorus</i> sp. nov. B [Last & Stevens, 1994]	Heupel, M.R.	LC	2003	<p><i>Pristiophorus</i> sp. nov. B is an endemic species known only from off northeastern Australia. Little is known of its biology, other than small size at maturity, which may indicate that it is a relatively productive species. Its area of occurrence receives little fishing effort. There are no identifiable threats to the species and, therefore it is classified as Least Concern.</p>
Dwarf Sawshark <i>Pristiophorus</i> sp. nov. [Compagno in Smith & Heemstra, 1995]	Fowler, S.L. & Pegado, A.J.	LC [#]	2004	<p>A Western Indian Ocean endemic with a restricted geographic distribution in deepwater (286m to at least 517m). Its range is poorly surveyed and not well documented. Very small size may indicate that it is relatively productive compared with some other sawsharks. Vulnerable to net gear because of its morphology, but all known specimens have been obtained from research trawls in much deeper water than is currently fished commercially. There are no known fisheries in this area and it is therefore assessed as Least Concern at the present time. This assessment will need to be reviewed and bycatch trends monitored carefully if trawl fisheries (legal or illegal)</p>

				move into deeper water.
Order Rajiformes				
Family Pristidae				
Narrow Sawfish <i>Anoxypristis cuspidata</i>	Compagno, L.J.V., Cook, S.F. & Oetinger, M.	EN (A1acde+2cde)	2000	This large sawfish is distributed through much of the Indo-West Pacific region. It is, like all other Pristids, disproportionately subject to continued capture in the net gear widely employed throughout its range. It is also vulnerable to habitat loss and damage as a result of human activities in shallow inshore coastal waters, estuaries and possibly the lower reaches of rivers. Extensive fishing and this K-selected species life history have caused substantial reductions in abundance and the virtual disappearance of this species from commercial catches in regions where it was once considered fairly common.
Dwarf Sawfish <i>Pristis clavata</i>	Cook, S.F., Compagno, L.J.V. & Last, P.R.	EN (A1acd+2cd)	2000	This small species of sawfish is known only from northern Australia, but may also occur through Indonesia and adjacent areas of Southeast Asia. The population is much reduced as a result of bycatch in commercial gillnet and trawl fisheries throughout its limited confirmed range. Its known distribution may expand with further collections in adjacent waters, but these areas are also fished sufficiently intensively for all species of sawfishes to be commonly bycaught in local fisheries and for populations to be similarly depleted.
Freshwater Sawfish <i>Pristis microdon</i>	Compagno, L.J.V. & Cook, S.F.	EN (A1bcde+2bcde) CR (A1abc+2cd) in South East Asia	2000	A large species of sawfish that is wide-ranging in the Indo-West Pacific, in freshwater or inshore coastal waters. It is extremely vulnerable to fisheries and virtually all known populations have experienced very serious declines. It is also threatened by habitat loss and degradation over most of its range from southern Africa and eastern India through much of Southeast Asia to Northern Australia.
Wide Sawfish <i>Pristis pectinata</i>	Adams, W.F.	EN (A1bcd+2cd) CR (A1abc+2cd) in North and Southwest Atlantic	2000	This large, widely distributed, sawfish has been wholly or nearly extirpated from large areas of its former range in the North Atlantic (Mediterranean, US Atlantic and Gulf of Mexico) and the Southwest Atlantic coast by fishing and habitat modification. Its status elsewhere is uncertain but likely to be similarly reduced. Reports of this species from outside the Atlantic may be misidentifications of other pristids, but these populations are also likely to be similarly affected.
Largetooth Sawfish <i>Pristis perotteti</i>	Compagno, L.J.V., Cook, S.F. & Oetinger, M.	CR (A1abc+2cd)	2000	A large, previously widely distributed marine, estuarine and freshwater sawfish. It has been taken in former directed fisheries and is extremely vulnerable to bycatch in virtually all fisheries throughout its Atlantic and Eastern Pacific range. The species has been extirpated from its former European range and its status is known to be especially serious in Lake Nicaragua and other Central American sites. Possibly conspecific with <i>P. microdon</i> .
Common Sawfish <i>Pristis pristis</i>	Cook, S.F. & Compagno, L.J.V.	CR (A1abc+2cd)	2000	A large species of inshore marine and freshwater sawfish that was once common in the Mediterranean and Eastern Atlantic, but has now, along with all other sawfishes, been extirpated from Europe and the Mediterranean. Its status in West Africa is unsurveyed, but it is extremely vulnerable to bycatch and is believed to be severely depleted in Africa, where elasmobranch fisheries effort has increased. Without timely intervention, there is a high probability that this sawfish will become extinct.
Green Sawfish <i>Pristis zijsron</i>	Compagno, L.J.V., Cook, S.F. & Oetinger, M.	EN (A1bcd+2cd)	2000	A formerly common Indo-West Pacific sawfish that inhabits inshore marine areas and the lower reaches of rivers. Intensive exploitation in directed and bycatch fisheries throughout its Australian, South East Asian and Indian Ocean range has resulted in severe population depletions in many, if not most, areas. Records have been extremely infrequent or absent from

				some parts of its (former?) range during the past 30-40 years.
Family Rhinidae				
Shark Ray <i>Rhina ancylostoma</i>	McAuley, R.B. & Compagno, L.J.V.	VU (A2bd+3bd+4bd) <i>NT in Australia*</i>	2003	<i>Rhina ancylostoma</i> is a widely distributed Indo-west Pacific inshore species taken by multiple artisanal and commercial fisheries throughout its range both as a target species and as bycatch. Flesh is sold for human consumption in Asia and the fins from large animals fetch exceptionally high prices, creating a significant incentive for bycatch to be retained. Very little is known about the biology or population status of this species, but it appears not to be common anywhere. Given its susceptibility to capture by multiple fishing gear types, including trawl nets, gillnets and hooks, and its high value fins, it is probable that numbers have been locally reduced by fishing throughout its range. Local population depletion can be inferred from Indonesia where the target gillnet fishery fleet for rhinids and rhynchobatids has declined significantly, reportedly due to declining catch rates. It is probable that the population will continue to decline, at least, until target fisheries become uneconomical. Habitat destruction is also thought to pose a significant threat to <i>R. ancylostoma</i> throughout much of its range. Thus, given its susceptibility to capture, high value fins, inferred and observed declines, and continual fisheries pressure placed across most of its range the species is assessed globally as Vulnerable. There are no target fisheries for <i>R. ancylostoma</i> in Australia but it is a known bycatch of demersal trawl fisheries. The introduction of Turtle Exclusion Devices (TEDs) in some Australian trawl fisheries and the implementation of various elasmobranch-finning prohibitions, has probably led to a recent reduction in captures by this sector, hence the Near Threatened classification for this species in Australian waters, although the situation should be monitored due to the vulnerability of this species and the high value of its fins.
Family Rhynchobatidae				
White-spotted Guitarfish <i>Rhynchobatus australiae</i> (See footnote 3)	White, W.T. & McAuley, R.B.	VU (A2bd+3bd+4bd) <i>NT in Australia*</i>	2003	<i>Rhynchobatus australiae</i> is taken by multiple artisanal and commercial fisheries throughout its range both as a target species and as bycatch. Flesh is sold for human consumption in Asia and the fins from large animals fetch exceptionally high prices, creating a significant incentive for bycatch to be retained. Very little is known about the biology or population status of this species. Given its susceptibility to capture by multiple fishing gear types, including trawl nets, gillnets and hooks and its high value fins, it is probable that numbers have been locally reduced by fishing throughout its range. Local population depletion can be inferred from Indonesia where the target gillnet fishery fleet for rhinids and rhynchobatids has declined significantly, reportedly due to declining catch rates. Therefore, globally this species meets the criteria of Vulnerable A2bd+3bd+4bd due to the apparent population decline outlined above and the remaining very high level of exploitation in South East Asia. Habitat destruction may also pose a significant threat to this species throughout much of its range. There are no target fisheries for <i>R. australiae</i> in Australia but it is a known bycatch of demersal trawl fisheries in the region. The introduction of Turtle Exclusion Devices (TEDs) in some Australian trawl fisheries in 2000 and the implementation of various elasmobranch-finning prohibitions, has probably led to a recent reduction in captures by this sector. However, given the population declines throughout South East Asia and the high value placed on fins (even in Australia), the Australian population may meet the criteria of Vulnerable A2d, but more detailed catch data is required and it is thus assessed as Near Threatened in these waters.
Smoothnose Wedgefish	McAuley, R.B. &	VU	2003	Due to its inshore occurrence off river mouths and shallow bays, <i>Rhynchobatus laevis</i> is subject

<i>Rhynchobatus laevis</i> (See footnote 3)	Compagno, L.J.V.	(A2bd+3bd+4bd) <i>NT in Australia*</i>		to capture in a variety of fisheries. Flesh is sold for human consumption in Asia and the fins from large animals of this species and other members of its genus fetch exceptionally high prices, creating a significant incentive for bycatch to be retained. Although very little is known about its population status, because of its fragmented and sketchy distribution, unregulated targeted fishing in some areas and high fin value, local populations of <i>R. laevis</i> appear to have been significantly depleted throughout its range and are likely to continue to decline, at least until target fisheries become uneconomical. Thus the species is assessed as Vulnerable globally. Habitat destruction is also thought to pose a significant threat to <i>R. laevis</i> throughout much of its range. The range of <i>R. laevis</i> is poorly known in northern Australia, due to confusion with <i>R. australiae</i> and <i>R. djiddensis</i> , and there may be a higher bycatch in demersal trawl fisheries than is currently understood. However, the introduction of Turtle Exclusion Devices (TEDs) in some Australian trawl fisheries and the implementation of various elasmobranch-finning prohibitions, has probably led to a recent reduction in captures by this sector, hence the Near Threatened classification in Australian waters, although the situation should be monitored due to the vulnerability of this species and the high value of its fins.
Family Rhinobatidae				
Western Shovelnose Ray <i>Aptychotrema vincentiana</i>	McAuley, R.B.	LC	2004	A common inshore endemic shovelnose ray with a wide distribution around southern and western Australia (although less common at the eastern extent of its range). Due to its inshore occurrence, <i>Aptychotrema vincentiana</i> is subject to capture in a variety of fisheries throughout its range. However, they are of negligible commercial value due to the small, low value fins, low recovery of saleable flesh and lack of markets, at least in Western Australia. These small shovelnose rays are therefore usually discarded alive.
Spotted Shovelnose Ray <i>Aptychotrema</i> sp. nov. A [Last & Stevens, 1994]	McAuley, R.B.	LC	2003	Endemic to the Timor Sea (northern Australia) and known only from a few specimens taken in about 120 m, but possibly with a wider distribution than is currently known. Distributed outside the depth range of the major tropical Australian prawn trawl fishery and too deep for capture by illegal Indonesian fishing vessels. Possibly taken as bycatch in the Northern Territory fish trawl fishery but are likely to be of negligible commercial value due to their small, low value fins, low recovery of saleable flesh and lack of markets. Although poorly known, at this stage there are no identifiable threats to the species.
Brazilian Guitarfish <i>Rhinobatos horkelii</i>	Lessa, R. & Vooren, C.M.	CR (A1bd+2bd)	2000	The abundance of this medium sized coastal species from the southeastern coast of South America has decreased in Southern Brazil (the centre of its range) by 96% over the ten years from 1984, when its landings peaked, to 1994. It is extremely vulnerable to capture by fisheries because the inshore areas where all pregnant females and adult males congregate for parturition and mating are so heavily fished. Immature fish, which remain inshore year-round, are also taken. Because the fishery targets several other elasmobranchs, and is not dependent on <i>R.horkelii</i> , the near-extinction of this species alone will not cause the fishery to close. It is therefore quite likely that this endemic guitarfish could be driven to extinction in the foreseeable future.
Flathead Guitarfish <i>Rhinobatos planiceps</i>	Lamilla , J.	DD	2004	An inshore Eastern Pacific endemic guitarfish known from the west coast of South America to Chile and also the Galapagos Islands (and likely to occur in the Galapagos Marine Reserve). No information available on its biology, threats or status and at present this species cannot be assessed beyond Data Deficient.
Giant Shovelnose Ray <i>Rhinobatos typus</i>	White, W.T. & McAuley, R.B.	VU (A2bd+3bd+4bd)	2003	<i>Rhinobatos typus</i> is taken by multiple artisanal and commercial fisheries throughout its range both as a target species and as bycatch. Flesh is sold for human consumption in Asia and the

		<i>NT in Australia*</i>		fins from large animals fetch particularly high prices, creating a significant incentive for bycatch to be retained. Very little is known about the biology or population status of this species. Given its susceptibility to capture by multiple fishing gear types, including trawl nets, gillnets and hooks and its high value fins, it is probable that numbers have been locally reduced by fishing throughout its range. Local population depletion can be inferred from Indonesia where the target gillnet fishery fleet for rhinids and rhynchobatids has declined significantly, reportedly due to declining catch rates. Therefore, globally this species meets the criteria of Vulnerable A2bd+3bd+4bd due to the apparent population decline outlined above and the remaining very high level of exploitation in South East Asia. Furthermore, destruction of habitat, e.g. mangrove areas, and high level of fishing pressure in areas such as Papua (e.g. Merauke) may be having a deleterious effect on juveniles of this species that utilize such inshore regions. There are no target fisheries for <i>R. typus</i> in Australia but it is a known bycatch of demersal trawl fisheries in the region. The introduction of Turtle Exclusion Devices (TEDs) in the Australian Northern Prawn Trawl Fishery in 2000 and the implementation of various elasmobranch-finning prohibitions, has probably led to a recent reduction in captures by this sector. However, given the population declines throughout South East Asia and the high value placed on fins (even in Australia) the Australian population may meet the criteria of Vulnerable A2d, but more detailed catch data is required and it is thus assessed as Near Threatened in Australian waters.
Goldeneye Shovelnose Ray <i>Rhinobatos</i> sp. nov. A [Last & Stevens, 1994]	McAuley, R.B.	LC	2003	A little known common shovelnose ray endemic to northwestern Australia. Occurs in coastal waters, within the depth range of some small prawn and fish trawl fisheries. It is a known bycatch of the Pilbara Fish Trawl (PFT) Fishery, but is of negligible commercial value due to its small, low value fins, low recovery of saleable flesh and lack of markets. Is known to be discarded alive in the PTF and is likely to have a high survival rate. Possibly has a wider distribution than is currently known.
Southern Fiddler Ray <i>Trygonorrhina fasciata</i>	Reardon, M.B.	LC	2003	An Australian endemic with a wide range across southern Australia, <i>Trygonorrhina fasciata</i> appears to be common throughout its range. Little is known of its biology, but it is probably a relatively productive species. Abundance data for 1992 to 2002 from the South East Trawl Fishery operating from New South Wales to South Australia including Tasmania shows no appreciable decline in catch rates. Data from a trawl survey in Western Australia indicates a relatively abundant population in this region. Reasonable areas of its range are subject to little commercial demersal fishing (i.e. in the Great Australian Bight).
Family Narcinidae				
Brazilian Blind Electric Ray <i>Benthobatis krefftii</i>	Rincon, G.	VU (B1ab(v))	2004	<i>Benthobatis krefftii</i> has an extremely localised and restricted distribution at 400–600 m, known only off Santa Catarina State, Brazil with a further single specimen recorded off São Paulo State. Estimated extent of occurrence is about 16,000 km ² , but is probably less. Often captured in large numbers by the bottom otter trawl fleet for squid in the area. It is likely to have a low intrinsic rate of increase, and poor resilience to depletion as a deepwater species with only one or two embryos per litter. Increased deepwater fishing effort for squid in its very limited range is likely to affect the population in the near future, inferring a potential and probable decline in the number of mature individuals.
Apron Ray <i>Discopyge tschudii</i>	Massa, A., Hozbor, N. & Lamilla, J.	NT <i>VU (A3bd+4bd) in Southwest</i>	2004	<i>Discopyge tschudii</i> is a small temperate electric ray from the Southwest Atlantic and Southeast Pacific Oceans (occurring as two separate subpopulations). It is rare in southern Brazil where it occurs only in small numbers in winter and in Uruguay captures are also low. In Northern Argentina, biomass measured by research trawling decreased by 88% in the years 1994–1999.

		Atlantic DD in Southeast Pacific		However, because there was an apparent change in the distribution pattern of the species it is impossible to tell whether this decline was caused by a reduction in population size or geographic availability of <i>Discopyge</i> mitigated by different hydrographic conditions. However, given this data and intense fishing pressure across its range in the Southwest Atlantic it is classified as Vulnerable there. Future research may result in downgrading the conservation status to Near Threatened or upgrading perhaps as high as Critically Endangered. In the Southeast Pacific there is no information on the impact of fisheries bycatch on its abundance and this population is assessed as Data Deficient. Globally, the species is assessed as Near Threatened, taking into account its threatened status in the Southwest Atlantic, where fisheries appear to have caused a rapid and steep population decline, and an inferred population decline in the Southeast Pacific as a result of bycatch mortality.
Family Narkidae				
Blind Electric Ray <i>Typhlonarke aysoni</i>	Duffy, C.A.J.	DD	2003	<i>Typhlonarke aysoni</i> is a poorly known electric ray, endemic to New Zealand. It is apparently rare, however, its distribution and status is uncertain due to confusion with the similar <i>T. tarakea</i> . <i>Typhlonarke aysoni</i> is potentially vulnerable to fisheries activity since its known distribution coincides with major trawl fishery grounds, but insufficient information is available to assess the species beyond Data Deficient at this time.
Oval Electric Ray <i>Typhlonarke tarakea</i>	Duffy, C.A.J.	DD	2003	<i>Typhlonarke tarakea</i> is a poorly known electric ray, endemic to New Zealand. It is apparently rare, however, its distribution and status is uncertain due to confusion with the similar <i>T. aysoni</i> . <i>Typhlonarke tarakea</i> is potentially vulnerable to fisheries activity since its known distribution coincides with major trawl fishery grounds, but insufficient information is available to assess the species beyond Data Deficient at this time.
Family Hypnidae				
Coffin Ray <i>Hypnos monopterygius</i>	Lisney, T.J.	LC	2003	This endemic ray is assessed as Least Concern as it is common and widely distributed in tropical and warm temperate Australian waters. Although it is occasionally taken as bycatch by commercial trawlers, this species is very hardy (it can survive out of water for hours), and is usually returned alive. More information on the biology of this species is required.
Family Torpedinidae				
Pacific Electric Ray <i>Torpedo californica</i>	Neer, J.A.	LC	2000	The Pacific electric ray has a restricted distribution in relatively shallow, inshore waters on the west coast of North America. Targeted commercial or recreational fisheries do not threaten it, and levels of bycatch appear low.
New Zealand Torpedo Ray <i>Torpedo fairchildi</i>	Duffy, C.A.J.	DD	2003	<i>Torpedo fairchildi</i> is an apparently common endemic species with a wide geographic and bathymetric distribution around New Zealand. Further taxonomic research is required to determine if this species occurs elsewhere. Little is known of its biology. It is not targeted commercially but is taken regularly as bycatch in commercial bottom trawl fisheries and occasionally on bottom-set longlines throughout its range. Survival rates of discarded individuals are unknown. Spatial refuges from fishing are unknown but may exist. Its large size (to 200 cm total length (TL)) and apparently low fecundity indicate that it is potentially vulnerable to overfishing and bycatch rates should be monitored closely.

Blackspotted Torpedo <i>Torpedo fuscomaculata</i>	Pheeha, S.	DD	2004	Very little is known about this electric ray, endemic to the southern Africa (and possibly smaller Indian Ocean island). Occurs from the intertidal zone down to 439 m depth. Although it appears frequently in scientific trawl surveys, it has never been studied. This species is caught as bycatch by inshore trawlers and anglers, and found in estuarine and intertidal zones, so likely to be affected by coastal developments. Monitoring, abundance estimates and collection of basic biological data is urgently needed, and this species may prove to have a more restricted range when the taxonomy of this genus is further resolved.
Family Arhynchobatidae				
Spotback Skate <i>Atlantoraja castelnaui</i>	Hozbor, N., Massa, A & Vooren, C.M.	EN (A2bd+3bd+4bd)	2004	A large skate, endemic to the Southwest Atlantic (southern Brazil, Uruguay and Argentina) continental shelf, which is subject to heavy fishing pressure. The vulnerability of similar large skates to overexploitation and subsequent population depletion is well documented. In south Brazil, the species has been commercially landed since at least 1986 and was frequently observed in trawler landings in 2002 and 2003. In Argentina, the species has been landed since 1994. Landing statistics are not available because all species of batoids are recorded as "unidentified rays and skates". Due to its large body size, the species has a high commercial value. Trawl fishing in the habitat of the species is intense. Off Argentina and Uruguay, biomass measured by research trawling decreased by 75% in the years from 1994-1999 and it is highly probable that in Brazil the species has declined by a similar amount.
Deepsea Skate <i>Bathyraja abyssicola</i>	Cook, S. & Zorzi, G.	DD	2000	Information is lacking on the range, population size and general and reproductive biology of this (and indeed other) rarely recorded deep sea species. However, as fisheries for other traditional species move into deeper waters, the likelihood that this species will become subject to increased incidental capture will certainly increase. More research is required on this and other poorly known deep sea species to fully determine their threatened status.
Slimtail Skate <i>Bathyraja longicauda</i>	Lamilla, J.	DD	2004	A little-known softnose skate endemic to the continental slope off Peru and Chile in the Southeast Pacific in depths of 580–735 m. Known from only a handful of specimens, all juveniles, with the largest observed individual a male of 29.3 cm total length (TL). Adults of this species have not been observed and probably occur in water deeper than 735 m where commercial fisheries do not operate at present. Nothing is known of its biology, and there is insufficient information to assess the species beyond Data Deficient at this time.
Blotched Sand skate <i>Psammobatis bergi</i>	Chiaramonte, G.	LC	2004	Endemic to the Southwest Atlantic from Rio de Janeiro, Brazil (23°S) to Patagonia, Argentina (41°S). It is known to be an abundant small skate (to 60.5 cm total length (TL)) in the coastal waters of Uruguay and Argentina. This skate has very recently become a target species in the multi-species coastal bottom trawl fishery operating in Buenos Aires province (Argentina). Previously it was commonly caught and discarded in this fishery. It is also taken as bycatch and discarded in other fisheries off Argentina, including those for hake and shrimp, and Patagonian bottom trawl fisheries. Females are assumed to be able to breed throughout the entire year. Due to its apparent abundance and probable high reproductive output (for a chondrichthyan) the species is assessed as Least Concern. However, given increasing fisheries pressure across its range, and the recent shift to targeting this species off Buenos Aires Province, careful monitoring needs to be undertaken. Further information is required from Brazil.
Zipper Sand skate <i>Psammobatis extenta</i>	Chiaramonte, G.	LC	2004	Endemic to the Southwest Atlantic from Cabo Frío, Brazil (22°56'S) to Patagonia, Argentina (45°S), this small skate is abundant in coastal waters off Uruguay and Argentina. This species is commonly caught and discarded by the coastal bottom trawlers operating in Buenos Aires Province (Argentina). While the conspecific <i>Psammobatis bergi</i> has recently become a target

				species in this fishery, the smaller (up to 31.3 cm total length (TL)), <i>P. extenta</i> is still discarded. The mass of <i>P. extenta</i> discarded by the coastal fishery from Puerto Quequén (Argentina), was low in relation to other batoid species, but it was the second most important batoid species discarded by number. The catch per unit effort (CPUE) of the total batoid catches did not change over the three year study period. However, species-specific trends are not available, and this, combined with the short time frame of the study prevents any clear changes in <i>P. extenta</i> abundance from being documented. This species is also taken as bycatch and discarded in other fisheries off Argentina, including those for hake and shrimp, and Patagonian bottom trawl fisheries. Females appear to be able to breed all year round. Due to its apparent abundance and probable high reproductive output (for a chondrichthyan) the species is assessed as Least Concern. However, given increasing fisheries pressure across its range careful monitoring needs to be undertaken. Further information is required from Brazil.
Shortfin Sand skate <i>Psammobatis normani</i>	Lamilla, J.	DD	2004	<i>Psammobatis normani</i> is a small, poorly known sand skate from off Argentina (in depths of 70-145 m) and around Guafo Island, Chile (in depths of 70-358 m). Probably more widely distributed in Chile than presently known. Its maximum reported size is 53.7 cm total length (TL) and nothing is known of its biology. It is taken as bycatch in the bottom trawl fisheries for kingclip fish <i>Genypterus blacodes</i> and hake <i>Merluccius australis</i> , but catch data is not available. Like many other South American skate species, further research is required to ascertain its distribution, biology and interactions with fisheries.
Smallthorn Sand skate <i>Psammobatis rudis</i>	Lamilla, J.	DD	2004	A poorly known small sand skate recorded from the continental shelf and slope from Bahía Blanca, Argentina to Guafo Island, Chile. Maximum size at least 44 cm total length (TL). Nothing known of its biology. It is taken as bycatch in the bottom trawl fisheries for kingclip fish <i>Genypterus blacodes</i> and hake <i>Merluccius australis</i> , but catch data is not available. Like many other South American skate species, further research is required to ascertain its biology and interactions with fisheries.
Bignose Fanskate <i>Sympterygia acuta</i>	Massa, A. & Hozbor, N.	VU (A2bd)	2004	A small inshore skate endemic to southern Brazil, Uruguay and northern Argentina occurring at 0-40 m depth. Its biology and ecology are poorly known. It was described as abundant off Brazil in the early 1980s, but trawl fishing in its habitat is intense and threatens the species. Off Buenos Aires Province, Argentina and Uruguay (34°-41°S), <i>Sympterygia acuta</i> is taken by the multi-species fleet that exploits the coastal demersal fish assemblage and has been landed since 1994. In Uruguay, this species is also one of the main targets of a bottom longline fishery. Landing statistics are unavailable for these fisheries because all species of batoids are recorded as "unidentified rays and skates". Data are not available on fishing impacts on this species off southern Brazil, although fishing pressure is also heavy along this coast. Off Argentina and Uruguay, biomass measured by research trawling decreased by 49% in the years 1994-1999, but recent data suggest that the biomass here was maintained between 1999-2003. The species is therefore assessed as Vulnerable A2bd, but may prove to be Endangered when more data becomes available. Species-specific information from all fisheries and continued monitoring of catches is essential to improve this assessment.
Smallnose Fanskate <i>Sympterygia bonapartei</i>	Massa, A. & Lamilla, J.	DD	2004	<i>Sympterygia bonapartei</i> is one of the most common elasmobranchs in the coastal and shelf waters (to 100 m) of the southern Southwest Atlantic. It is known from southern Brazil, Uruguay, northern Argentina and the Strait of Magellan (Chile). In Argentina, areas of abundance are associated with estuarine areas. The biology and ecology of this species is poorly known. Skates are becoming increasingly important in southwestern Atlantic fisheries. However, there

				is little information on the catch of this species in bycatch or targeted fisheries, and no information on the impact of fisheries on abundance. Until biological studies are undertaken and species-specific catch data are available for Argentina, Uruguay and Chile the species cannot be assessed beyond Data Deficient.
Shorttail Fanskate <i>Sympterygia brevicaudata</i>	Lamilla, J.	DD	2004	<i>Sympterygia brevicaudata</i> is a shallow water fanskate recorded from the Eastern South Pacific from Ecuador, Peru and north and central Chile. It is a small species, reaching at least 26 cm total length (TL) (mature female) and nothing is known of its biology. Probably captured as bycatch in inshore fisheries including bottom trawls targeting crustaceans as well as recreational fishing. Little information available to assess the species beyond Data Deficient at this time.
Filetail Fanskate <i>Sympterygia lima</i>	Lamilla, J.	DD	2004	<i>Sympterygia lima</i> is a shallow water (30-60 m) fanskate endemic to Chile. Maximum size is 62 cm total length (TL). There is only little information available on its biology. It is captured as bycatch in the bottom trawl fisheries of Valdivia, but specific catch data are unavailable. Its narrow depth distribution in shallow water makes this species potentially vulnerable to overexploitation. Insufficient information available to assess the species beyond Data Deficient at present.
Family Rajidae				
Thickbody Skate <i>Amblyraja frerichsi</i>	Lamilla, J. & Kyne, P.M.	DD	2004	A large bathydemersal skate recorded off Uruguay, Argentina and Chile. Off the Rio de la Plata (Uruguay/Argentina) recorded from depths of 720–2,609 m. Off Chile reported from depths of 800–2,500 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 <i>Dissostichus eleginoides</i> in the Pacific, and in the Atlantic, in bottom fish trap fisheries for the same species, as well as in trawls for Argentine hake <i>Merluccius hubbsi</i> . 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.
Common Skate <i>Dipturus batis</i>	Ellis, J., Walker, P., Dulvy, N.K. & Musick, J.M.	EN (A1abcd+2bcd) CR (A1abcd+2bcd) in Shelf Seas*	2000	This skate, the largest European rajid, was once an abundant constituent of the demersal fish community of north-west Europe. Fisheries data indicate that populations of <i>D. batis</i> have undergone an extremely high level of depletion in the central part of its range around the British Isles since the early 20th Century (the three generation period). It has been extirpated from certain areas, but is still caught in Scottish waters and along the shelf edge. Although landings appear stable in other parts of the species' NW Atlantic range, this is attributed to the redirection of fishing effort from shelf seas and enclosed seas (where heavily depleted populations are now Critically Endangered) into deeper water where previously unfished populations are now being taken. Fishing pressure on this species is unlikely to be reduced in future.
Blackspot Skate <i>Dipturus campbelli</i>	Smale, M.J.	NT	2004	Despite recent research surveys within the known area of occurrence of this endemic species, it appears to have a very limited and patchy distribution off the east coast of South Africa (Durban) and Mozambique (Barra Falsa). Although no data is available on trends in catches of this species, it is thought to be vulnerable to trawl fisheries occurring in the area. This together with its limited distribution and possible small population warrants enough concern to list this endemic skate as Near Threatened. Further studies are needed on biology, status and threats.
New Zealand Smooth Skate <i>Dipturus innominatus</i>	Francis, M.P.	NT	2003	Widespread throughout New Zealand, and frequent in shelf waters around South Island. Long life span (> 24 years) and late age at maturity (females 13 years) result in a long generation period and indicate low productivity. Trawl survey biomass indices in the main abundance area

				of east coast South Island show no trends, though there is evidence of inter-annual variation in catchability that may invalidate the time series. Expected to be introduced to the Quota Management System in October 2003. On this basis alone, the species would be assessed as Least Concern. However, its low productivity and vulnerability to capture before reaching maturity means that the species could quickly move towards a threatened category if management measures are inadequate to regulate fishing mortality at a sustainable level. It is therefore considered to be Near Threatened until the QMS is operational and CPUE data indicate that the population is stable.
Barndoor Skate <i>Dipturus laevis</i>	Dulvy, N.K.	EN (A1bcd)	2003	<p><i>Dipturus laevis</i> was previously assessed as Vulnerable under the 1994 Categories and Criteria (VU A1bcd). With better information available on this species, it is now reassessed as Endangered.</p> <p>The barndoor skate is highly vulnerable to exploitation because of its slow growth rate, late maturity, low fecundity and large body size. The slow life history exhibited by the barndoor skate would render it particularly vulnerable to decline under exploitation and would be associated with an elevated risk of extinction. Although never directly targeted, it was a bycatch of multispecies trawl fisheries on the Georges Bank, Scotian Shelf, Grand Banks and Labrador Shelf and is also taken on longlines. Catch rates of barndoor skates in USA waters <400 m within the centre of its latitudinal range on the southern shelf (<43°N) declined by 96-99% from mid-1960s to 1990s. While the severity of this decline would be considered grounds for listing as Critically Endangered, there are three reasons for a lower listing: fishing effort on the shelf area has declined in the last decade, the latitudinal and depth range of this species is considerably wider than previously thought, and numbers of juveniles now appear to be increasing not only in no-take zones on Georges Bank and Southern New England shelf but also in adjacent areas to the north and south and elsewhere. It also occurs up to 63°N in channels and deep slopes (>450 m depth), where less fishing occurs. There is no evidence for a decline in the newly discovered, northern and deepwater parts of the species' range, but fisheries have only recently moved into these areas and it is assumed that the population here is much smaller. The shallow-water section of the population is presumed to have, in the past, represented most of the global population and also the most productive section of the population. However, it should be noted that increases in trawl fishing effort and/or opening of no-take areas could lead to the decline of the barndoor skate in these areas.</p>
Rattail Skate <i>Dipturus lanceorostratus</i>	Smale, M.J.	DD	2004	This endemic skate is apparently a very rare species and is known from only three specimens from Mozambique (off the Limpopo river at approximately 435 m) despite fairly extensive research surveys in the area recently. Considered Data Deficient at this time, it may be found in deeper waters when these are surveyed more thoroughly. It could be threatened by trawl and longline fisheries off Mozambique.
Thintail Skate <i>Dipturus leptocaudus</i>	Rincon, G. & Mazzoleni, R.	DD	2004	Until recently, <i>Dipturus leptocaudus</i> was known from only a very small number of specimens caught off southern Brazil. However, recent records from the deepwater trawl squid fishery off Santa Catarina State are thought to be <i>D. leptocaudus</i> , thus this species (predominantly juveniles) is an apparently relatively common component of the bycatch from this fishery. Neonates with yolky bellies and disc widths 17.6-20.5 cm were captured, providing evidence of a local nursery ground (400-550 m depth) in the area being fished. However, it is highly likely that adults occupy deeper habitats, which are not being trawled (trawlers generally do not

				operate deeper than 600 m). Indeed, its distribution range on the mid and deep slope along Eastern South America may be much wider than currently known. Studies are required in order to correctly evaluate the impact of the squid fishery on the local population(s). At present since almost nothing is known of its biology and population status, the species is considered Data Deficient, but it must be noted that given its apparent restricted distribution and probable vulnerability to the increasing deepwater squid fishery, it may meet the criteria for Vulnerable in the near future.
New Zealand Rough Skate <i>Dipturus nasutus</i>	Francis, M.P.	LC	2003	Widespread throughout New Zealand, and common in inner shelf waters around South Island. Moderate life span (at least nine years) and age at maturity (females six years). Trawl survey biomass indices in the main abundance area of east coast South Island show no trends, though there is evidence of inter-annual variation in catchability that may invalidate the time series. Expected to be introduced to the Quota Management System in October 2003.
Slime Skate <i>Dipturus pullopunctatus</i>	Smale, M.J.	LC	2004	Although a large skate that probably has a slow growth rate and occurs in an area exploited by commercial boats trawling for hake, it is not caught in large quantities and its relatively wide distribution within its southern Africa range includes extensive areas of untrawlable ground. Thus the population is not considered under threat at present. However, the initiation of a longline fishery for hake that includes fishing in untrawlable grounds means that monitoring of catches is essential. In addition, more research is required to determine the life history characteristics of this species.
Prownose Skate <i>Dipturus stenorhynchus</i>	Smale, M.J.	DD	2004	An uncommon endemic species rarely sampled from the shelf edge and slope (253–761 m) in its known range from central Mozambique to South Africa. Considered Data Deficient because virtually nothing is known about this skate, which is recorded from only a few specimens. It may however be affected by trawling and longline fisheries. This species may be found to be more widespread in deeper waters when these are surveyed more thoroughly in the future, in which case further evaluation will be required.
Onefin Skate <i>Gurgesiella dorsalis</i>	Rincon, G.	VU (B1ab(v))	2004	A small, poorly known endemic skate, known from localised areas off Santa Catarina State north to Rio de Janeiro State, Brazil, at depths of 400–800 m. It may also occur in deeper water. Often captured in large numbers as bycatch by the bottom otter trawl fleet in the area, this deepwater species is likely to have a low intrinsic rate of increase, and poor resilience to depletion. Increased fishing effort for squid in its limited extent of occurrence (estimated at 18,000–20,000 km ²) is likely to affect the population. However, the squid fishery operates down to about 600 m, thus deeper water may provide some refuge for the species, although it does not appear to be abundant at the deeper end of its known bathymetrical range. The species is assessed as Vulnerable due to its restricted range, life history (as a deepwater species) and increasing fishing pressure (inferring a continuing reduction in the number of mature individuals). Its depth range and abundance in deeper water needs clarification.
Dusky Finless Skate <i>Gurgesiella furvescens</i>	Lamilla, J.	LC	2004	A deepwater skate species known from the Galapagos Islands, Peru and Chile at depths of 300–960 m. Reaches a maximum size of 56.8 cm total length (TL). Biology essentially unknown. Generally no fisheries in its deepwater habitat at present, but likely to be taken as bycatch if deepwater trawl fisheries develop and expand in this region.
African Dwarf Skate <i>Neoraja stehmanni</i>	Smale, M.J.	DD	2004	Only information on the taxonomy and distribution of this South African endemic skate has been published to date. Information on biology and life history patterns are currently unknown. This species seems to have a localized distribution on the slope in depths below 600 m (but has been recorded from 292–1,025 m). No threats currently identified, but further research is

				required to better define its distribution and to provide information on biology and ecology.
Big Skate <i>Raja binoculata</i> (See footnote 4)	Ellis, J. & Dulvy, N.K.	NT	2000	This large-bodied demersal skate occurs in the north-eastern Pacific, from California to Alaska, and is one of the three most important rajids fished in the southern part of its range. Population data are inadequate to determine its precise exploitation status. It is, however, one of the larger, slow maturing species of skate and its biological characteristics likely make it as susceptible to over-fishing of <i>Dipturus batis</i> and <i>D. laevis</i> .
Thornback Skate <i>Raja clavata</i>	Ellis, J. & Walker, P.	NT	2000	<i>Raja clavata</i> is one of the most abundant rajids in the North-eastern Atlantic and Mediterranean, and is an important component of mixed demersal trawl fisheries. It is also taken in set nets and targeted by recreational anglers. There is some evidence of decline in catch rates in NW European waters. A minimum landing size exists in certain inshore areas of the UK.
Smalleyed Skate <i>Raja microocellata</i>	Ellis, J.	NT	2000	<i>Raja microocellata</i> is restricted to the Atlantic coasts of Northwest Europe, from Gibraltar to the British Isles. It favours sandy bays and is only recorded as abundant at a few sites (e.g. Bristol Channel, UK and Bertheaume Bay, France). Given its restricted and patchy geographical distribution and localised abundance, however, local populations may potentially be vulnerable to over-fishing, habitat degradation and other anthropogenic disturbance.
Argus Skate <i>Raja polyommata</i>	Kyne, P.M. & Bennett, M.B.	DD	2003	A poorly known but apparently common small skate endemic to the eastern Australian outer shelf and upper slope. Areas of its range are subject to intensive trawling where surveys have revealed it as the most common elasmobranch bycatch species. Mortality from trawling may be high and needs further investigation. Current research into life history and fisheries interactions in Queensland may yield more data on the species. However, at this time the species cannot be assessed beyond Data Deficient.
Maugean Skate <i>Raja</i> sp. nov. L [Last & Stevens, 1994]	Gledhill, D. & Last, P.R.	EN (B1+2c)	2000	Very little is known of this primitive skate, which was discovered just over a decade ago. It is only recorded from Bathurst and Macquarie Harbours on the Tasmanian west coast, which may contain two distinct populations. Its range in these estuary systems is not known, but is likely to be small, appearing to favour the shallow upper regions. There are no scientific data relating to the biology, distribution or the environmental requirements of this animal.
Bigthorn Skate <i>Rajella barnardi</i>	Smale, M.J.	LC	2004	An African endemic, the wide depth range (approximately 100–800 m) and wide distribution (west coast of Africa) of this species suggest that it is not yet threatened by commercial trawling off Southern Africa, hence the present assessment of Least Concern. However, there is concern regarding the impact on its population by European Union trawl fisheries off the west coast of Africa and this should be monitored by onboard observers.
Munchkin Skate <i>Rajella caudaspinosa</i>	Smale, M.J.	NT	2004	The smallest species of the genus <i>Rajella</i> in this region (58 cm total length (TL), 32 cm disc width (DW)), this skate is endemic to Southern Africa (Namibia and South Africa) in 310–520 m, occurring most commonly in areas heavily trawled for hake off the west coast of South Africa. Although there are no data on population size or trends, research trawl surveys indicate it is uncommon. This together with heavy fishing pressure in much of its known range leads this skate to be assessed as Near Threatened with a need for further information on life history, population status and details of specific threats.
Ghost Skate <i>Rajella dissimilis</i>	Smale, M.J.	LC	2004	An apparently uncommon or rare little-known endemic skate (southern Namibia to Cape Point, South Africa). However, its known range (400–500 m, some records >700 m) includes depths below those of current commercial trawl fisheries, hence it is assessed as Least Concern. It is likely to be more common in areas deeper than those sampled to date, however the situation should be monitored given its apparent limited range and the potential threat of expanding

				deepwater trawl fisheries in the region.
Leopard Skate <i>Rajella leopardus</i>	Smale, M.J.	LC	2004	A poorly known southern African endemic skate known from Namibia and South Africa. Its depth range (300-1,000 m), relatively wide distribution and common occurrence suggest that it is not yet threatened by commercial trawling. However, the situation must be monitored, particularly given the potential threat of expanding deepwater trawl fisheries in the region.
Blackish Skate <i>Rajella nigerrima</i>	Lamilla, J.	LC	2004	The blackish skate is endemic to the Ecuador, Peru and Chile in the Southeast Pacific. It is a deepwater species recorded from the continental slopes at depths of 590–1,000 m. Reaches a maximum size of 45.7 cm total length (TL). Nothing known of its biology. Generally no fisheries in its deepwater habitat at present, but likely to be taken as bycatch if deepwater trawl fisheries develop and expand in this region.
Smoothback Skate <i>Rajella ravidula</i>	Smale, M.J.	LC	2004	Although this skate is apparently rare and likely endemic to the west coast of Africa, most specimens have been caught at depths >700 m during research sampling. Thus commercial trawling is not likely to be impacting this species at present. However, the situation must be re-evaluated as trawl operations expand into deeper waters. Further research on life history of this poorly known species is also required.
Brazilian Skate <i>Rajella sadowskii</i>	Lamilla, J.	DD	2004	A little-known deepwater skate recorded from off Brazil and Chile. Holotype was taken at a depth of 1,200 m. Maximum observed size off Chile 75 cm total length (TL). Nothing known of its biology. Taken as bycatch of artisanal longline fisheries for Patagonian toothfish <i>Disostichus eleginoides</i> , however, specific catch data are not available. Insufficient information to assess the species beyond Data Deficient.
Family Anacanthobatidae				
Spotted Legskate <i>Anacanthobatis marmoratus</i>	Smale, M.J.	DD	2004	A small, apparently uncommon Southern African endemic species rarely sampled from the shelf edge and slope and recorded from only a few specimens. Its known range is from Durban, South Africa to southern Mozambique, in depths of 230–322 m, but it may be found to be more widespread in deeper waters when these are surveyed more thoroughly in the future. Virtually nothing is known about this skate and it is not possible to assess it beyond Data Deficient without further study and information.
Black Legskate <i>Anacanthobatis ori</i>	Smale, M.J.	DD	2004	A small, apparently rare Western Indian endemic skate sampled from the deep slope off Mozambique (1,000–1,725 m) and Madagascar. However, these depths are extremely poorly sampled in this region, and the species may be found to be more widespread when deeper waters are surveyed more thoroughly in the future. Virtually nothing is known about this skate and it is not possible to assess it beyond Data Deficient without further study and information.
Family Urolophidae				
Kapala Stingaree <i>Urolophus</i> sp. nov. A [Last & Stevens, 1994]	Kyne, P.M. & Bennett, M.B.	NT	2003	<i>Urolophus</i> sp. nov. A is a small stingaree endemic to the east coast of Australia, where it occupies a relatively narrow bathymetric distribution (18–85 m) in heavily trawled areas. Little is known of its biology except that fecundity is usually limited to two young. Females regularly abort embryos when captured. Reported declines in catches of sympatric urolophid species in New South Wales suggest an inability to withstand fishing pressure. Given its level of endemism, restricted bathymetric range, intense fishing pressure throughout its range, low fecundity and aborting behaviour, together with declines observed in sympatric species, the species is categorised as Near Threatened, nearly meeting criterion A2d for Vulnerable.
Family Urotrygonidae				

Chilean Round Stingray <i>Urobatis marmoratus</i>	Lamilla, J.	DD	2004	A virtually unknown species, known only from the original description from Quinteros (Chile). Size in the original description is 38.5 cm total length (TL). This species may have an extremely restricted range and as such may be at threat if fisheries are impacting upon this range. Further research is required. No information available on detailed distribution, habitat, ecology or threats, and as such cannot be assessed beyond Data Deficient at this time.
Thorny Round Stingray <i>Urotrygon chilensis</i>	Lamilla, J.	DD	2004	A very poorly known Eastern Pacific urotrygonid ray known from the Gulf of California through Central America south to Peru. Maximum size reported at 42cm TL. No information available on populations, ecology or threats, and thus cannot be assessed beyond Data Deficient at this time.
Smalleyed Round Stingray <i>Urotrygon microphthalmum</i>	Rosa, R.S.	LC	2004	A small, tropical, coastal stingray from the Western Atlantic occurring from Venezuela to northern Brazil in shallow waters (common <2 m and not reported >25 m). Although no population studies are currently available, the species is apparently not threatened due to its small size (approximately 25 cm total length (TL), 13 cm disc width) and abundance. It is common in the Orinoco River Delta of Venezuela, is abundant off Maranhão State, Brazil and is commonly captured in beach seining along the coast of Paraíba State, Brazil. Regulations should be introduced to ensure that individuals taken as bycatch are released.
Family Potamotrygonidae				
Shorttailed River Stingray <i>Potamotrygon brachyura</i>	Drioli, M. & Chiaramonte, G.E.	DD	2000	One of the seven nominal species of <i>Potamotrygon</i> of the Paraná - Uruguay river drainages, southern South America. A poorly known endemic and moderately common freshwater ray, its status is uncertain due to the sparse life history and population data available. Further study and re-assessment in the near future is highly recommended for this ray, which is harpooned for food, has a limited geographic range and a freshwater habitat facing major impacts.
Bigtooth River Stingray <i>Potamotrygon henlei</i>	Rincon, G.	LC	2004	This endemic freshwater stingray was assessed as Data Deficient in the 2000 Red List. Improved information has resulted in the species being downlisted to Least Concern. <i>Potamotrygon henlei</i> is endemic to the Tocantins-Araguaia River Basin, Brazil, with its primary distribution along the Rio Araguaia and lower Rio Tocantins. This species has not been negatively affected by the damming of the lower Tocantins, in fact there has been a significant population increase in the Tucuruí Reservoir (probably due to an increase in prey), hence this updated assessment of Least Concern. However, given that the species is collected in the unregulated ornamental fish trade, is subject to persecution in some areas and may be affected in other parts of its range by habitat degradation due to illegal mining activities, ongoing monitoring of these threats and its population status are required.
Xingu River Ray <i>Potamotrygon leopoldi</i>	Rosa, R.S. & Araújo, M.L.G.	DD	2000	A rare river ray, possibly endemic to the Xingu River drainage in Brazil where freshwater habitat is threatened by illegal mining activity. It is caught for food by natives and exported in large numbers to the ornamental fish trade. There are no life history or population data for this poorly known freshwater ray. Further study and a new assessment in the near future is highly recommended, due to the limited geographic range and threatened habitat of this ray.
Ocellate River Stingray <i>Potamotrygon motoro</i>	Drioli, M. & Chiaramonte, G.E.	DD	2000	The most abundant and widespread of the seven nominal species of <i>Potamotrygon</i> endemic to southern South America. Although this species is taken for food and juveniles enter the ornamental fish trade, it is poorly known with sparse life history and population data available. Further study and a new assessment in the near future is highly recommended, due to the limited geographic range and the major impacts to the freshwater habitat of this species.

Black River Stingray <i>Potamotrygon pauckei</i>	Drioli, M. & Chiaramonte, G.E.	DD	2000	One of the seven nominal species of <i>Potamotrygon</i> endemic to southern South America. This brackish water ray is poorly known and life history and population data are lacking. Further studies and a new assessment in the near future are highly recommended, due to the limited geographic range and the major impacts affecting river habitat of this species.
Parana River Stingray <i>Potamotrygon schuemacheri</i>	Charvet-Almeida, P. & de Almeida, M.P.	DD	2004	A small, poorly known, freshwater stingray found in the Paraná and Paraguay River basins in southern South America. It is possibly threatened by habitat loss and degradation from agriculture and infrastructure development due to its restricted geographical distribution. It does not seem to be taken for the ornamental trade, or as a food source. Research actions and habitat conservation measures are required for this species given the lack of information and its narrow range. A new assessment in the near future is highly recommended when further information is available.
Raspy River Stingray <i>Potamotrygon scobina</i>	de Almeida, M.P. & Charvet-Almeida, P.	DD	2004	A medium to large-sized, moderately common endemic freshwater stingray, widely distributed in the mid-lower Amazon basin (main area of distribution is the lower Amazon basin). This species presents one of the highest chromatic variations and highest fecundity (up to 16 young per litter) among the potamotrygonid rays. Although it is known that this species is taken for food and ornamental purposes in some regions, only sparse life history and population data are available. Further studies and a new assessment are highly recommended in the near future, due to the existence of a number of identified and potential threats, including habitat degradation, persecution, pollution, ornamental trade and fishery impacts.
Blue-spotted Fantail Ray <i>Taeniura lymma</i>	Compagno, L.J.V.	NT	2000	Although very wide-ranging and common, this species is subject to human-induced problems because of capture in intensive inshore fisheries in most places where it occurs, its attractiveness for the marine aquarium fish trade (small size and brilliant colour pattern), and, especially, by widespread destruction of its reef habitat.
Family Dasyatidae				
Shorttail (Smooth) Stingray <i>Dasyatis brevicaudata</i>	Duffy, C.A.J. & Paul, L.J.	LC	2003	A widespread temperate Southern Hemisphere species recorded from New Zealand, Australia and southern Africa, which is common to abundant throughout its range. Although taken in a wide variety of fisheries, it is usually released or discarded. It appears to survive capture and release well, and is assessed as Least Concern. In New Zealand, this species is prohibited as a commercial target species in quota management areas encompassing the core of its distribution.
Estuary Stingray <i>Dasyatis fluviorum</i>	Kyne, P.M., Pollard, D.A. & Bennett, M.B.	VU (A2bcd+3cd+4bcd)	2003	<i>Dasyatis fluviorum</i> is recorded from the east and north coasts of Australia and the southern coast of New Guinea. Very little is known of its biology and ecology. Once common, there is considerable anecdotal evidence of a significant range contraction and decline in abundance for this species in the waters of New South Wales and southern Queensland, Australia. Historic accounts report that <i>D. fluviorum</i> was an extremely common species in the bays and estuaries of southern Queensland and New South Wales. It has not been reported from Port Jackson and Botany Bay, New South Wales, where it was once common, since the 1880's and is now uncommon anywhere along the central and northern coast of New South Wales. The southern limit of the species is uncertain. The species also appears to be declining in the estuaries of southern Queensland, where it was also once common. This decline is probably the combined result of a number of threatening processes, including, bycatch in commercial fisheries, persecution by shellfish farmers, destruction of incidental catches by recreational fishers and during some commercial fishing activities, and habitat degradation and loss due to foreshore development. The species appears particularly vulnerable to such human activities due to its

				reliance on shallow tidal and mangrove habitats, particularly within estuaries and rivers. <i>D. fluviatorum</i> is assessed as Vulnerable (VU A2bcd+3cd+4bcd) given its decline in range and abundance, decline in quality of habitat and continuing threats. Habitat protection, fisher education and research are priorities for its recovery.
Smooth Freshwater (Niger) Stingray <i>Dasyatis garouaensis</i>	Compagno, L.J.V.	VU (B1+2cde, C2b)	2000	This species is confirmed from only three West African rivers, and has declined or disappeared from parts of its original centre of abundance. Population declines will likely continue as a result of expanding fisheries and environmental degradation, and there is no direct or indirect protection for this species or its habitat.
Longnose Stingray <i>Dasyatis guttata</i>	Rosa, R.S. & Furtado, M.	DD	2004	A small marine and brackish water stingray distributed from the southern Gulf of Mexico and the West Indies south to Brazil. This is the most common ray species in artisanal fisheries in some states of Northeastern Brazil (Maranhão and Paraíba). Also taken as bycatch in shrimp trawls (Ceará) and a targeted species of sports surf fisheries (Paraíba). For some states, such as Ceará, Paraíba and Bahia, there are increasing fishing pressures on the species, but no population assessments based on these fisheries. Monitoring of artisanal fisheries directed towards this species, protection of breeding and nursery grounds, population studies and more information from its range outside Brazil are all required before the conservation status of the species can be accurately assessed.
Mekong Freshwater Stingray <i>Dasyatis laosensis</i>	Compagno, L.J.V.	EN (A1cde+2cde, B1+2ce)	2000	This obligate freshwater stingray has a limited distribution in just two rivers (Mekong and Chao Phraya). It is under heavy (incidental) fishing pressure and, more importantly, it is being affected by habitat degradation on a massive scale.
Brazilian Large-eyed Stingray <i>Dasyatis marianae</i>	Rosa, R.S. & Furtado, M.	DD	2004	A recently described, reef-associated stingray, endemic to Brazil. Little information is available on its biology and no population assessments are available. It may be more widespread in Brazil than outlined in the original description (Maranhão to Southern Bahia). The species is taken in small numbers in artisanal fisheries and also for the ornamental fish trade. Further threats exist from indirect impacts on coral reef systems. This species occurs in a number of marine protected areas but information is required on catches in the artisanal and ornamental fisheries. At present the species cannot be assessed beyond Data Deficient.
Giant Freshwater Stingray <i>Himantura chaophraya</i>	Compagno, L.J.V. & Cook, S.F.	VU (A1bcde+2ce) CR (A1bcde+2ce) in Thailand	2000	This possibly obligate freshwater species is recorded from several rivers in South East Asia and northern Australia and is probably unrecorded in others. The potential for exchange between these subpopulations is presumably very limited. The species has been and will continue to be adversely affected in much of its range by a complex of factors including directed and bycatch fisheries and habitat alteration or destruction. The possibility of extinction in the wild for some subpopulations is considered extremely high, but the status of those in Australia is probably favourable.
Ganges Stingray <i>Himantura fluviatilis</i>	Compagno, L.J.V.	EN (A1cde+2cde, B1+2c)	2000	This giant stingray as currently known (from a very few specimens, none of which are in museums at present) has a limited distribution, restricted to the Ganges River system, where it is threatened by fisheries, pollution and habitat degradation. There is a difference of nomenclatural opinion between systematists as to the correct name for this species; regardless, it is under serious threat.
Marbled Freshwater Stingray <i>Himantura oxyrhyncha</i>	Compagno, L.J.V.	EN (B1+2c)	2000	This very rare species is known from only five specimens in museum collections worldwide, three being the syntypes from Phnom Penh, Cambodia. It is known to occur from only three or four riverine systems. It is confined to tropical freshwater habitats that are under intensive threat from fisheries, pollution, logging in the catchment areas and river engineering projects, and is a desirable aquarium species. May be a species complex, with two known species, both under

				similar threat.
White-edge Freshwater Whipray <i>Himantura signifer</i>	Compagno, L.J.V.	EN (B1+2c)	2000	This very rare species is known from only a few specimens and four riverine systems (although it may also be present but unrecorded in other rivers). It is confined to tropical freshwater habitats that are under intensive threat from fisheries, pollution, logging in the catchment areas and river engineering projects.
Porcupine Ray <i>Urogymnus asperrimus</i>	Compagno, L.J.V.	VU (A1bd, B1+2bcd)	2000	Although wide-spread in the Indian Ocean and Indo- West Pacific, this species does not seem to be regularly recorded, and has certainly significantly decreased in abundance in parts of the centre of its range for which comparative data are available.
Pinchusion Ray <i>Urogymnus ukpam</i>	Compagno, L.J.V.	EN (B1+2abcd)	2000	This species is uncommon to rare, with less than ten specimens in museum collections, most recently collected in any numbers from the lakes of Gabon or adjacent rivers. Described as being abundant in the rivers of "Old Calabar" in the last century, but seldom reported since.
Family Myliobatidae				
White-spotted Eagle Ray <i>Aetobatus narinari</i>	Ishihara, H.	DD	2000	A very widely distributed, relatively fecund, schooling species. This ray is taken as bycatch in much of its range in tropical and warm temperate seas. No data available on population trends.
Banded Eagle Ray <i>Aetomylaeus nichofii</i>	Kyne, P.M., Compagno, L.J.V. & Bennett, M.B.	VU (A2d+3d+4d)	2003	<i>Aetomylaeus nichofii</i> is a wide-ranging but rare, little known, Indo-Pacific eagle ray. It is marketed throughout its range, except in Australia. South East Asian market catches are low and have declined, and large regions of the species' range have been subject to intensive (and increasing) trawling for a considerable time. Given actual (and increasing) levels of exploitation, rarity, low fecundity and global declines in catches of batoids the species is listed as Vulnerable (VU A2d+3d+4d). Research urgently needs to address biology and levels of abundance.
Bat Ray <i>Myliobatis californicus</i>	Cailliet, G.M.	LC	2000	This abundant eastern Pacific coastal ray is relatively fast-growing and fecund. It is not a major fisheries target, being taken primarily by recreational anglers and only secondarily by commercial fishermen. There are no reliable population estimates, catch data are unreliable and catch per unit effort do not exist. Adequate life history data exist for California and Oregon waters, a sizeable portion of its range and the main centre of distribution for this species, to indicate that there does not appear to be a threat to the US population.
New Zealand Eagle Ray <i>Myliobatis tenuicaudatus</i>	Duffy, C.A.J.	LC	2003	A common coastal species, <i>Myliobatus tenuicaudatus</i> is endemic to New Zealand. Little is known of its reproductive biology, but it may be relatively productive (one captive female gave birth to 20 pups). Although taken in a wide variety of fisheries this species is usually released or discarded, and appears to survive capture and release well. It is prohibited as a commercial target species in quota management areas encompassing the core of its distribution.
Family Rhinopteridae				
Brazilian Cownose Ray <i>Rhinoptera brasiliensis</i>	Vooren, C.M. & Lamónaca, A.F.	EN (A2abcd+3bcd+4 abcd; B1ab(i,iii,v))	2004	<i>Rhinoptera brasiliensis</i> is an inshore endemic cownose ray restricted to about 1,800 km of coastline between Rio de Janeiro and Rio Grande do Sul States in Brazil. The species is threatened by intense fishing activities throughout its restricted area of shallow coastal habitat. It is viviparous with only one embryo per litter, and as such is highly vulnerable to recruitment overfishing. In the southernmost 700 km of its distribution, off Rio Grande do Sul, the species occurred as a summer migrant in coastal waters at depths of <20 m, where it was caught and discarded in large numbers during the 1980s by the summer beach seine fishery, with catches of up to 330 individuals in a single haul. Fishing with bottom trawl has been intense in this southern area from the 1980s onwards, although the beach seine fishery is now minor due to serious catch declines. In summer 2002/2003, during three months of surveying the shore-based fishery, the species was no longer caught. It is suspected that the species has been

				extirpated by intensive fishing in the restricted area of its southern summer habitat and/or by fishing further north in the area from which come the summer migrants. The present situation of <i>R. brasiliensis</i> in the central and northern parts of its range is not known, however fishing is intense throughout the range and declines in those areas are inferred. Declines are likely to continue as fishing proceeds without restriction. Its restricted distribution, very low fecundity, apparent extirpation from the southern part of its range and intensive fishing across its entire range warrant at least an Endangered assessment. It may prove to be Critically Endangered with further surveys, which are a priority.
Family Mobulidae				
Manta Ray <i>Manta birostris</i>	Ishihara, H.	DD <i>VU (A1b) in the Gulf of California, west coast of Mexico, South China Sea and Sulu Sea*</i>	2001	This common and widespread large coastal plankton-feeding ray is very widely distributed in tropical shelf waters and around oceanic islands. The species is highly vulnerable due to its life history, giving birth to just one very large pup every two or three years. There are no target fisheries in most parts of its range, and bycatch is rare under the present fishing methods in use world-wide. Unfished subpopulations are not considered threatened. However, wherever there are fisheries the species quickly becomes vulnerable, population declines have been observed where target fishing has taken place, and there is a commercial market for them in various places of the world. Reportedly now very scarce in the Gulf of California. Populations will rapidly decline unless the fisheries are carefully managed. More data on population status is required to assess the species' conservation status.
Pygmy Devilray <i>Mobula eregoodootenkee</i>	Pierce, S.J. & Bennett, M.B.	NT <i>LC in Australia*</i>	2003	<i>Mobula eregoodootenkee</i> is locally common within its wide tropical Indo-west Pacific and northern Indian Ocean distribution. However, little is known about its biology and ecology, although inference from related <i>Mobula</i> species suggests this species is likely to have a low reproductive output. <i>Mobula eregoodootenkee</i> is likely to be a bycatch component of several fisheries through entanglement in nets, with much of this catch unreported. It is marketed in Thailand and probably elsewhere in South East Asia. Fishing pressure could severely impact this species, and given the lack of quantitative data available it is prudent to assign the species with an assessment of Near Threatened (close to Vulnerable A3d) until its population is otherwise proven to be stable. This species is of no commercial value in Australia and is not recorded as a catch in any domestic commercial fisheries. At this low level of exploitation its population is likely to be stable, and no immediate threats to its survival are apparent, thus the species is assessed as Least Concern in Australia.
Japanese Devilray <i>Mobula japonica</i>	White, W.T.	NT <i>DD in Australia*</i>	2003	<i>Mobula japonica</i> is highly susceptible to gillnets and is a common component of the inshore pelagic tuna gillnet fishery in Indonesia (probably elsewhere also) where the flesh and gill rakers are utilized. Target fisheries for whale sharks and mantas in South East Asia are also likely to be catching a significant number of this species. Due to the high levels of exploitation in some regions, especially South East Asia, this species almost qualifies for the Vulnerable criteria of A2d, A3d and A4d. However, little species composition data for this region is available so there is no information on the effects of such exploitation. Although devilrays commonly occur near the surface and are thus highly susceptible to the surface-set tuna gillnets, the habitat utilized is quite extensive. <i>Mobula japonica</i> is assessed as Near Threatened globally but Data Deficient in Australia based on only a limited number of specimens from this country.
Giant Devilray <i>Mobula mobular</i>	Notarbartolo di Sciara, G.	VU (A1cd)	2000	This huge plankton feeding ray is the largest of the genus <i>Mobula</i> . It has a very low reproductive capacity (giving birth to a single huge pup at unknown intervals) and a limited range in offshore deepwaters of the Mediterranean (and possibly adjoining North Atlantic waters). Its

				Mediterranean population is suspected to have declined as a result of bycatch mortality and declining habitat quality.
Order Heterodontiformes				
Family Heterodontidae				
Horn Shark <i>Heterodontus francisci</i>	Cailliet, G.M.	LC	2000	The life history and growth rates of this common oviparous eastern Pacific coastal shark are poorly known, but it appears to be a productive species. Horn sharks are not targeted either by commercial or recreational fisheries, although there is some incidental catch, and they reproduce well in captivity for public aquarium display. There are no known threats to the population.
Crested Horn Shark <i>Heterodontus galeatus</i>	Kyne, P.M. & Bennett, M.B.	LC	2003	An uncommon heterodontid shark restricted to relatively shallow water (0–93 m) and endemic to the eastern Australian states of Queensland and New South Wales. It is considered rare, particularly when compared with the sympatric <i>Heterodontus portusjacksoni</i> . Little information is available on its life history. The species is not targeted commercially, and incidental capture, recreational fishing and protective beach meshing programs are not significantly impacting. Post-capture survivorship appears high. Although rare there are no current threats to the species. However, given this apparent rarity, further research and close monitoring of catches is necessary.
Port Jackson Shark <i>Heterodontus portusjacksoni</i>	Simpfendorfer, C.A.	LC	2000	This abundant shark is endemic to Australian waters. There is currently no evidence to suggest that Port Jackson shark populations are at risk from human impacts. Although caught in commercial fisheries in substantial quantities, most are returned to the water alive. Sports fishers and the aquarium trade also take small numbers. Habitat modification and other environmental factors do not appear to be a threat to the health of populations.
Galapagos Bullhead Shark <i>Heterodontus quoyi</i>	Kyne, P.M., Rivera, F. & Leandro, L.	DD	2004	A poorly known, primarily nocturnal, tropical and warm-temperate hornshark endemic to the coast and offshore islands of Peru and the Galapagos Islands in the Southeast Pacific. Reaches a maximum size of 105 cm total length (TL). Oviparous, but little else known of its biology. Protected in the Galapagos Marine Reserve where it is not common and has an apparent limited distribution in suitable habitat (Rivera, unpublished data). While not presently fished in the Galapagos the apparent limited population size places this possible subpopulation of the species in a vulnerable position if it began to be captured here. This species is not of interest in commercial fisheries, but is presumably taken as bycatch by inshore fisheries elsewhere in its known range; however, little information is available. Research is required (taxonomy, ecology, bycatch, habitat) to accurately assess its conservation status.
Whitespotted Bullhead Shark <i>Heterodontus ramalheira</i>	Ebert, D.A.	DD	2004	A rare and little-known benthic shark of the outer continental shelf and uppermost slope of southern and East Africa and the eastern Arabian Peninsula, unusual for the family Heterodontidae in being a relatively deepwater species found at 40-275 m, with most records below 100 m and from trawler hauls. Presumably taken as bycatch in demersal trawl fisheries. This species is known from only a very few records within its distributional range and virtually nothing is known of its biology.
Zebra Horn Shark <i>Heterodontus zebra</i>	Barratt, P.J. & Cavanagh, R.D.	LC	2003	A wide-ranging and apparently common shallow-water Western Pacific species. Although of little interest to commercial fisheries, <i>Heterodontus zebra</i> is caught as bycatch of demersal trawlers and possibly other fisheries, and could be under some threat from destructive fishing practices and habitat degradation in Indonesia. However, this species is common within its range, is probably relatively fecund (an oviparous species) and is assessed as Least Concern

				because there seem to be no major threats to its populations at the present time.
Order Orectolobiformes				
Family Parascylliidae				
Collared Carpet Shark <i>Parascyllium collare</i>	Heupel, M.R.	LC	2003	<i>Parascyllium collare</i> is a little-known small shark endemic to the subtropical to temperate coast of eastern Australia. Although not targeted by fisheries, this hard bottom-living species is commonly taken as bycatch and resides in areas of heavy trawling effort where many commercial species have declined significantly. An assessment of Least Concern is appropriate as this species is not commercially targeted, is typically discarded and is believed to have high survival rates. However, further information should be collected concerning the status of this species as bycatch in trawl fisheries.
Rusty Carpet Shark <i>Parascyllium ferrugineum</i>	Heupel, M.R.	LC	2003	<i>Parascyllium ferrugineum</i> is a southern Australia endemic with a reasonably wide geographic and bathymetric distribution. Although little is known of this species, it is not targeted by fisheries. Due to its size and depth range, it is unlikely to be largely impacted as a bycatch species in the trawl and gillnet fisheries this area.
Ginger Carpet Shark <i>Parascyllium sparsimaculatum</i>	Heupel, M.R.	DD	2003	A largely unknown species, endemic to a very small area in the southeastern Indian Ocean off the coast of Western Australia. This species is recorded from only three specimens and its biology is unknown. Further data are required to assess this population fully. Due to its limited distribution and apparently small population size this species may be threatened, but current data do not provide conclusive evidence of the conservation status of <i>Parascyllium sparsimaculatum</i> .
Varied Carpet Shark <i>Parascyllium variolatum</i>	Heupel, M.R.	LC	2003	<i>Parascyllium variolatum</i> is a southern Australia endemic with a reasonably wide geographic and bathymetric distribution. Although little is known of this species, it is not targeted by fisheries. Due to its size and depth range, it is unlikely to be largely impacted as a bycatch species in the trawl and gillnet fisheries this area.
Family Brachaeluridae				
Blind Shark <i>Brachaelurus waddi</i>	Kyne, P.M. & Bennett, M.B.	LC	2003	<i>Brachaelurus waddi</i> is endemic to the east coast of Australia. No detailed information is available on current population trends, however, it is a relatively common species. It is not targeted commercially or recreationally, and is likely to be only a minor component of fisheries bycatch. There is little information available on its biology or ecology but it appears to be a hardy species, capable of surviving out of water for extended periods; thus post-capture survivorship may be high. It is popular in the marine aquarium trade although current levels of exploitation are unknown. More research is needed, but since there are currently no significant threats to its viability it is assessed as Least Concern.
Colclough's Shark <i>Heteroscyllium colcloughi</i>	Compagno, L.J.V., Last, P.R. & Stevens, J.D.	VU (C2b)	2000	Fewer than twenty specimens of this small, attractive but poorly known shark are recorded, mostly from inshore waters of Moreton Bay. This shark seems to be unabundant as far as is known despite coverage of available habitat. As presently known it has an extremely limited geographic and bathymetric range off Queensland and occurs in waters that are heavily utilized by people and which are subjected to intensive fisheries.
Family Orectolobidae				
Tasselled Wobbegong <i>Eucrossorhinus dasypogon</i>	Pillans, R.D.	NT	2003	A little known, but possibly common, reef wobbegong with a wide distribution across northern Australia, Indonesia and Papua New Guinea. In Australia, there are no targeted fisheries and it does not appear in commercial shark or trawl fisheries. A considerable section of its habitat is

				protected in the Great Barrier Reef Marine Park. However, throughout the rest of its range this species is threatened by extensive coral reef habitat destruction (pollution and dynamite fishing), as well as expanding fisheries. This wobbegong is assessed as Near Threatened due to suspected significant population declines having occurred and predicted to continue within a large proportion of its range.
Spotted Wobbegong <i>Orectolobus maculatus</i>	Pollard, D.A., Gordon, I., Flaherty, A. & Pogonoski, J.J.	NT <i>VU (A2b) in New South Wales*</i>	2003	Probably an Australian endemic (other locality records unconfirmed, pending taxonomic review). A biologically vulnerable low-fecundity species, apparently territorial (site-attached) within its shallow bathymetric range. Caught in commercial and recreational fisheries, as a target species and as bycatch. Historic catch data are aggregated with <i>Orectolobus ornatus</i> , but serious declines (more than 60% between 1990-2000) for these two species combined are documented for the east coast (New South Wales), where the population has been assessed as Vulnerable, and where there is still no management plan implemented. Catch levels appear to be low and stable in southern and western Australia, however, given the declines on the east coast due to its vulnerability to exploitation, this species is assessed as Near Threatened throughout the rest of its range. More information is needed on population structure, life history and ecology in order to develop management policies and re-assess conservation status.
Banded Wobbegong <i>Orectolobus ornatus</i>	Pollard, D.A., Gordon, I., Flaherty, A. & Pogonoski, J.J.	NT <i>VU (A2b) in New South Wales*</i>	2003	Probably an Australian endemic (other locality records unconfirmed, pending taxonomic review). A biologically vulnerable low-fecundity species, apparently territorial (site-attached) within its shallow bathymetric range. Caught in commercial and recreational fisheries, as a target species and as bycatch. Historic catch data are aggregated with <i>Orectolobus maculatus</i> , but serious declines (more than 60% between 1990-2000) for these two species combined are documented for the east coast (NSW), where the population has been assessed as Vulnerable, and where there is still no management plan implemented. Catch levels appear to be low and stable in southern and western Australia, however, given the declines on the east coast due to its vulnerability to exploitation, this species is assessed as Near Threatened throughout the rest of its range. More information is needed on population structure, life history and ecology in order to develop management policies and re-assess conservation status.
Northern Wobbegong <i>Orectolobus wardi</i>	Pillans, R.D.	LC	2003	A small endemic wobbegong with a wide distribution in shallow water across northern Australia. Little is known of its biology. There are no fisheries for this species and it does not appear in commercial shark or trawl fisheries in Northern Australia.
Western Wobbegong <i>Orectolobus</i> sp. nov. A [Last & Stevens, 1994]	Simpfendorfer, C.A. & McAuley, R.B.	LC	2003	This species is endemic to approximately 1,550 km of the Western Australia coastline, with a relatively small range relative to other species of wobbegongs. However, it is common within this area and is regularly caught in demersal gillnets and rock lobster pots. In both fisheries it is typically discarded alive. As a result there appears to be no impact on the population and it is assessed as Least Concern.
Cobbler Wobbegong <i>Sutorectus tentaculatus</i>	Simpfendorfer, C.A.	LC	2003	<i>Sutorectus tentaculatus</i> is a common southwestern Australian endemic species occurring in inshore waters around rocky reefs and in weedy areas. It is caught occasionally by demersal gillnet fishers throughout its range in Western Australia, but is normally discarded alive. It is also taken by recreational anglers fishing around reefs for teleost species. At present there appears to have been no significant impact on the population.
Family Hemiscylliidae				
Grey Bamboo Shark <i>Chiloscyllium griseum</i>	Lisney, T.J. & Cavanagh, R.D.	NT	2003	The reproductive and population biology of this small inshore species is poorly known, and it fails to meet any of the criteria for Vulnerable due to insufficient data. However, this species is assessed as Near Threatened as it is regularly taken in fisheries off Pakistan, India and

				Thailand, and is likely to be threatened by population decline resulting from overfishing, destructive fishing practices and habitat modification, including the damage and destruction of coral reefs. Such threats are likely to increase in the future; there is a need for survey and appraisal of the status of this species.
Slender Bamboo Shark <i>Chiloscyllium indicum</i>	Barratt, P.J., Cavanagh, R.D. & Kyne, P.M.	NT	2003	<i>Chiloscyllium indicum</i> is likely to be threatened by overfishing, destructive fishing practices and habitat modification, including the damage and destruction of coral reefs throughout much of its range. This species is regularly taken in inshore fisheries in India, Sri Lanka and Thailand where it is utilized for food. Virtually nothing is known of the biology of this small, sluggish, bottom dwelling shark. However, although common within parts of its range, it is assessed as Near Threatened, reflecting concern that it may meet the Vulnerable criteria due to the significant impact that considerable fishing pressure is likely having on this species in much of its range, and that will continue in future. There is a need for survey and appraisal of the status of this species.
Brown-banded Bamboo Shark <i>Chiloscyllium punctatum</i>	Bennett, M.B. & Kyne, P.M.	NT <i>LC in Australia*</i>	2003	<i>Chiloscyllium punctatum</i> is a widely distributed and probably fecund (oviparous) tropical species occurring in a variety of habitats throughout its range. Within Australia the species is assessed as Least Concern as a portion of its habitat is protected in marine parks and it is not a target species, except perhaps for the aquarium trade. It is an extremely hardy species that would presumably survive as a discard in any trawl bycatch. However, throughout much of the rest of its range, the species is likely to be threatened by overfishing for human consumption, habitat loss due to destructive fishing methods on coral reefs, and collection for the display-aquarium trade. It fails to meet the criteria for Vulnerable due to insufficient data, but is assessed as Near Threatened globally because of concern over the significant impact that these practices must be having on this species in much of its range.
Indonesian Speckled Carpet Shark <i>Hemiscyllium freycineti</i>	Kyne, P.M. & Heupel, M.R.	NT	2003	A largely unknown endemic species from New Guinea. It is apparently common in parts of its range although the shallow water habitat where it occurs is subject to expanding fisheries, including trawling and dynamite fisheries as well as high pollutant loads. This species may also be subject to exploitation by the aquarium industry. <i>Hemiscyllium freycineti</i> requires scientific examination to define its conservation status. Due to its limited range, the high degree of habitat destruction and heavy fishing pressure within the region, there is concern that it may soon become Vulnerable (A3cde).
Papuan Epaulette Shark <i>Hemiscyllium hallstromi</i>	Heupel, M.R. & Kyne, P.M.	VU (B1ab(iii))	2003	A largely unknown species endemic to the Gulf of Papua (Papua New Guinea), a limited distribution subject to a high degree of habitat destruction (high pollutant loads and dynamite fishing practices). Gold mining in the Fly River catchment contributes a large pollutant load that drains directly into the Gulf of Papua causing habitat damage. <i>Hemiscyllium hallstromi</i> may also be dependent on coral reef habitats, which are being heavily impacted by pollution and destructive fishing. This species may be subject to exploitation by the aquarium industry, but the extent is unknown.
Epaulette Shark <i>Hemiscyllium ocellatum</i>	Bennett, M.B. & Kyne, P.M.	LC <i>NT in New Guinea</i>	2003	<i>Hemiscyllium ocellatum</i> is widely dispersed across Australia and around New Guinea with a primary habitat of shallow inshore waters and reef systems. In Australian waters marine parks protect much of the critical habitat on the east coast where it is abundant on some reefs. There are no identifiable important fishing pressures in Australia, although a small aquarium trade may target this species. In New Guinea this shark may be collected as part of a subsistence/artisanal fishery and severe degradation of its habitat occurs in parts of its range through destructive fishing practices and high pollutant loads. The species is listed as Least Concern globally, but

				Near Threatened (due to concern that it could meet the criterion A3cde for Vulnerable) around New Guinea, reflecting the pressures facing the species in that region.
Hooded Carpet Shark <i>Hemiscyllium strahani</i>	Heupel, M.R. & Kyne, P.M.	VU (B1ab(iii))	2003	A largely unknown species endemic to the northern and southern coast along the eastern extent of New Guinea. Its range is limited and somewhat fragmented with a high degree of habitat destruction (high pollutant loads and dynamite fishing practices). This species may also be subject to an unknown level of exploitation by the aquarium industry.
Speckled Carpet Shark <i>Hemiscyllium trispeculare</i>	Heupel, M.R.	LC	2003	This little-known species is possibly an Australian endemic (it may also occur in Indonesia). It is not targeted by fisheries and is distributed over a reasonably large coastal range. These small sharks are unlikely to be significantly impacted as a bycatch species and at least a portion of the species' range is protected from fishing. This species may be utilized by the aquarium industry, but the extent of exploitation is unknown.
Family Ginglymostomatidae				
Tawny Nurse Shark <i>Nebrius ferrugineus</i>	Pillans, R.D.	VU (A2abcd+3cd+4a bcd) <i>LC in Australia*</i>	2003	A widely distributed continental and insular shelf species of the Indian, west and central Pacific Oceans. Restricted to a narrow band of shallow water habitat (5-30 m, occasionally to 70 m) that is heavily fished throughout all its range except Australia. Taken in inshore fisheries (demersal trawls, floating and fixed bottom gill nets and baited hooks) in Indonesia, Thailand, Philippines, Pakistan and India. Although there are limited data on population declines in these areas, reports of local extinctions in India and Thailand, combined with its narrow habitat range, apparently limited dispersion and low fecundity, indicate that the species is highly susceptible to local inshore fisheries and has declined in a large proportion of its range. Within Australia it is assessed as Least Concern because it is widely distributed and abundant, captured only in very small numbers in gillnets and beach meshing.
Shorttail Nurse Shark <i>Pseudoginglymostoma brevicaudatum</i>	Nel, R., Yahva, S., Jiddawi, N. & Semesi, S.	VU (A3cd+4cd)	2004	The status of this poorly known endemic species is of concern due to its limited distribution on coral reefs in inshore tropical waters of East Africa and Madagascar (and possibly the Seychelles and Mauritius). Occurring in areas that support heavy inshore artisanal fisheries, it is probably not a targeted species but could be overfished as bycatch. The fins of this shark are known to fetch moderate prices in Tanzania. This species is also likely to be threatened by destruction of its coral reef habitat. Although data are lacking, this species is assessed as Vulnerable due to undoubted heavy pressure from inshore fisheries and habitat destruction, both of which are likely to increase in the future. In addition, it is likely that the subpopulations occurring off East Africa and Madagascar are distinct, thus the 'East African subpopulation' may also meet the threatened 'B' criterion (due to restricted geographic range).
Family Stegostomatidae				
Zebra Shark <i>Stegostoma fasciatum</i>	Pillans, R.D. & Simpfendorfer, C.A.	VU (A2abcd+3cd+4a bcd) <i>LC in Australia*</i>	2003	A broadly distributed continental and insular shelf species of the Indian, west and central Pacific Oceans. Usually found within a narrow band of shallow coral reef habitat and soft bottom (to 62 m), that is heavily fished throughout all its range except Australia. Taken in inshore fisheries (demersal trawls, floating and fixed bottom gillnets and baited hooks) and seen in fish markets in Indonesia, Thailand, Malaysia, Philippines, Pakistan, India, Taiwan, and elsewhere. There are limited data on population declines in these areas, with the exception of the Gulf of Thailand, but the species is susceptible to local inshore fisheries and coral reef habitat loss and damage because of its habitat preferences and limited dispersion. In Australia, where this species is abundant, has a wide distribution and is captured only in very small numbers in prawn trawls, it is assessed as Least Concern.

Family Rhincodontidae				
Whale Shark <i>Rhincodon typus</i>	Norman, B.	VU (A1bd+2d)	2000	The life history of this relatively scarce but cosmopolitan tropical and warm temperate species is poorly understood, but it may be relatively fecund and migrates extremely large distances. Catches have declined and populations apparently been depleted by harpoon fisheries in several countries targeting localised concentrations of this huge, slow-moving and behaviourally-vulnerable species, and there is incidental capture in other fisheries. Directed fisheries, high value in international trade, a K-selected life history, highly migratory nature, and low abundance make this species vulnerable to exploitation. In recent years dive tourism involving this species has developed in a number of locations around the world.
Order Lamniformes				
Family Odontaspidae				
Grey Nurse Shark (Sand Tiger Shark, Ragged Tooth Shark) <i>Carcharias taurus</i>	Pollard, D.A. & Smith, A.	VU (A1ab+2d)	2000	This large coastal species of shark has one of the lowest reproductive rates known among elasmobranchs, giving birth to one or two large young every two years. As a result, annual rates of population increase and ability to sustain fishing pressure are very low. Although the species is widespread, regional populations are isolated and no longer thought to mix. Catch rates of well-studied populations in Australia and South Africa have shown declines as a result of commercial fishing, spearfishing and beach meshing, requiring the introduction of management. Despite protection in Australia, population recovery is being very slow.
	Pollard, D.A., Gordon, I., Williams, S., Flaherty, A. & McAuley, R.B.	<i>VU (A1abcd) in Australia*</i>	2003	The Australia-wide assessment of Vulnerable for this species was derived from a combination of a severe depletion of the east coast population since the 1950s and an apparently larger and more stable population on the west coast. Despite State and Commonwealth protection, grey nurse sharks are still subject to mortality from commercial and recreational fishing activities and disturbance by recreational divers at inshore aggregation sites. Australia's two subpopulations are assessed separately as follows:
		<i>CR (A2abcd +3cd+4abcd) on the East Coast of Australia</i>		
		<i>NT on the West Coast of Australia</i>		West Coast of Australia: Grey nurse sharks have never been targeted in Western Australia (WA). The only significant source of mortality has been from incidental capture by a demersal gillnet fishery. Based on data from this fishery, the west coast population of <i>C. taurus</i> is assessed as Near Threatened because mean annual catches of 77 sharks, in conjunction with a stable CPUE, indicate that the subpopulation is larger and more stable than the eastern subpopulation, and aggregation sites are not known within the range of this fishery. However,

				these data are only available for 1989-1997, when the species was protected under the Endangered Species Protection Act and commercial catch reporting ceased. Due to the loss of this established index of abundance, the limited reproductive capacity of <i>C. taurus</i> and the precarious status of the eastern subpopulation, it is recognized that the western subpopulation still has the potential to become Vulnerable in the future. Even low levels of bycatch may lead to population declines in a species with such a low intrinsic rate of increase. There is a need to develop the means to monitor the abundance of these sharks in WA and conduct further research into their ecology.
Herbst's Nurse Shark (Small-toothed Sand Tiger) <i>Odontaspis ferox</i>	Pollard, D.A., Gordon, I., Williams, S., Flaherty, A. & Fergusson, I.K.	DD VU (A2abd+3bd+4a bd) in Australia	2003	Despite its worldwide distribution, <i>Odontaspis ferox</i> subpopulations and occurrences are fragmented and the species may be naturally rare. Recent evidence of shallow water aggregations in a number of areas suggests that the species may be more susceptible to fishing pressure than previously assumed, and potentially susceptible to coastal habitat impacts as well as to over-exploitation because of its presumed very low reproductive capacity. Increased demersal trawl fisheries in Australia and New Zealand are now operating in areas of possible and known occurrence. Fishery independent surveys indicate an observed decline of over 50% in catches off the east coast of Australia (hence the Vulnerable assessment in these waters), probably the result of commercial fishing operations off New South Wales; similar declines are presumed to have occurred in many other parts of its range impacted by fisheries. In addition, the decline of <i>O. ferox</i> in the Mediterranean Sea likely matches or even exceeds that in Australia, although data are lacking. More study is needed to accurately determine the distributional range, abundance and biology of this species, and it is assessed as Data Deficient globally pending an urgent review.
Bigeye Sand Tiger <i>Odontaspis noronhai</i>	Amorim, A.F., Arfelli, C.A. & Fagundes, L.	DD	2000	This rare pelagic deepwater shark is sparsely but widely distributed in tropical and warm-temperate waters, apparently an inhabitant of continental and insular slopes. It is so infrequently recorded that its biology and population status is unknown. Its life cycle and biology is likely to be similar to that of <i>C. taurus</i> , which has been found to be particularly vulnerable to fisheries, although <i>O. noronhai</i> matures at an even larger size.
Family Pseudocarchariidae				
Crocodile Shark <i>Pseudocarcharias kamoharai</i>	Compagno, L.J.V. & Musick, J.M.	NT	2000	This small, uncommon, pelagic, oceanic shark is circumtropical in distribution. Because of its small litter size and probable life history demography, it is likely vulnerable as bycatch in expanding pelagic high-seas long-line fisheries. No catch per unit effort records are available to indicate trends in population size, but a population decline from bycatch is considered probable and is predicted to continue or increase as existing massive pelagic long-lining fishing effort increases worldwide.
Family Mitsukurinidae				
Goblin Shark <i>Mitsukurina owstoni</i>	Duffy, C.A.J., Ebert, D.A. & Stenberg, C.	LC	2004	This species is assessed as Least Concern because although apparently rare, it is widespread in the Atlantic, Indian and Pacific Oceans and is only infrequently taken in deepwater fisheries. It has a sporadic distribution with most records from the Northwest Pacific (Japan, Taiwan) on the upper continental slope. May also be mesopelagic. It is likely to be found in more locations than previously known as deepwater surveys are undertaken in other regions or as deepwater fisheries expand globally. Taken in deep bottom-set gillnet, bottom longline and trawl fisheries; rarely surface drift nets. Also entangled in deepwater fishing gear. Recorded from depths of ≤30 m (occasional) to >1,000 m with reported landings of adults rare suggesting most of the adult

				population is unavailable to existing deepwater fisheries.
Family Megachasmidae				
Megamouth Shark <i>Megachasma pelagios</i>	Compagno, L.J.V.	DD	2000	A large, mainly deepwater filter-feeding species that is known from only a few bycaught or stranded specimens and is apparently very rare throughout its range. It could increasingly be taken as bycatch in deepwater fisheries.
Family Alopiidae				
Pelagic Thresher <i>Alopias pelagicus</i>	Reardon, M.B.	DD**	2003	<i>Alopias pelagicus</i> is a wide-ranging Indian and Pacific Ocean pelagic shark, apparently highly migratory, with low fecundity (2 pups/litter) and low potential annual rate of population increase (between 2–4%). This species is especially vulnerable to fisheries exploitation (target and bycatch) as its epipelagic habitat occurs within the range of many gillnet and longline fisheries in which it is readily caught. Although this species appears to be relatively common in some coastal localities, fishing pressure in some areas appears already to be unsustainable at current levels of exploitation, because of its low rebound potential, and is likely to continue, if not increase. This animal requires careful monitoring because of its limiting life-history traits and evidence of declines in parts of its range, although available data are currently insufficient to assess the status of this species.
Bigeye Thresher <i>Alopias superciliosus</i>	Reardon, M.B.	DD**	2003	<i>Alopias superciliosus</i> is an apparently highly migratory, oceanic and coastal species found virtually circumglobally in tropical and temperate seas. It has low fecundity (2–4 pups/litter) and a very low potential annual rate of population increase (between 2–3%). <i>Alopias superciliosus</i> is especially vulnerable to fisheries exploitation (target and bycatch) as its epipelagic habitat occurs within the range of many gillnet and longline fisheries in which it is readily caught. This species has been fished throughout its range. Although population trend data are lacking in most areas, significant reductions in thresher (<i>A. superciliosus</i> and <i>A. vulpinus</i>) CPUE have been reported in the Northwest Atlantic pelagic longline fishery and suspected declines have occurred elsewhere. Although insufficient data are available on a global level on catch rates and abundance, it is evident that this vulnerable species with such low productivity faces major threats in many parts of its range where it is affected by longline and gillnet fisheries that are unlikely to cease or decrease anytime in the immediate future.
Thresher Shark <i>Alopias vulpinus</i>	Goldman, K.J.	DD <i>NT in California*</i>	2001	This widely distributed continental shelf species is an important economic species in many areas, and has been taken in large numbers as a targeted species and landed bycatch. The California drift gill net fishery provided strong evidence that <i>A. vulpinus</i> is highly vulnerable to overfishing in a short period of time, with the subpopulation having an estimated reduction of >50% over three generations. The causes of reduction are reversible and understood, and the cause (heavy fishing pressure, especially on adults and subadults) has largely ceased. The subpopulation has made a near full recovery to just below 50% of the initial subpopulation size. However, it is clear the species depends on adequate management measures, and would otherwise be at risk of overfishing. A lack of fisheries data from other locations, incomplete knowledge of stock structures, and uncertainty over life history parameters make it impossible to determine population size or fluctuations elsewhere. Nonetheless, the high value of the species and its exploitation by unmanaged fisheries, combined with its biological vulnerability, indicates that at least some, if not most, subpopulations in other parts of the world are likely to be equally or more seriously at risk than that in California and, unlike the Californian stock, are not the subject of management enabling the population to rebuild.

Family Cetorhinidae				
Basking Shark <i>Cetorhinus maximus</i>	Fowler, S.L.	VU (A1ad+2d) <i>EN (A1ad) in NE Atlantic and North Pacific</i>	2000	A very large filter-feeding cold-water pelagic species, widely distributed but only regularly seen in a few favoured coastal locations and probably never very abundant. Documented fisheries in several regions have usually been characterised by rapidly declining local populations as a result of short-term fisheries exploitation, followed by very slow or no recorded population recovery. There is likely potential for similar population declines to occur in the future from directed and bycatch fisheries, driven at least in part by the demand for fins in international trade. Basking sharks are now legally protected in some territorial waters. Compagno (1984) considers the basking shark "to be extremely vulnerable to overfishing, perhaps more so than most sharks ... ascribed to its slow growth rate, lengthy maturation time, long gestation period, probably low fecundity and probable small size of existing populations (belied by the immense size of individuals in their small schools)."
Family Lamnidae				
White Shark <i>Carcharodon carcharias</i>	Fergusson, I., Compagno, L.J.V. & Marks, M.	VU (A1cd+2cd)	2000	The white shark is a widely but sparsely distributed top predator with a very low reproductive potential (late maturity and small litter size) and high vulnerability to target and bycatch fisheries (commercial and recreational), some of which supply high-value products (fins, jaws and teeth) for international trade. Notoriety of this shark as an ultimate Hollywood monster encourages inflated values for white shark products, and encourages illicit trade in white shark parts that is difficult to assess and control. Where detailed population data are available, these indicate that the abundance and average size of white sharks have declined. The species is now protected in some parts of its range, where it may be Lower Risk/conservation dependent, but the effectiveness of such protection is questionable where enforcement is weak. A global status of Endangered (A1cd+2cd) may be proven accurate for this shark as further data is collated.
Shortfin Mako <i>Isurus oxyrinchus</i>	Stevens, J.D.	NT	2000	A wide-ranging oceanic and pelagic shark with high value meat, the shortfin mako is subject to significant bycatch and targeted fisheries in some areas. Most catches are inadequately or unrecorded, and its relatively low reproductive capacity makes it very susceptible to depletion by these fisheries. However, the species is very wide-ranging and has a relatively fast growth rate. There is no evidence to suggest that its global population has been sufficiently depleted for it to warrant 'Vulnerable' status at the present time.
Longfin Mako <i>Isurus paucus</i>	Reardon, M.B.	DD**	2003	The longfin mako is a widely distributed but rarely encountered oceanic tropical (possibly circumtropical) shark. Larger and less fecund than the shortfin mako, it is often caught in the same fishing gear but at rates as low as 5% of the latter, which has undergone moderate documented declines in the Northwest Atlantic, and faces very high fishing pressures in its epipelagic habitat from commercial fleets. Longfin mako populations are considered likely to have declined and to continue to decline, due to their susceptibility to fisheries capture, low fecundity, and the fisheries operating throughout its range. However, data are currently insufficient to assess the status of this wide-ranging species.
Salmon Shark <i>Lamna ditropis</i>	Goldman, K.J. & Human, B.	DD	2000	The salmon shark is widespread in the boreal north Pacific, but its biology and life history is little known. It appears to have a very low fecundity and is probably slow to mature. As such, it may be extremely vulnerable to current bycatch pressure and to commercial fishing activity in the northwest Pacific. Commercial fishing is closed in Alaska and a management decision is pending in US Federal waters. There is a lack of catch and landing statistics and no population data for the species.

Porbeagle Shark <i>Lamna nasus</i>	Stevens, J.D.	NT <i>VU (A1bd) in Northeast Atlantic</i> <i>LR/cd in Northwest Atlantic</i>	2000	A very wide-ranging species (albeit with apparently little exchange between neighbouring populations), but with a low reproductive capacity and high commercial value. Taken both in target and incidental fisheries. Global populations are not proven to have been depleted to a level where they qualify for a Vulnerable status. However, North Atlantic populations have been seriously over-exploited in longline fisheries, although the introduction of management for US and Canadian shark fisheries should reverse the serious decline in this stock. The apparent lack of exchange between populations on each side of the North Atlantic has resulted in separate assessments for the western and eastern stocks.
Order Carcharhiniformes				
Family Scyliorhinidae				
Whitish Catshark <i>Apristurus albisoma</i>	Fowler, S.L.	NT	2003	The area of occupancy of this small benthic endemic shark is presumed very limited (less than 2,000 km ²), being restricted to a narrow depth band on insular and seamount slopes. It has only been reported from a few locations. There is concern that this species may be taken as unutilised bycatch by deepwater trawl fisheries and that, like other deepwater species, it may not be sufficiently fecund to withstand exploitation pressure in these fisheries. It fails to meet the criteria for Vulnerable (B2), however, because there is insufficient evidence of fishing activity at levels that would lead to a decline in range, habitat quality or number of individuals.
White Ghost Catshark <i>Apristurus aphyodes</i>	Duffy, C. & Huveneers, C.	DD	2004	A deepwater catshark known from the Eastern North Atlantic from depths of 1,014–1,800 m. Known from only a limited number of specimens. Reaches a maximum of 54 cm total length (TL) but little known of its biology. Insufficient information is available to assess the species beyond Data Deficient.
Atlantic Catshark <i>Apristurus atlanticus</i>	Huveneers, C. & Duffy, C.	DD	2004	This species is known only from the holotype, a 24.7cm total length (TL) immature male specimen caught in the Eastern Central Atlantic off the Canary Islands. Insufficient information is available to assess the species beyond Data Deficient.
Brown Catshark <i>Apristurus brunneus</i>	Huveneers, C. & Duffy, C.	DD	2004	A little-known deepwater shark from the outer continental shelf and upper slope, known from depths of 33–950 m in the Eastern Pacific. Reaches a maximum size of 68 cm total length (TL) and is oviparous with the incubation period of eggs possibly one year. Although <i>Apristurus brunneus</i> is reported to be a relatively common bycatch in deepwater trawl fisheries, insufficient catch and biological information is available to assess this species beyond Data Deficient. Species-specific monitoring of catches should be undertaken.
Hoary Catshark <i>Apristurus canutus</i>	Leandro, L.	DD	2004	A little-known deepwater catshark recorded from 687–840 m on the insular slope off the Leeward Islands off Antigua and Anguilla in the Western Central Atlantic. Reaches 45.5 cm total length (TL) but nothing known of its biology. Not presently of any interest to fisheries. Further research is required to determine its distribution, biology and habitat.
Pale Catshark <i>Apristurus exsanguis</i>	Duffy, C.A.J.	LC	2003	Although this is an endemic species collection records indicate it is widespread and probably continuously distributed over the mid to lower slope around New Zealand. The biology of all <i>Apristurus</i> species within the New Zealand Exclusive Economic Zone (EEZ) is very poorly known due to the uncertain taxonomy of the group. They appear to be most abundant below 1,000 m, and are the only sharks regularly taken in research trawls below 1,200 m on the Chatham Rise. As relatively little fishing occurs below 1,200 m depth a large part of these species' populations may be effectively beyond fishing depths. Although the maximum recorded depth of <i>A. exsanguis</i> is 1,200 m there have been relatively few research trawls below this

				depth and it is possible that they occur deeper than this. There is also relatively little deepwater trawling effort in the northern part of the species distribution. This situation may change however, as some fishing companies have conducted exploratory deepwater trips off northeast North Island.
Stout Catshark <i>Apristurus fedorovi</i>	Duffy, C. & Huveneers, C.	DD	2004	This is a very poorly known species, with less than 30 specimens reported in the scientific literature. Almost nothing is known of its biology. This species may be endemic to northern Japanese waters where it is taken in water around 1,200 m deep. However, accurate identification of <i>Apristurus</i> species is particularly difficult and further research is required to determine its geographical and bathymetrical distribution. Insufficient information is available to assess the species beyond Data Deficient.
Humpback Catshark <i>Apristurus gibbosus</i>	Duffy, C. & Huveneers, C.	DD	2004	<i>Apristurus gibbosus</i> is only known from 10 specimens caught at around 900 m depth. An apparently rare species, it is possibly endemic to the East and South China Seas. Largest specimen examined is 54.2 cm total length (TL). It is probably taken in deepwater trawl fisheries and not identified. Insufficient information is available to assess the species beyond Data Deficient.
Longfin Catshark <i>Apristurus herklotsi</i>	Duffy, C. & Huveneers, C.	DD	2004	<i>Apristurus herklotsi</i> is a poorly known deepwater catshark recorded from the Northwest and Western Central Pacific. Inhabits the upper continental slope and oceanic ridges at 520–900 m depth. Taken as bycatch of deepwater trawl fisheries but nothing known of its biology or catch rates. Insufficient information is available to assess the species beyond Data Deficient.
<i>Apristurus internatus</i>	Duffy, C. & Huveneers, C.	DD	2004	<i>Apristurus internatus</i> is known only from the holotype (a 49.1 cm total length (TL) female) and a paratype (a 40.3 cm TL male), both caught in the East China Sea. Probably taken as bycatch in deepwater trawl fisheries. Insufficient information is available to assess this species beyond Data Deficient.
Broadnose Catshark <i>Apristurus investigatoris</i>	Huveneers, C. & Duffy, C.	DD	2004	Known only from the holotype, a 24.2 cm total length (TL) immature female caught in the Andaman Sea (11°46'N, 93°10'E) at a depth of 1,040 m. Possibly taken in deepwater trawl fisheries but not identified. Insufficient information is available to assess the species beyond Data Deficient.
Longnose Catshark <i>Apristurus kampae</i>	Duffy, C. & Huveneers, C.	DD	2004	A poorly-known deepwater catshark recorded from the Eastern Pacific off Central California to the Gulf of California. Records from the Galapagos Islands may represent the closely-related <i>Apristurus stenseni</i> or another undescribed species. The biology and distribution of <i>A. kampae</i> is poorly known due to confusion with other <i>Apristurus</i> species, and its deepwater habitat (upper continental slope down to 1,888 m depth). Maximum reported size is 58.4 cm total length (TL). Taken incidentally as bycatch in deepwater trawls and sablefish traps off California. Insufficient information is available to assess the species beyond Data Deficient.
Iceland Catshark <i>Apristurus laurussonii</i>	Duffy, C. & Huveneers, C.	DD	2004	An apparently common deepwater catshark on the upper continental slope in parts of the North Atlantic at depths of 560–1,462 m. <i>Apristurus laurussonii</i> together with <i>A. parvipinnis</i> are reported to be the commonest <i>Apristurus</i> species in the Gulf of Mexico. Maximum recorded size around 72 cm total length (TL). Although reported to be a relatively common bycatch in several deepwater trawl fisheries, insufficient catch and biological information is available to assess this species beyond Data Deficient at present.
Longhead Catshark <i>Apristurus longicephalus</i>	Duffy, C. & Huveneers, C.	DD	2004	<i>Apristurus longicephalus</i> is recorded over the continental slope at depths of 500–1,140 m with a scattered range around Japan, the Seychelles and Northern Australia. Taken as bycatch in deepwater trawl fisheries but at present there is insufficient information available to assess this species beyond Data Deficient.

Flathead Catshark <i>Apristurus macrorhynchus</i>	Huveneers, C. & Duffy, C.	DD	2004	A little-known deepwater catshark recorded from the continental slopes of Japan and Taiwan. Reaches at least 67.4 cm total length (TL). Probably taken as bycatch in bottom trawl fisheries. At present insufficient information is available to assess the species beyond Data Deficient.
Broadmouth Catshark <i>Apristurus macrostomus</i>	Huveneers, C. & Duffy, C.	DD	2004	A deepwater catshark known only from one 38 cm total length (TL) male (previously incorrectly cited as a female) caught in the South China Sea at a depth of 913 m. Possibly taken in deepwater trawl fisheries. Insufficient information is available to assess this species beyond Data Deficient.
Ghost Catshark <i>Apristurus manis</i>	Ebert, D.A.	LC	2004	This little-known deepwater catshark is occasionally taken by research vessels surveying the North Atlantic continental slope region at depths of 1,000–2,000 m, and in southern Africa is known from only a few specimens caught in very deepwater off Cape Town, South Africa. Future expansion of deepwater fisheries could pose a threat to this poorly known species, however, at present much of its range is below the depth of fishing activities (>1,500 m) and it is considered to be Least Concern.
Smalleye Catshark <i>Apristurus microps</i>	Ebert, D.A.	LC	2004	This catshark is known from occasional captures in deepsea exploratory trawls (in 700–1,200 m), becoming most abundant >800 m. It is known to occur to 2,000 m or more. In southern Africa there are currently no deepsea trawl fisheries. In the North Atlantic, this species is possibly caught as a bycatch in deepwater trawl fisheries, but these could be other <i>Apristurus</i> species. A careful examination of North Atlantic <i>A. cf. microps</i> should be compared to southern African forms. Future expansion of deepwater fisheries could pose a threat to this poorly known species, however, at present much of its range is below the depth of fishing activities and it is considered to be Least Concern.
Smalldorsal Catshark <i>Apristurus micropterygeus</i>	Duffy, C. & Huveneers, C.	DD	2004	A deepwater catshark known only from one 37.2 cm total length (TL) juvenile or adolescent male caught in the South China Sea at a depth of 913 m. Probably taken as bycatch in deepwater trawl fisheries. Insufficient information is available to assess the species beyond Data Deficient.
Largenose Catshark <i>Apristurus nasutus</i>	Huveneers, C., Duffy, C. & Acuña, E.	DD	2004	A poorly known deepwater catshark of the continental slope off South America in the Eastern Pacific (nominal records from the Atlantic are probably a misidentification). Reaches a maximum size of 59 cm total length (TL) but nothing is known of its biology. Taken incidentally in small numbers in the Chilean deep-sea shrimp <i>Heterocarpus reedi</i> fishery (Acuña and Villaroel 2002). Information on interactions with fisheries not available from other countries in its range. Insufficient information is available to assess the species beyond Data Deficient at this time.
Smallfin Catshark <i>Apristurus parvipinnis</i>	Huveneers, C. & Duffy, C.	DD	2004	An apparently common deepwater catshark on the upper continental slope in the Western Central Atlantic at depths of 636–1,115 m. <i>Apristurus laurussonii</i> together with <i>A. parvipinnis</i> are reported to be the commonest <i>Apristurus</i> species in the Gulf of Mexico. Maximum recorded size around 52 cm total length (TL). Although <i>A. parvipinnis</i> is reported to be a relatively common bycatch in deepwater trawl fisheries in the Gulf of Mexico, insufficient catch and biological information is available to assess this species beyond Data Deficient.
Fat Catshark <i>Apristurus pinguis</i>	Huveneers, C. & Duffy, C.	DD	2004	A poorly-known deepwater catshark, apparently endemic to the continental slope of the East China Sea. Known only from nine specimens. The holotype, an adult male 55.6 cm total length (TL), is the largest specimen recorded. Probably taken as bycatch in deepwater trawl fisheries but at present there is insufficient information available to assess this species beyond Data Deficient.
Spatula Catshark <i>Apristurus platyrhynchus</i>	Duffy, C. & Huveneers, C.	DD	2004	<i>Apristurus platyrhynchus</i> is a poorly known, Indo-West Pacific continental slope deepwater catshark. Maximum size is estimated to be about 85 cm total length (TL). Probably taken as

				bycatch in deepwater trawl, set net and line fisheries throughout its range. However, at present there is insufficient information available to assess the species beyond Data Deficient.
Deepwater Catshark <i>Apristurus profundorum</i>	Huveneers, C. & Duffy, C.	DD	2004	<i>Apristurus profundorum</i> is known with certainty only from the holotype, a 51 cm total length (TL) adolescent male caught off Delaware Bay in the Northwest Atlantic at 1,492 m depth. Nominal <i>A. profundorum</i> from off Mauritania is possibly <i>A. manis</i> . Adults probably relatively large compared to congeners given the size at adolescence. Little is known about the species and confusion with <i>A. manis</i> needs to be resolved. Given its recorded depth of capture, it is not likely to be taken in any fisheries. However, there is insufficient information available to assess the species beyond Data Deficient.
Broadgill Catshark <i>Apristurus riveri</i>	Leandro, L.	DD	2004	An uncommon and poorly known deepwater catshark recorded from 860-1,098 m in the Western Central Atlantic where it is known from Cuba, the northern Gulf of Mexico and Panama. Reaches 46 cm total length (TL) but nothing known of its biology. Of no interest to fisheries at present. Insufficient information available to assess the species beyond Data Deficient at this time.
Saldanha Catshark <i>Apristurus saldanha</i>	Ebert, D.A.	LC	2004	This poorly known, southern African endemic catshark is recorded from the continental slopes of South Africa and Namibia. It is occasionally caught in deepsea exploratory trawls below 700 m, but has been recorded at depths of 344–1,009 m. Future expansion of deepwater fisheries could pose a threat to this species, however at present much of its range is below the depth of current fishing activities and it is considered to be Least Concern.
South China Catshark <i>Apristurus sinensis</i>	Huveneers, C. & Duffy, C.	DD	2004	Known only from the holotype, a 41.7 cm total length (TL) immature male specimen caught in the South China Sea at 537 m depth. Insufficient information is available to assess the species beyond Data Deficient.
Spongehead Catshark <i>Apristurus spongiceps</i>	Huveneers, C. & Duffy, C.	DD	2004	Known only from the holotype, a 51.4 cm total length (TL) female caught near Bird Island, Hawaiian Islands, and a 10.5 cm TL juvenile caught in the Banda Sea, southern Sulawesi. Recorded on or near the bottom at 572–1,482 m depth. Insufficient information is available to assess the species beyond Data Deficient.
Panama Ghost Catshark <i>Apristurus stenseni</i>	Leandro, L.	DD	2004	A poorly-known deepwater catshark recorded from 915–975 m in the Eastern Central Pacific where it is known only from Panama. Reaches at least 23 cm total length (TL) but nothing is known of its biology. Of no interest to fisheries at present. It is presently known to have a very narrow geographical and bathymetrical range. Further surveys may prove it to be more widely distributed than presently known.
Freckled Catshark <i>Apristurus</i> sp. nov. A [Last & Stevens, 1994]	Lisney, T.J. & Cavanagh, R.D.	DD	2003	This undescribed endemic belongs to a genus of poorly known deepwater catsharks. Very little is known of the biology. This species is known to occur in deepwater (940-1,290 m) off southeastern Australia and Western Australia. There is some concern for this species as its distribution includes heavily fished areas, particularly off southeastern Australia. Deepwater demersal trawl fisheries are expanding in the region, and assuming its biology is like other deepwater shark species, it may not be sufficiently fecund to withstand increasing exploitation pressure.
Bigfin Catshark <i>Apristurus</i> sp. nov. B [Last & Stevens, 1994]	Lisney, T.J. & Cavanagh, R.D.	DD	2003	This undescribed endemic belongs to a genus of poorly known deepwater catsharks. Very little is known of its biology. This species is known to occur in eastern Australian waters and a smaller area off Western Australia. A significant portion of its range is outside fished areas. Where fisheries do occur, the effects on this species are unknown but thought to be insignificant, although it is occasionally taken as a trawl bycatch. Future expansion of deepwater trawl fisheries within its range could pose a threat.

Fleshynose Catshark <i>Apristurus</i> sp. nov. C [Last & Stevens, 1994]	Lisney, T.J. & Cavanagh, R.D.	DD	2003	This undescribed species belongs to a genus of poorly known deepwater catsharks. Very little is known of its biology. This species is known to occur in deepwater (900-1,150 m) off southern Australia and New Zealand. There is some concern for this species as its distribution includes some heavily fished areas, particularly off southern Australia. Deepwater demersal trawl fisheries are expanding in the region, and assuming its biology is like other deepwater shark species, it may not be sufficiently fecund to withstand the exploitation pressure.
Roughskin Catshark <i>Apristurus</i> sp. nov. D [Last & Stevens, 1994]	Cavanagh, R.D. & Lisney, T.J.	DD	2003	This undescribed species belongs to a genus of poorly known deepwater catsharks. Very little is known of its biology. This species is known to occur in deepwater (840-1,380 m) off New Zealand, sporadic sites around Tasmania and a small area of Western Australia. There is some concern for this species as its distribution includes some heavily fished areas. Deepwater demersal trawl fisheries are expanding in the region, and assuming its biology is like other deepwater shark species, it may not be sufficiently fecund to withstand the exploitation pressure.
Bulldog Catshark <i>Apristurus</i> sp. nov. E [Last & Stevens, 1994]	Lisney, T.J. & Cavanagh, R.D.	DD	2003	This undescribed endemic belongs to a genus of poorly known deepwater catsharks. Very little is known of its biology. This species is known to occur in deepwater (1,020-1,500 m) off southeastern Australia. There is some concern for this species as its distribution includes heavily fished areas. Deepwater demersal trawl fisheries are expanding in the region, and assuming its biology is like other deepwater shark species, it may not be sufficiently fecund to withstand increasing exploitation pressure.
Bighead Catshark <i>Apristurus</i> sp. nov. F [Last & Stevens, 1994]	Lisney, T.J. & Cavanagh, R.D.	DD	2003	This undescribed endemic belongs to a genus of poorly known deepwater catsharks and is recorded from only three specimens taken off Perth, Western Australia. This species could be rare or uncommon, and the effects of fisheries are unknown, though if its biology is like other deepwater shark species, it may not be sufficiently fecund to withstand exploitation pressure.
Pinocchio Catshark <i>Apristurus</i> sp. nov. G [Last & Stevens, 1994]	Cavanagh, R.D. & Lisney, T.J.	DD	2003	This undescribed endemic belongs to a genus of poorly known deepwater catsharks. Very little is known of its biology. Possibly a widely distributed deep-water catshark found along the Australian continental slope at depths of 590-1,000 m, this consists of several distinct populations which may be separate species. Although part of the distribution includes heavily fished areas, particularly off southeastern Australia, much of its range is in unfished areas. Given the taxonomic uncertainty of the separate populations it is not possible to assess the conservation status of this species at this time. However, deepwater demersal trawl fisheries are expanding in the region, and the situation should be reassessed following taxonomic clarification.
Black Wonder Catshark <i>Apristurus</i> sp. nov. [Compagno, Ebert & Nakaya]	Ebert, D.A.	DD [#]	2004	This undescribed deepwater catshark is known from depths of 668–1,005m in the Southeast Atlantic from Central Namibia to the Agulhas Bank, South Africa. It may occasionally be caught in deepwater trawls although no sustained deepwater fisheries currently operate within its known range. Given that virtually nothing is known about this species it cannot be assessed beyond Data Deficient at this time although it is likely to prove Least Concern with further research (including description) as with conspecific southern African <i>Apristurus</i> species.
Grey Spotted Catshark <i>Asymbolus analis</i>	Kyne, P.M. & Bennett, M.B.	DD	2003	<i>Asymbolus analis</i> is an uncommon, little-known catshark endemic to southeastern Australian. It is demersal on the continental shelf, and very little is known of its biology. It is not targeted commercially, but captured as bycatch in demersal trawl fisheries, where it may be retained in small quantities. Given its endemism and the fact that it is uncommon, bycatch levels need to be monitored and future research directed at its life history.
Blotched Catshark	Simpfendorfer,	DD	2003	<i>Asymbolus funebris</i> is known from a single 44 cm total length (TL) female specimen collected

<i>Asymbolus funebris</i>	C.A. & Heupel, M.R.			off the southwestern coast of Australia at a depth of 195 m. It is likely to be of limited vulnerability to commercial fisheries because of its small size.
Western Spotted Catshark <i>Asymbolus occiduus</i>	Simpfendorfer, C.A. & Heupel, M.R.	LC	2003	<i>Asymbolus occiduus</i> is a little known temperate catshark endemic to southern Australia. Due to its reasonably large distribution, habitat use, small size and limited fishing in its area of occurrence this species is unlikely to be impacted by commercial fisheries.
Pale Spotted Catshark <i>Asymbolus pallidus</i>	Simpfendorfer, C.A. & Heupel, M.R.	LC	2003	<i>Asymbolus pallidus</i> is a little known small tropical catshark endemic to an area of continental shelf almost 1,000 km long off the coast of northeastern Australia. Due to its distribution, small size and limited fishing activity in its area of occurrence, this species is unlikely to be impacted by commercial fisheries.
Dwarf Catshark <i>Asymbolus parvus</i>	Heupel, M.R.	LC	2003	This small endemic catshark is recorded from a small area off the northwest coast of Australia with a depth range of 59-252 m. Its very small size means that it is unlikely to be significantly impacted by the trawl fisheries in the area. In addition it is probably discarded when caught due to its size and low commercial value, and is believed to have a high survival rate.
Orange Spotted Catshark <i>Asymbolus rubiginosus</i>	Kyne, P.M. & Bennett, M.B.	LC	2003	<i>Asymbolus rubiginosus</i> is a little known catshark endemic to southeastern Australia. It is demersal on the continental shelf and upper slope with a wide bathymetric range. Little is known of its biology. It is of no interest to fisheries, but is caught as bycatch in some demersal trawl fisheries. The species may have a continuous egg-laying cycle leading to high productivity, resulting in resilience to the effects of trawling.
Variagated Catshark <i>Asymbolus submaculatus</i>	Simpfendorfer, C.A. & Heupel, M.R.	LC	2003	<i>Asymbolus submaculatus</i> is restricted to a relatively small area of southwestern Australia. Due to its habitat use (caves and ledges), nocturnal behaviour patterns and small size, this species is unlikely to be impacted by commercial fisheries.
Gulf Catshark <i>Asymbolus vincenti</i>	Simpfendorfer, C.A. & Heupel, M.R.	LC	2003	This endemic species is widely distributed across southern Australia. It appears to be most common in the Great Australian Bight, where there is only limited demersal trawling within its depth range.
Banded Catshark <i>Atelomycterus fasciatus</i>	White, W.T.	LC	2003	The extent of occurrence of this common shallow water endemic species is quite small and partly fragmented (probably less than 20,000 km ² with a depth range of 27-122 m, mostly less than 60 m). Little is known of its biology. Species composition data from fisheries is necessary, however, due to very limited fishing activity within its known range it is unlikely that populations of this species are declining or under any immediate threat.
Marbled Catshark <i>Atelomycterus macleayi</i>	White, W.T.	LC	2003	A small catshark endemic to northern Australia and restricted to very shallow water habitats (0.5-3.5 m). Although little is known about the biology of this species, there is unlikely to be any fishing pressure upon it. <i>Atelomycterus macleayi</i> is of no commercial value, and it is unlikely that populations of this species are under any direct threats.
Coral Catshark <i>Atelomycterus marmoratus</i>	White, W.T.	NT	2003	Little is known of the biology of this widespread and common inshore Indo-West Pacific coral reef species. This species represents a minor catch in artisanal fisheries in several eastern Indonesian localities, e.g. Central Java, Bali and Lombok, and it is probable that this species is also caught in such fisheries in West Papua and other parts of its range, north to Taiwan. Increasing fishing pressure and habitat destruction (e.g. dynamite fishing, pollution and coral mining) are likely to represent significant threats to this species. Although data are not available to quantify these impacts, there is concern that this species could meet the criteria for Vulnerable due to the high level of exploitation. Further investigation of the population structure and range of this species is required to refine this assessment of its status.
New Caledonia Catshark <i>Aulohalaelurus kanakorum</i>	Fowler, S.L. & Lisney, T.J.	VU (B1ab(iii))	2003	This species is known from only one specimen and two photographs within an area that is well surveyed for its fish fauna. It is very likely a New Caledonian endemic and uncommon within its

				range. It is presumed, like similar taxa, to be a benthic species and a weak swimmer, restricted to a narrow depth band of moderately deep external coral reef habitat, hence having a small extent of occurrence. This restricted range and fragile nature of the coral reef habitat makes the species vulnerable to depletion through bycatch in mixed species fisheries and to habitat deterioration and loss as a result of run off from mining operations and coral reef bleaching.
Black-spotted Catshark <i>Aulohaelurus labiosus</i>	Lisney, T.J. & White, W.T.	LC	2003	The biology of this endemic species is poorly known but it is reported to be common. Although it has a limited distribution in southwestern Australian coastal waters, it is not subjected to any significant fishing pressure due to its reef-dwelling habit and is of no commercial value to fisheries (although there is evidence that this catshark enters the marine aquarium trade).
Arabian Catshark <i>Bythaelurus alcocki</i>	White, W.T.	DD	2004	The holotype, and only known specimen of this species, from the Indian Museum Calcutta may be lost. It was presumably small (<30 cm total length) and was captured in the Arabian Sea at a depth of between 1,134 - 1,262 m. All aspects of the biology (including maximum size) and levels of threats are unknown and thus it is assessed as Data Deficient at this point in time.
Broadhead Catshark <i>Bythaelurus clevai</i>	Robinson, L.	DD	2004	This species is known only from the holotype, a 38.7 cm total length (TL) adult male collected in 1986 in a trawl off Tulear, Southwestern Madagascar. The specimen was collected at a depth of 425-500 m. Virtually nothing is known about the species including its distribution, ecology or biology.
Dawson's Catshark <i>Bythaelurus dawsoni</i> (See footnote 5)	Francis, M.P.	DD	2003	There is no information on the population abundance or catches of this New Zealand endemic. It has a small distributional range – most of the population occurs in an area of about 722,000 km ² – and it is uncommon. Research trawl tows in the habitat area usually catch no sharks, and tows that do catch them usually take only a few individuals. The only known threat is fishing by deepwater bottom trawlers, but the small size of the shark probably ensures a large proportion escape through the codend meshes, which are a minimum of 100 mm over much of the habitat range.
Bristly Catshark <i>Bythaelurus hispidus</i>	White, W.T.	DD	2004	A small deepwater bottom-dwelling shark found on the upper continental slope in the Northeastern Indian Ocean at depths of 293–766 m. Despite being common within its limited range, biology is unknown and this species is of little interest to fisheries at present. Since there is no information on population sizes or trends and no biological data available, this species has been assessed as Data Deficient.
Spotless Catshark <i>Bythaelurus immaculatus</i>	White, W.T.	DD	2004	A deepwater bottom-dwelling shark only known from the South China Sea about 380 - 400 km east of Hainan Island. Recorded from the mid to lower continental slope at depths of 534–1,020 m. Biology unknown and of little interest to fisheries at present. Since there is no information on population sizes or trends and no biological data available, this species has been assessed as Data Deficient.
Mud Catshark <i>Bythaelurus lutarius</i>	Robinson, L.	DD	2004	<i>Bythaelurus lutarius</i> is a deepwater catshark endemic to East Africa, apparently patchily distributed from Somalia and Mozambique. It may be taken as bycatch, although its depth range (338–766 m) and small size does not make it susceptible to significant fisheries pressure. There are no population estimates and life history data are limited, although it has a potential low fecundity. Further information is required and the situation should be re-assessed as deepwater fisheries expand in the region.
Sombre Catshark <i>Bythaelurus</i> sp. nov. A [Last & Stevens, 1994] (See footnote 5)	White, W.T.	DD	2003	Known only from one 44 cm long immature male specimen caught on the continental slope off Ashmore Reef, northwestern Australia, in 900 m depth. It is unlikely to be caught by any fishery at this depth.

Reticulate Swell Shark <i>Cephaloscyllium fasciatum</i>	Lisney, T.J. & Kyne, P.M.	DD	2003	A small tropical swellshark recorded from the Indo-West Pacific on the continental slope at depths of 219–450 m. Little is known of the biology of the species. Known from two populations, one off Vietnam and China (Hainan Island) and one off northwestern Australia. Little fishing occurs in the species' area of occurrence off Australia, and with no threats evident towards that population, it is assessed as Least Concern. Outside Australia the species is Data Deficient, with no information on its population status, and although it is a known component of demersal trawl bycatch, no details are available.
Draughtboard Shark <i>Cephaloscyllium isabellum</i>	Francis, M.P.	LC	2003	Endemic to New Zealand, from 0-673 m, mostly <400 m, soft substrates and rocky reefs. Commonly caught as bycatch in trawl and rock lobster fisheries, and probably also in some set net fisheries. Reported annual commercial catches were 74-540 tonnes between 1988 and 1991 when a shark liver fishery was operating, but catches declined rapidly when this industry stopped. Since then, reported catches have been less than 5 tonnes per year, and most sharks are probably discarded. They are very hardy and able to survive removal from the water for long periods, so survival of sharks returned to the sea is probably high. Widespread and common throughout its range.
Australian Swell Shark <i>Cephaloscyllium laticeps</i>	White, W.T.	LC	2003	<i>Cephaloscyllium laticeps</i> is a common, shallow water (to at least 60 m) southern Australian endemic that forms a significant component of the southeastern Australia shark gill net fishery. Although catches of <i>C. laticeps</i> in this fishery were shown to drop between 1973-76 and 1998-2001, i.e. 660 to 305 animals caught per 1,000 km-hours of 6-inch gill net, this species is typically released as it is of little commercial value. There is also limited fishing activity in the western part of its range. Mortality is also probably low because this species is extremely resilient and can survive for a considerable length of time out of the water. Therefore, <i>C. laticeps</i> appears to be of low risk in the well managed fishery in southeastern Australia and indeed throughout its range.
Balloon Shark (Indian Swell Shark) <i>Cephaloscyllium sufflans</i>	Robinson, L. & Nel, R.	LC	2004	This catshark is endemic to southern Africa and occurs over a wide depth range of 40–600 m. Parts of its range are in areas where trawl fisheries occur and juveniles of this species are often encountered as bycatch. Abundance of this species is not well known although current indications are that the population is healthy, thus the assessment is Least Concern. However, there is a need for monitoring of the effects of trawl fisheries within its range, particularly with plans for expansion of these into deeper waters in the future, which may impact the adult population and egg-laying habitat.
Whitefin Swell Shark <i>Cephaloscyllium</i> sp. nov. A [Last & Stevens, 1994]	Barratt, P.J. & Kyne, P.M.	NT	2003	<i>Cephaloscyllium</i> sp. nov. A is endemic to southeastern Australia on the upper continental slope in depths of 240–550 m. Very little is known about the biology of this species, and the extent of its distribution is uncertain. It is susceptible to trawling and is known to be a common component of bycatch in southern Australia. Declines of more than 30% have been observed for catch rates off New South Wales over a twenty-year period. However, these declines are documented only over about one third of its known range. There is also evidence of a slight downward trend in population size in the South East Trawl Fishery Observer Program off southern Australia. Given the intensity of trawling over its area of occurrence, which may lead to a continued population decline, catches of this species need to be monitored.
Saddled Swell Shark <i>Cephaloscyllium</i> sp. nov. B [Last & Stevens, 1994]	Barratt, P.J. & Kyne, P.M.	DD	2003	There are virtually no data for the biology of this undescribed species endemic to eastern Australia. The distribution of <i>Cephaloscyllium</i> sp. nov. B is uncertain, but thought to be quite restricted. It is likely to be quite rare in this area. Current fishing effort in its area of occurrence is

				small, however, any future expansion of trawling effort may pose a threat to this benthic species, which requires further study to determine its status.
Northern Draughtboard Shark <i>Cephaloscyllium</i> sp. nov. C [Last & Stevens, 1994]	Barratt, P.J. & Kyne, P.M.	NT	2003	<i>Cephaloscyllium</i> sp. nov. C is restricted to the east coast of Australia between southern Queensland and central New South Wales. It is known to be rare within this area, as intensive trawling has revealed only a few specimens. This area receives high trawling effort from Queensland and New South Wales prawn trawl fisheries. There are virtually no data on the biology of this endemic species. Given its apparent rarity, restricted distribution and bathymetric range, and the intensive trawling effort in its area of occurrence, the species is considered likely to be close to Vulnerable (A4, B1ab, and/or C1). Research is required to determine population size and, therefore, more accurately assess its conservation status.
Narrowbar Swell Shark <i>Cephaloscyllium</i> sp. nov. D [Last & Stevens, 1994]	Kyne, P.M. & Cavanagh, R.D.	DD	2003	Known only from a few specimens trawled at 440 m off Flinders Reef, Queensland. May be more widely distributed on the northeastern Australian continental slope. Nothing known of its biology. Presently, low fishing effort in its area of occurrence. Distribution and status needs to be better defined.
Speckled Swell Shark <i>Cephaloscyllium</i> sp. nov. E [Last & Stevens, 1994]	Kyne, P.M. & Cavanagh, R.D.	DD	2003	Known only from a few specimens trawled in 390–440 m off northwestern Australia and in 600–700 m off northeastern Australia. May be more widely distributed on the northern Australian continental slope. Nothing known of its biology. Presently, low fishing effort in area of occurrence. Distribution and status needs to be better defined.
Sawtail Shark <i>Galeus boardmani</i>	Kyne, P.M. & Bennett, M.B.	LC	2003	<i>Galeus boardmani</i> is a small, apparently common, but little known catshark found endemic to southern Australian waters between southeastern Queensland and Western Australia. It is demersal on the outer continental shelf and upper slope. Little is known of its biology. It is of only minor importance to fisheries, but is regularly taken as bycatch in various demersal trawl fisheries. The species is widespread in southern Australian waters with a wide bathymetric range and there appear to be no major threats to this species at present.
Slender Sawtail Shark <i>Galeus gracilis</i>	Kyne, P.M. & Cavanagh, R.D.	DD	2003	A small, little-known catshark reported from isolated records from northern Australia. Found on the continental slope in depths of 290–470 m. <i>Galeus gracilis</i> appears to be rare and nothing is known of its biology. Limited trawl fisheries operate in its area of occurrence, and while the species is of no commercial interest, bycatch levels are unknown. No information is available to assess the species beyond Data Deficient.
Southern Sawtail Catshark <i>Galeus mincaronei</i>	Rincon, G.	VU (B1ab(v))	2004	So far, recorded only off Santa Catarina and north of Rio Grande do Sul States, Brazil, on the upper continental slope in depths of 236–600 m. This small species is frequently captured by <i>Lophius</i> spp. and squid fishery fleets in its area of occurrence (bottom longline and trawl, and baited trap). Fishing effort in the squid fishery is increasing and given the limited range of this species even small catches are a matter of concern. The species is assessed as Vulnerable B1ab(v) given its narrow range and increasing demersal trawl effort (together with longline and trap fisheries), inferring a continued decline in the number of mature individuals.
African Sawtail Catshark <i>Galeus polli</i>	Fowler, S.L.	LC	2004	A small deepwater catshark of the outer shelf and slope at 160–720 m. Part of its range lies within heavily fished areas, but also extends into much deeper water where there is no significant exploitation pressure. In addition, the small size of this shark makes it less susceptible to trawl capture. The deepwater fisheries off the Namibian coast, where it appears to be most abundant, are well managed and recorded, which will enable possible future changes in abundance to be monitored. Abundance needs to be assessed quantitatively along its entire range (from Northern Cape Province, South Africa, northwards to Morocco). Currently Least Concern.

Northern Sawtail Shark <i>Galeus</i> sp. nov. B [Last & Stevens, 1994]	Kyne, P.M. & Cavanagh, R.D.	DD	2003	An undescribed, little-known catshark recorded from a narrow distributional and bathymetric range off northeastern Australia (Queensland). There is nothing known of its biology and little fishing effort in its area of occurrence. No information available to assess the species beyond Data Deficient.
Lined Catshark <i>Halaelurus lineatus</i>	Cliff, G.	DD	2004	A small catshark of the continental shelf and upper slope (to 290 m) endemic to South Africa and Mozambique. This species is taken as a bycatch in the prawn trawl fishery on the Tugela Banks, on the inshore shelf off northern KwaZulu-Natal (KZN), South Africa. It was found in 18% of the trawls examined, with a 19% mortality rate, thus fishers should be encouraged to return the live sharks to the sea, especially as they are little utilised given their small size. The bycatch may constitute a threat, particularly as it includes large numbers of mature specimens with many of the females possibly being pregnant. Catch rates over a longer time period are needed to assess the status of this species, particularly to compare with the 1994 study in terms of catch trends and fishing pressure. No details are available of catches in the Mozambique prawn trawl fishery where it may also be caught as bycatch. Until further study it is not possible to assess this species beyond Data Deficient.
Tiger Catshark <i>Halaelurus natalensis</i>	Robinson, L.	DD	2004	This catshark is endemic to the southern African continental shelf off South Africa and Mozambique. Its distribution is not well known, although the range appears fairly restricted. Although it is not a targeted species, it is caught by bottom trawlers as discarded bycatch and also taken by sports anglers with rod and reel. Insufficient information available to assess this species beyond Data Deficient and monitoring of abundance and changes in fishing pressure is required.
(cf. Speckled Catshark) <i>Halaelurus</i> sp. nov. 1 [White]	White, W.T.	LC	2003	Recent comparisons between Indonesian and Australian specimens of <i>Halaelurus boesemani</i> has revealed distinct morphological, meristical and colouration differences (W. White, unpublished data). Mature males of the Australian <i>Halaelurus</i> sp. 1 (cf. <i>boesemani</i>) are also smaller than the eastern Indonesian form. Furthermore, the Indonesian <i>Halaelurus</i> sp. 2 (cf. <i>boesemani</i>) more closely resembles that originally described by Springer and D'Aubrey (1972) from off the coast of Somalia, however, further investigation is required to ascertain whether these are indeed the same species. The Australian <i>Halaelurus</i> sp. 1 (cf. <i>boesemani</i>) is known only from the continental shelf off Western Australia in depths of 110-250 m. Although there is a small trawl fishery in this area, such small scyliorhinids are of little or no commercial value and are thus presumably discarded. This species is unlikely to be incidentally caught by recreational fishers. The extent of occurrence of this species appears to be quite small and probably less than 20,000 km ² , thus, could come under a significant threat if fishing pressure was to increase within its range. However, there is no evidence or reason to suspect that the population is in decline or that the population is fragmented.
Puffadder Shyshark <i>Haploblepharus edwardsii</i>	Compagno, L.J.V. & Kroese, M.	NT	2000	Locally common, but with a very limited range lying wholly within heavily fished and potentially degraded inshore waters. Changes in nearshore fisheries, for example leading to increased bycatch, or habitat degradation could affect the whole population of this South African endemic.
Brown Shyshark <i>Haploblepharus fuscus</i>	Compagno, L.J.V. & Kroese, M.	NT	2000	Locally common, but with a very limited range lying wholly within heavily fished and potentially degraded inshore waters. Changes in nearshore fisheries, for example leading to increased bycatch, or habitat degradation could affect the whole population of this South African endemic.
McMillan's Catshark	Paul, L.J.	DD	2003	Known only from two New Zealand specimens, and three off southeastern Africa, in about 1,000

<i>Parmaturus macmillani</i>				m. This may be a rare species within the 1,000-1,500 m depth range currently being fished, or the captures at 1,000 m may simply be at the shallow end of a much greater depth range.
Short-tail Catshark <i>Parmaturus</i> sp. nov. A [Last & Stevens, 1994]	Kyne, P.M. & Cavanagh, R.D.	DD	2003	A catshark known only from a single specimen captured on the Saumarez Plateau off northeastern Australia (Queensland) at a depth of 590 m. May be a rare endemic with a restricted range. Further specimens and research is required.
Pyjama Shark <i>Poroderma africanum</i>	Compagno, L.J.V.	NT	2000	This South African shark has a restricted zoogeographic and bathymetric range in a heavily fished, well-populated area and has no specific protection. Although generally not targeted at present, it is subject to fisheries pressure from commercial and sports fisheries. Its status is of concern because of increasing regional fisheries for small sharks for the export market over the last few years. Introduction of legislation to decommercialise the species would probably result in a revised assessment of Lower Risk (conservation dependent).
Narrowmouth Catshark <i>Schroederichthys bivius</i>	Chiaromonte, G.E.	DD	2000	The narrowmouth catshark is restricted to the western south Atlantic and eastern south Pacific continental shelf, from Brazil to Chile, at depths of 10-359 m. Good data are available on the biology of this poorly known, albeit moderately common inshore and offshore shark, but inadequate information on the possible impacts on its populations of habitat degradation (particularly within its estuarine nursery grounds) and fisheries.
Chilean Catshark <i>Schroederichthys chilensis</i>	Lamilla, J.	DD	2004	A benthic catshark recorded inshore down to 100 m depth. Endemic to Peru and Chile in the Southeast Pacific. Maximum size 60 cm total length (TL). Information concerning its biology and population status is scarce. A bycatch species of inshore demersal trawl and longline fisheries, however species-specific catch information is not available. This species is a popular laboratory animal and over-collecting for research purposes may impact small, localised populations. Insufficient information available to assess the species beyond Data Deficient at this time.
Lizard Catshark <i>Schroederichthys saurisqualus</i>	Vooren, C.M. & Soto, J.M.R.	VU (B1ab(iii,v))	2004	The known area of distribution of this recently described Brazilian endemic catshark is small, comprising only about 600 km of coastline. Within this area the species occurs at low density on the upper continental slope at depths of 250–500 m, and sporadically on the outer edge of the continental shelf. The species uses coral patches for egg-laying (a trawl survey caught egg-laying females on a patch of stony coral <i>Dophelia pertusa</i> at 317 m depth in 2001, but sampling of the same locality in 2002 revealed that the coral patch was no longer present and no <i>S. saurisqualus</i> were caught). The patches of coral appear to be naturally scarce and of small size, of the order of perhaps 100–1,000 m ² only for individual patches. Such patches are vulnerable to destruction by trawl fishing operations, perhaps irreversibly or with a long recovery time at the low temperatures (approximately 5–8°C) that prevail in this habitat. Although coral patches may be more abundant in areas with rough bottom, which have not been studied by trawling and which may be the preferred habitat of the species, it is assessed as Vulnerable because of its low density, small range and presumed habitat loss. Further surveys are required to confirm this assessment.
Slender Catshark <i>Schroederichthys tenuis</i>	Charvet-Almeida, P.	DD	2004	This small, benthic deepwater endemic catshark has a relatively restricted range in the Southwest Atlantic off Suriname and northern-central Brazil. Information on its life history and population data are sparse. It reaches a maximum size of at least 43 cm total length (TL) and is oviparous. It is taken as bycatch of bottom trawl fisheries and is occasionally landed. Landings seem to be increasing. Further studies, monitoring and more data regarding the life history and population biology of this species are needed. A new assessment is highly recommended in the near future when more information is available.
Polkadot Catshark	Rincon, G.	DD	2004	This poorly known, small catshark occurs on the outer continental shelf of southern Brazil and

<i>Scyliorhinus besnardi</i>				Uruguay, known from depths of 140–190 m. There is no information from Uruguay at this time. Although frequently caught by the bottom longline fishery and also taken in deepwater trawl fisheries in Brazil, captures mostly consist of adult males and females and not in significant numbers. However, in some areas, sharks of the genus <i>Scyliorhinus</i> (<i>S. haeckelii</i> and <i>S. besnardi</i>) are now of commercial importance and their value rose substantially during 2001 and 2002. It is uncertain if all those captured are retained for sale, or if a proportion are discarded. At present there is not enough information on catches, biology or population status to assess the species beyond Data Deficient. Catches need to be monitored with respect to the developing commercial interest, particularly given the restricted geographical and bathymetrical range of this species.
Yellowspotted Catshark <i>Scyliorhinus capensis</i>	Compagno, L.J.V., Krose M. & Brash, J.	NT	2004	<i>Scyliorhinus capensis</i> is a relatively large yellow spotted catshark endemic to southern Namibia and most of South Africa. It is moderately common on the offshore banks, which are heavily fished by a large demersal hake trawl fishery. They are taken as discarded bycatch in this fishery and may also be affected by habitat degradation from trawling. Catch and trend data are lacking, but there is concern that rates of bycatch may be unsustainable. Although there are regions within the range of the hake fishery that are untrawlable, which likely serve as refuges for <i>S. capensis</i> (particularly given that they seem to prefer rocky reefs to soft bottom habitat), the species is assessed as Near Threatened because of concern regarding bycatch levels. Population trends require monitoring.
Freckled Catshark <i>Scyliorhinus haeckelii</i>	Rincon, G.	DD	2004	<i>Scyliorhinus haeckelii</i> is a small deepwater catshark with only occasional records along its distribution (Bahia State, Brazil, south to Uruguay). Previous records north of Bahia State (to Venezuela) are erroneous and based on confusion with other similar species. Very little is known about this species and there is no available information to infer population size, geographical distribution (which needs to be better defined due to confusion with other <i>Scyliorhinus</i> spp.) and biology. The species is taken as bycatch in southern Brazil by demersal trawlers and longliners and since commercial interest is developing for catsharks in this area, and their value increasing, catch monitoring is a priority. The species is captured in low numbers by bottom trawl nets off Uruguay.
Whitesaddled Catshark <i>Scyliorhinus hesperius</i>	Leandro, L.	DD	2004	An uncommon deepwater tropical catshark recorded from 274–457 m in the Western Central Atlantic where it is restricted to the continental slopes off Honduras, Colombia and Panama. Reaches at least 47 cm total length (TL) but nothing is known of its biology. Of no interest to fisheries at present and adults may occupy habitat unfavourable to trawling. Insufficient information available to assess the species beyond Data Deficient at this time.
<i>Scyliorhinus</i> sp. nov. [Rincon, Lessa, Gadig & Gomes]	Rincon, G.	DD	2004	This undescribed species is currently known from only 20-30 specimens captured off northeast Brazil from Rio Grande do Norte to Bahia State. All specimens were captured by bottom longline research surveys on the upper continental slope at 200-500 m. Almost all specimens were adult males with only two immature females recorded. There are no direct threats as the area where this species occurs is not suitable for trawling and not currently exploited by bottom longlines or pots. However, there is insufficient information to assess it beyond Data Deficient at this time.
Family Proscylliidae				
African Ribbontail Catshark <i>Eridacnis sinuans</i>	Brash, J.	LC	2004	<i>Eridacnis sinuans</i> is a very small, deepwater (outer continental shelf and upper slope) catshark, endemic to the southwestern Indian Ocean (South Africa, Mozambique and Tanzania) with part of its range being impacted by trawl fisheries. Most of the catches off KwaZulu-Natal (South

				Africa) are of males, indicating that sex segregation occurs and females may inhabit areas of low fishing pressure or unfished areas. Because only part of its range is currently impacted by fisheries, and escapement and survival may be high for this small species, it is currently assessed as Least Concern. However, catch trends should be monitored; there is concern that fisheries may extend into deeper water in the near future and <i>E. sinuans</i> is known to have low fecundity.
Family Pseudotriakidae				
Slender Smoothhound <i>Gollum attenuatus</i>	Francis, M.P.	LC	2003	<i>Gollum attenuatus</i> is endemic to New Zealand and adjacent oceanic ridges, and taken as bycatch in bottom trawl fisheries. Fecundity is extremely low (two pups/litter), but there is no information on population size or status. However, large parts of the species' range (Norfolk and Three Kings Ridges) are outside the fished areas, suggesting that there is a relatively unfished reservoir. Should these areas become fished in future, the status could move quickly towards a threatened category.
False Catshark <i>Pseudotriakis microdon</i>	Kyne, P.M., Yano, Y. & White, W.T.	DD	2004	A wide-ranging but sporadically captured, large, deepwater shark with most records from the Northern Hemisphere (it appears rarer in the Southern Hemisphere). May be cosmopolitan, but as yet has not been recorded from the South Atlantic or Eastern Pacific. Primarily inhabits the continental and insular slopes at depths of 200–1,890 m, but also occasionally occurs on the continental shelf. <i>Pseudotriakis microdon</i> reaches a maximum size of 296 cm total length (TL). This species displays a modified form of oophagy, the first confirmed oophagous species outside the Lamniformes. Fecundity is low (typically two embryos per litter), and this, combined with an estimated long gestation period and presumed slow growth rate may place populations at risk of localised depletion if the species becomes more regularly caught. At present the species is of no interest to fisheries but is taken sporadically as bycatch in deepwater longline and trawl fisheries. Deepwater fisheries are generally expanding globally, and given the biology of this species, bycatch of this rare fish may be of concern for any localised populations in areas where fishing may be concentrated, such as deepwater reefs or seamounts. However, since there is no available information on population trends, and because of the overall lack on information concerning biology (particularly age, growth rates and gestation) the species is assessed as Data Deficient.
Family Leptochariidae				
Barbeled Houndshark <i>Leptocharias smithii</i>	Compagno, L.J.V.	NT	2000	This small live-bearing shark is (or was?) relatively common within its limited range in heavily fished tropical inshore West African coastal waters. Taken as utilised bycatch, but fisheries statistics are lacking.
Family Triakidae				
Whiskery Shark <i>Furgaleus macki</i>	Simpfendorfer, C.A. & McAuley, R.B.	LC	2003	This species is endemic to southern and western Australia, with the greatest abundance in south-western Western Australia where it is a target species in a demersal gillnet fishery. The population has decreased to approximately 26% of virgin levels, but has been relatively stable since the mid 1980s. The fishery is tightly managed and regular assessments of <i>Furgaleus macki</i> are undertaken. Since the population has been stable for about three generations and the gillnet fishery is managed this species is assessed as Least Concern.
School Shark <i>Galeorhinus galeus</i> (See footnote 6)	Stevens, J.D.	VU (A1bd+2d)	2000	The School Sharks is a widespread, mainly coastal and bottom associated shark of temperate areas which has been fished throughout its range. They are particularly long-lived, and slow to mature. Because of the species' low productivity and its history of stock collapse (e.g. in the

	Walker, T.I., Stevens, J.D. & Paul, L.J.	VU (A1bcd) in Australia* NT in New Zealand*	2003	Eastern Pacific and Brazil), the global population is considered to have been reduced significantly in the past 60-75 years (three generations). Stock assessment of the Australian population suggests that current biomass is between 20 and 59% of the total virgin biomass, or between 19-43% of mature virgin biomass. A widespread mainly coastal and bottom associated shark of temperate areas which has been fished in all parts of its distribution. In the 2000 Red List, <i>Galeorhinus galeus</i> was listed as Vulnerable globally and Conservation Dependent in Australia. This updated regional assessment details the classification of Vulnerable for Australia, and Near Threatened for New Zealand. The former is based mainly on two pieces of evidence: (1) In southern Australia the current mature biomass has been estimated from age-based model outputs to be below 20% of the level before commercial target fishing began in the 1920s, and; (2) Very low biological productivity; maximum age is potentially 60 years, age at maturity in females exceeds 10 years. In New Zealand, the stock has been managed for 17 years, and landings have been stable for the past decade. However, commercial TACs introduced following some CPUE declines have been regularly exceeded. Fisheries for the species are managed by ITQs in both New Zealand and Australia that should allow stocks to begin to rebuild, but the sustainable catch level in New Zealand remains unknown.
Sailback Hound Shark <i>Gogolia filewoodi</i>	Fowler, S.L.	DD	2003	Known from only one pregnant female (carrying two near-term pups, suggesting a low intrinsic rate of population increase), collected off a river mouth in water 73 m deep. Presumably an endemic of the New Guinea continental shelf. The extent of occurrence of this species is likely small (less than 20,000 km ²), but there is no evidence of major threats to the habitat or significant fishing pressure (this very distinctive species has not been reported from landing sites or markets).
Darksnout Hound Shark <i>Hemitriakis abdita</i>	White, W.T.	DD	2003	Very few specimens of <i>Hemitriakis abdita</i> have been recorded and since, at least off Queensland, it occurs in waters 225-400 m deep, it is unlikely to be caught in fisheries within its range.
Sicklefin Hound Shark <i>Hemitriakis falcata</i>	Kyne, P.M. & Cavanagh, R.D.	LC	2003	A rare Australian endemic with a restricted distributional and bathymetrical range (146-197 m) on the outer continental slope off northwestern Western Australia. Fisheries operate both inshore (< 100 m) and offshore (> 200 m) from its known depth range, while the area in between receives little fishing effort. <i>Hemitriakis falcata</i> does not meet the B criterion for threatened status, as while its range is limited, there is currently no evidence of heavy fishing, and therefore no evidence of a decline in range, habitat quality or number of mature individuals. However, given its rarity and occurrence within only a narrow range, any future expansion of fishing in the area could impact upon the viability of the species (at present this looks unlikely as interest in the North West Slope Trawl Fishery is declining, but the situation should be monitored).
Whitefin Topeshark <i>Hemitriakis leucoperiptera</i>	Compagno, L.J.V.	EN (B1+2ce, C2b)	2000	This little-known inshore tropical shark is found only in heavily fished and environmentally degraded Philippine coastal waters. Only two free-living specimens are known from an extremely restricted range. There are no records over the last fifty or more years.
Pencil Shark <i>Hypogaleus hyugaensis</i>	Simpfendorfer, C. & Compagno, L.J.V.	NT	2000	This small triakid shark has a patchy distribution in the Indo-West Pacific. Given the minor nature of this species in fisheries, it is unlikely that it faces an immediate threat of extinction. However, its patchy distribution and relatively low abundance throughout its range increases the potential for future fishing pressure to cause problems.
Longnose Hound Shark	Kyne, P.M. &	LC	2003	A small houndshark reported from northwestern Western Australia, Queensland and Vanuatu.

<i>Iago garricki</i>	Cavanagh, R.D.			Recorded from the continental slope at depths of 250–475 m. The species produces small litters of 4–5 young, but little else is known of its biology. It is of minor interest to fisheries although it is likely to be taken as bycatch in the small Australian Commonwealth managed North West Slope Trawl Fishery. More information is needed on its biology and abundance, particularly as it seems to be naturally rare.
Gummy Shark <i>Mustelus antarcticus</i>	Walker, T.I.	LC	2003	<i>Mustelus antarcticus</i> is a highly abundant southern Australian endemic with relatively high productivity (longevity 16 years, low age at maturity, eight year generation period, and up to 38 pups per litter). It is harvested over its entire range, but about two-thirds of the catch is taken from Bass Strait. There is no population fragmentation. Mandatory adoption of middle-sized mesh-sizes in the fishery and the large area closure of all Victoria waters to shark fishing provide effective protection of large breeding females. Age-based fishery assessment models indicate that current catch levels are sustainable and that, while the number of births is closely related to the number of maternal animals, recruitment to the fishery at age two years is remarkably stable for a wide range of population sizes. In Bass Strait, South Australia and Western Australia, stock assessments indicate that biomass has been 40–55% of initial biomass for most of the past two decades, with less than 20% change in population size over the three generation period. A steady decline in fishing effort since the mid-1980s and adoption of a total allowable catch (TAC) during 2000 has led to a steady increase in abundance of mature and maternal animals in the population. Biomass is above the level required to provide the maximum sustainable yield. This species is therefore updated from the 2000 assessment of Conservation Dependent to Least Concern.
Starry Smoothhound <i>Mustelus asterias</i>	Ellis, J.	LC	2000	This coastal species is widespread, although not abundant, from Northern Europe to Northwest Africa, including the Mediterranean. It is not considered to be in any immediate threat of over-exploitation. It is occasionally caught in trawls, which may be a reflection of it favouring rocky areas, where it can be caught in gill nets. There is no evidence of a decline in the population, and it is not subject to a targeted commercial fishery.
Dusky Smoothhound <i>Mustelus canis</i>	Conrath, C.	NT	2000	This small shark occurs in the Western Atlantic, Gulf of Mexico and Caribbean from Massachusetts to Northern Argentina. It is taken in parts of its range for food. A recent rapid expansion in directed gillnet fishing has caused a rapid decline in some stocks of large females in US waters. All fisheries are unmanaged.
Sharptooth Smoothhound <i>Mustelus dorsalis</i>	Leandro, L.	DD	2004	An uncommon, inshore, tropical triakid from the Eastern Pacific, known from Southern Mexico through Central America to Ecuador on the continental shelves. Reaches a maximum size of 64 cm total length (TL), is viviparous with a small litter size (four young) but little else is known of its biology. Probably taken by inshore fisheries throughout its range along with other triakid species, however data are not available. Although it is a small species (therefore presumably relatively fast-growing), it has a low fecundity and is uncommon compared with other houndsharks. Population studies and catch monitoring needs to be undertaken.
Striped Smoothhound <i>Mustelus fasciatus</i>	Hozbor, N., Vooren, C.M. & Lamónaca, A.F.	CR (A2abd+3bd+4a bd)	2004	This species is endemic to a restricted area of the inner continental shelf (South Brazil to Argentina) in the Southwest Atlantic ocean. In southern Brazil fishing is intense in the habitat of this demersal shark. CPUE is not available because the species is landed with others as “unidentified shark”. Gravid females migrate to shallow inshore waters to give birth in October-December. The small juveniles remain in this area, known to be the nursery grounds for this species. The fishery in this area catches the gravid females and small juveniles. During the 1980s, neonates were caught in large numbers in gillnets set off the beach during summer (10-

				100 per set), but by 2003 are caught only sporadically. This is clear evidence that the species is nearing extinction in Brazilian waters. In the coastal region of the Bonaerensean District of northern Argentina and Uruguay, the biomass of the species, as measured by trawl surveys, decreased by 96% between 1994 and 1999. Fishing for more abundant species is still intense across this species' limited distribution, and observed declines are significant to warrant a Critically Endangered assessment. There is serious concern regarding further declines in the absence of conservation and enforced management measures.
Rig <i>Mustelus lenticulatus</i>	Francis, M.P.	LC	2003	Rig is an abundant endemic distributed throughout New Zealand. Annual commercial catches of 1,600-1,900 tonnes are constrained by Individual Transferable Quotas (ITQs). Rig are fast growing, and mature at moderate ages (females 7–8 years). Depleted stocks have rebuilt under the Quota Management System that has been in place since 1986, when some stocks had been identified as severely overfished. Of five management stocks, one now has increasing catch per unit effort, several are stable and one is declining. This species assessment has been updated from Conservation Dependent to Least Concern.
Common Smoothhound <i>Mustelus mustelus</i>	Ellis, J.	LC	2000	This coastal species is widespread, although not abundant, from Northern Europe to South Africa, including the Mediterranean. Although this species is not abundant and taken in mixed-species fisheries, it is widespread and there is no evidence of a decline in the population.
Grey Gummy Shark <i>Mustelus</i> sp. nov. A [Last & Stevens, 1994]	McAuley, R.B.	LC	2003	This Australian endemic is widespread in deep coastal waters (100-300 m). Limited biological data suggest it is a relatively productive species. It occurs within the outer depth ranges of the Western Australian West Coast Demersal Gillnet and Demersal Longline Fishery, in which it is a known component of the bycatch. Catches are small (probably more than four tonnes per year). The species is most common in deeper coastal waters, outside the principal operational areas of the demersal gillnet fishery. Its range also includes a large area (~10,000 km ²) where shark fishing is prohibited. The species has not been recorded from the Pilbara Fish Trawl fishery despite extensive sampling but is an irregular bycatch species in the Queensland East Coast Trawl Fishery.
White-spotted Gummy Shark <i>Mustelus</i> sp. nov. B [Last & Stevens, 1994]	McAuley, R.B.	LC	2003	This Australian endemic is possibly widespread in deep coastal waters (120-400 m). Limited biological data suggest it is a relatively productive species. It occurs at the northern extent of the Western Australian West Coast Demersal Gillnet and Demersal Longline Fishery. It was a negligible component of this fishery's bycatch before the prohibition on shark fishing north of 26°S in 1993. Since then, it is unclear whether <i>Mustelus</i> sp. nov. B still occurs as bycatch and the large 'closed' area (ca. 10,000 km ²), probably offers a significant refuge. It has not been recorded from the Pilbara Fish Trawl fishery despite extensive sampling, but is an irregular bycatch species in the Queensland East Coast Trawl Fishery. The species is most common in deeper coastal waters, outside the principal operational areas of most commercial fisheries within its range.
Flapnose Houndshark <i>Scylliogaleus queckettii</i>	Compagno, L.J.V.	VU (B1+2c, C2b)	2000	An uncommon endemic Houndshark with low fecundity and an extremely restricted range off eastern South Africa (northeastern part of Eastern Cape Province to northern KwaZulu-Natal), within inshore waters subjected to heavy fishing pressure and potential habitat degradation. The species occurs close inshore at the surfline and in the intertidal. Presumably only one population exists, estimated to be comprised of fewer than 10,000 mature adults.
Sharpfin Houndshark <i>Triakis acutipinna</i>	Compagno, L.J.V.	VU (C2b)	2000	This Houndshark was described in 1968 from two specimens collected off the Isla de la Plata, Ecuador. It has not been reported since. It is extremely rare and has a very restricted distribution in waters exploited by unregulated shark fisheries.

Spotted Gully Shark <i>Triakis megalopterus</i>	Compagno, L.J.V.	NT	2000	Uncommon inshore species with limited distribution from Southern Angola to KwaZulu-Natal, South Africa, from the intertidal and surfline to 50 m depth. These waters are exploited by unregulated shark fisheries which take this shark as bycatch. It would be assessed as Lower Risk (conservation dependent) if the South African fishery was decommercialised.
Leopard Shark <i>Triakis semifasciata</i>	Smith, S.E.	LR/cd	2000	This mid-sized coastal shark is fairly common in bays and estuaries of the eastern North Pacific from California, USA, to the northern Gulf of California, Mexico. It is taken both commercially and by recreational anglers. Although a slow-growing, late-maturing shark with low productivity, management introduced in recent decades has protected the core of the population in California and Oregon waters from excessive harvesting. Little is known of the stock status in Mexico.
Family Hemigaleidae				
Weasel Shark <i>Hemigaleus microstoma</i>	Simpfendorfer, C.A.	LC <i>NT in South East Asia</i>	2003	This species occurs on continental shelves out to 170 m throughout its disjunct range in the Indo-West Pacific. In northern Australia it is commonly taken in trawl fisheries, including those for prawns and fish and also taken in gillnet and longline fisheries, but not in large numbers. In other countries data is lacking, but it appears not to be abundant. This small species has relatively high productivity – it produces large litters (up to 19 pups) after a six-month gestation period, probably grows fast, and matures at an early age. These life history parameters are likely to enable it to sustain reasonable levels of fishing pressure and it is assessed as Least Concern globally. However, it is fished in high numbers in South East Asia, and despite its relatively high productivity, there is enough concern to warrant a Near Threatened assessment in this region (where it may meet the criterion Vulnerable A2d).
Fossil Shark <i>Hemipristis elongatus</i>	White, W.T.	VU (A2bd+3bd+4bd) <i>LC in Australia*</i>	2003	<i>Hemipristis elongatus</i> is commonly landed in coastal fisheries throughout its shallow (to 130 m) tropical Indo-West Pacific range (to a lesser extent in Australia) since the flesh is considered of very high quality, as are the fins and liver. The intensive and largely unmanaged net and trawl fisheries that occur throughout its range (with the exception of Australia) fish heavily in its known habitat and are likely to catch this species if present. Many shark fisheries and stocks in the region are known to be over-exploited, with catches declining, and market surveys indicate that this species has declined in areas where it was once considered common. This trend is likely to continue in future in the absence of management and because of continued, if not increasing fishing effort. Australia is the exception to this pattern; the species is only a minor component of northern Australian trawl fisheries and is of little commercial value so is considered Least Concern here.
Family Carcharhinidae				
Silvertip Shark <i>Carcharhinus albimarginatus</i>	Pillans, R.D.	DD** <i>LC in Australia*</i>	2003	<i>Carcharhinus albimarginatus</i> has a wide but fragmented distribution throughout the tropical Indo-Pacific. It is a large, slow-growing whaler species, which appears to be relatively site-specific, possibly with limited dispersion. It is not exploited commercially in Australian waters, where it is assessed as Least Concern, but elsewhere is presumably caught in artisanal fisheries and commercial line fisheries (target and bycatch). Although there is no evidence that this species is captured in significant numbers throughout its range and no population or trend data, its localised behaviour, fragmented populations and life history characteristics indicate that even remote populations are highly vulnerable to target shark fisheries (for meat or fins); more information is needed on the status of populations throughout its range.
Bignose Shark <i>Carcharhinus altimus</i>	Pillans, R.D.	DD**	2003	<i>Carcharhinus altimus</i> is a deepwater, diurnally migrating (30–430m) whaler shark which probably has a circumglobal distribution on the continental shelf edge in tropical and warm seas,

		<i>LC in Australia*</i>		although records are patchy. There are no target fisheries for this species, although it is taken as bycatch in deep set pelagic longlines including widespread tuna longline fisheries, and occasionally in bottom trawls. Reported catches are small, but shark bycatch in longline fisheries is not reported fully throughout the species' range and cannot be used to assess mortality or population trends. This species is not commercially fished in Australia, where it is assessed as Least Concern; elsewhere there is a need for further information on fisheries catches and population status.
Graceful Shark <i>Carcharhinus amblyrhynchoides</i>	Simpfendorfer, C.A.	NT	2000	A little studied coastal Indo-West Pacific continental shelf species impacted throughout its range by incidental capture in commercial fisheries. Although not targeted by directed fisheries, it is widely landed. Further life history research is required.
Grey Reef Shark <i>Carcharhinus amblyrhynchos</i>	Smale, M.J.	NT	2000	This widespread social species was formerly common in clear tropical coastal waters and oceanic atolls. Its restricted habitat choice, site fidelity, inshore distribution, small litter size, relatively late age at maturity and increasing unmanaged fishing pressure suggests that this species may be under threat. More fisheries data are required. Although caught in tropical multi-species fisheries, it has considerably greater value if protected for dive tourism.
Pigeon (Java) Shark <i>Carcharhinus amboinensis</i>	Cliff, G.	DD <i>NT in Southwest Indian Ocean</i>	2000	<i>C. amboinensis</i> is sporadically distributed in the Indo-West Pacific, which may, in part, be due to an inability to distinguish it from other members of the genus <i>Carcharhinus</i> . Where fisheries data are available, this species constitutes a very small component of the catch, suggesting that it may not be common. Natal Sharks Board data demonstrate a significant declining trend in catches from 1978-98, and a decrease in mean length in the southwest Indian Ocean. This shark's apparently sporadic distribution and low abundance suggests that it may be unable to sustain heavy, localised fishing pressure, and shark fisheries are intensifying in the Indo-Pacific.
Borneo Shark <i>Carcharhinus borneensis</i>	Compagno, L.J.V.	EN (C2b)	2000	A small rare inshore coastal shark. Known only from five specimens (four from Borneo, one from China), none more recent than 1937. Not recorded in the 1996/97 IUCN-Shark Specialist Group and Sabah Fisheries Department survey of marine sharks in markets in Sabah, Borneo (Malaysia), and not recorded in surveys and collections of sharks in various countries (Thailand, Malaysia, Singapore, China, Taiwan) in the South China Sea during the last half-century. Possibly Critically Endangered.
Bronze Whaler <i>Carcharhinus brachyurus</i>	Duffy, C.A.J. & Gordon, I.	NT <i>VU (A2d+3d+4d) in East Asia</i> <i>DD in Eastern Pacific*</i> <i>LC in Australia, New Zealand, Southern Africa*</i>	2003	<i>Carcharhinus brachyurus</i> is a large coastal shark with low productivity. Although widespread, regional populations appear to be discrete, and movement of individuals between them is thought infrequent or absent, and it does not appear to be naturally abundant anywhere. <i>C. brachyurus</i> is assessed as Vulnerable in East Asia due to intensive fisheries and the apparent widespread collapse of fisheries for large coastal sharks. Coastal multispecies fisheries in the region are likely to continue to depress the population by taking pregnant females and juveniles. Coastal nursery areas in this region are also at risk from development and pollution. Catches appear to be stable in Australia. In New Zealand, although there may have been some reduction in population size due to fishing, <i>C. brachyurus</i> is apparently still common throughout its range. Management of this species in New Zealand, Australia and South Africa is simplified by having most, if not all of the population resident within each nation's EEZ, and the species is assessed as Least Concern in these regions. However, it is assessed as Data Deficient in the East Pacific, where there is no information and it appears to be uncommon or rare. Throughout its range, it is known to be exploited by fisheries, but landings are grouped together with other <i>Carcharhinus</i> species, meaning any population declines are likely to go unnoticed, and its coastal nursery areas are potentially vulnerable to development and pollution. This, together

				with life history characteristics that make it especially vulnerable to overfishing has led to the global assessment of <i>C. brachyurus</i> as Near Threatened. The situation must be monitored as this species could soon qualify for a threatened category, on the basis of population declines due to fisheries exploitation, in other areas.
Spinner Shark <i>Carcharhinus brevipinna</i>	Burgess, G.H.	NT <i>VU (A1bd+2d) in Northwest Atlantic</i>	2000	The Spinner Shark is cosmopolitan in near and offshore warm-temperate, subtropical and tropical continental and insular shelf waters. It is frequently captured in recreational and commercial fisheries. Its meat is valuable and fins are marketable. It frequents nearshore waters as adults and has inshore nursery areas, making it highly vulnerable to fishing pressure and human-induced habitat alteration.
Nervous Shark <i>Carcharhinus caudatus</i>	Bennett, M.B. & Kyne, P.M.	DD <i>LC in Australia*</i>	2003	This species is apparently common in shallow warm coastal waters and embayments within its range (northern Australia, Papua New Guinea and Solomon Islands). Females mature at 5-6 years and reach maximum size at 16 years. Litters of 2-6 are produced at two-year intervals. Relatively little is known about its population structure and dynamics. It occurs in areas of northern Australia that are targeted by a moderate level of prawn trawling and coastal/estuarine gillnetting. This species is probably taken as a bycatch in both fisheries, but with a greater likelihood of being caught in the inshore gillnet fishery. Discard/release mortality is probably significant but these fisheries are not thought to be detrimental to the Australian population (where this species is assessed as Least Concern). It will also be taken (and presumably not discarded) in shallow coastal gillnet and line fisheries elsewhere in its range, where no data are available.
Whitecheek Shark <i>Carcharhinus dussumieri</i>	Bennett, M.B. & Kyne, P.M.	NT <i>LC in Australia*</i>	2003	<i>Carcharhinus dussumieri</i> has a wide tropical Indo-West Pacific distribution in coastal waters down to 170 m, and locally is one of the most common whaler sharks of northern Australia. This small species of shark is particularly susceptible to inshore fisheries, being caught commonly as bycatch in commercial trawling, artisanal fishing, hook-and-line fishing and gillnetting throughout its range. It has a low reproductive capacity, with a normal litter size of two, making it vulnerable to over-exploitation. It also enters the shark fin trade. Globally, this species fails to qualify for Vulnerable (VU A2acd), as while declines have been observed throughout part of its range, quantitative data are not available. In Australia this species is classified as Least Concern, as regional fishing pressure appears sustainable. However, continued fishing pressures throughout its range will result in further declines and populations require monitoring.
Silky Shark <i>Carcharhinus falciformis</i>	Bonfil, R.	LC <i>DD in North Indian, Tropical Pacific and Western North Atlantic*</i>	2000	A common, large, semi-pelagic coastal and oceanic shark of continental shelf and slope waters, discontinuously distributed in all tropical ocean basins. Caught in large numbers as bycatch in oceanic fisheries, but often unreported or misidentified. Landed for meat and fins by multi-species shark fisheries. Reproductive capacity limited (annual rate of population increase estimated as 4%). Despite a lack of population sizes estimates, observations of trends, or indices of abundance for any stock (studies of fisheries impacts are a high priority), the silky shark is considered to be susceptible to over-exploitation by analogy with better known Carcharhinids.
Creek Whaler <i>Carcharhinus fitzroyensis</i>	Bennett, M.B. & Kyne, P.M.	LC	2003	This species is endemic to northern Australia with a broad distribution across tropical seas from the intertidal zone to at least 40 m. The creek whaler is relatively productive for a viviparous shark species and can tolerate the current and projected level of pressure in the northern Australian fisheries.
Galapagos Shark <i>Carcharhinus galapagensis</i>	Bennett, M.B., Gordon, I. & Kyne,	NT	2003	<i>Carcharhinus galapagensis</i> has a widespread, but patchy distribution, occurring at many widely separated island and some coastal sites in the Pacific, Atlantic and Indian Oceans. It is

	P.M.	<i>DD in Australia and Oceania*</i>		classified globally as Near Threatened (just failing to meet Vulnerable A2acd, and likely to be A3d in the near future) because populations at many of these sites may be subject to high levels of fishing pressure (tuna longline fisheries, targeted drop-line fishing, recreational/tourism-based angling). There is considerable potential to cause severe local declines in the number of mature individuals. Evidence of such reductions/extirpations exists for this species around Central America (Pacific and Atlantic Oceans). As the species has a limited intrinsic rebound potential, and there are no data on recruitment to isolated sites, such local depletions could lead to loss of populations at specific localities. Continued fishing pressures throughout its range will result in further declines and populations require monitoring. The species is classified as Data Deficient in Australia and Oceania: although it is not considered to be under threat off Lord Howe Island (Australia) and off the Kermadec Islands (New Zealand) where a marine reserve encompasses the species' range, there is currently no information on these populations.
Pondicherry Shark <i>Carcharhinus hemiodon</i>	Compagno, L.J.V., White, W.T. & Fowler, S.L.	CR (A2acd, C2a(i))	2003	Previously assessed as Vulnerable, this species has been reassessed based on improved information. This very rare Indo-West Pacific species is known from about 20 specimens in museums, obtained from widely separated sites all of which are subject to large, expanding and unregulated artisanal and commercial 'catch all' fisheries. Last recorded in 1979, the species has not been reported since, despite market surveys in much of its range in recent years. Given that it has not been observed in over 20 years, that most known specimens were captured before 1900, and that its previously known habitat and area of occurrence face expanding unregulated fisheries, this species is listed as Critically Endangered. Future survey work should attempt to locate the species.
Smoothtooth Blacktip <i>Carcharhinus leiodon</i>	Compagno, L.J.V.	VU (B1+2c, C2b)	2000	Known from a single record from the Gulf of Aden, where sharks are heavily fished. Presumed to have a very restricted distribution in the North Indian Ocean and a small population.
Bull Shark <i>Carcharhinus leucas</i>	Simpfendorfer, C.A. & Burgess, G.H.	NT	2000	This common tropical and subtropical species occurs in marine, estuarine and freshwater, and can penetrate long distances up large rivers. It is caught in fisheries throughout its range, but is rarely a target species. Its occurrence in estuaries and freshwater makes it very vulnerable to human impacts and habitat modification. Given this species' habitat requirements in areas that are currently heavily impacted by human activity, its life history, and target and bycatch in many inshore fisheries, there is some concern that Bull Sharks may be threatened. Average length of Bull Sharks caught by the Natal Sharks Board have declined significantly.
Blacktip Shark <i>Carcharhinus limbatus</i>	Burgess, G.H. & Branstetter, S.	NT <i>VU (A1bcd+2cd) in Northwest Atlantic</i>	2000	A modest-sized shark widespread in warm-temperate, subtropical and tropical waters worldwide. It frequents inshore waters as adults and has inshore nursery areas, making it highly vulnerable to fishing pressure and human-induced habitat alteration. Frequently captured in commercial and recreational fisheries, its meat is valuable and fins highly marketable.
Oceanic Whitetip Shark <i>Carcharhinus longimanus</i>	Smale, M.J.	NT	2000	This species is a widespread and common large pelagic shark of warm oceanic waters. It presumably has a low reproductive capacity, but is extremely abundant and wide-ranging and is subject to fishery pressure as a common bycatch species with tuna and other pelagic species. This bycatch is either inadequately reported or unrecorded. The fins are highly prized in trade although the carcass is often discarded. Fishery pressure is likely to persist, if not increase in future, and the impact of this fishing pressure is presently unknown.
Hardnose Shark	Simpfendorfer,	NT	2003	A widespread continental shelf species throughout the Indo-West Pacific region. Throughout its

<i>Carcharhinus macroti</i>	C.A. & Stevens, J.D.	<i>LC in Australia*</i>		range it is caught in subsistence, artisanal and commercial fisheries that utilize gillnets, longlines and trawls. Highest levels of exploitation probably occur in Pakistan, India, Sri Lanka and China. It is also reported in catches from Australia and Indonesia. Although of small size, its life history may not be as productive as that of other small carcharhinids (e.g. <i>Rhizoprionodon</i> spp.), making it more susceptible to fishing pressure. It is assessed as Near Threatened because continuing fishing pressure may reduce the population to a level where it may meet the criteria for Vulnerable. In Australian waters fishing does not appear to have had a significant impact and its status is assessed regionally as Least Concern.
Blacktip Reef Shark <i>Carcharhinus melanopterus</i>	Heupel, M.R.	NT	2000	A common and wide-ranging species of the Indo-West Pacific and Central Pacific. Commonly found in shallow waters on and near coral reefs and occasionally in brackish waters. Regularly caught by inshore fisheries and vulnerable to depletion because of its small litter sizes and long gestation periods.
Dusky Shark <i>Carcharhinus obscurus</i>	Camhi, M., Musick, J.A. & Simpfendorfer, C.A.	NT <i>VU (A1abd) in Northwest Atlantic and Gulf of Mexico</i>	2000	A large, wide-ranging, coastal and pelagic warm water species. Among the slowest-growing, latest-maturing of known sharks, bearing small litters after a long gestation, and one of the most vulnerable of vertebrates to depletion by man because of its very low intrinsic rate of increase. Difficult to manage or protect because it is taken with other more productive sharks in mixed species fisheries, and has a high mortality rate when taken as bycatch. Catch rates for dusky shark in the western Atlantic have declined markedly. The population in the northwestern Atlantic and Gulf of Mexico is now probably at 15-20% of its mid-1970s abundance. In other regions the impact of fishing has not been as great, but still requires close monitoring.
Sandbar Shark <i>Carcharhinus plumbeus</i>	Musick, J.A.	NT <i>LR/cd in Northwest Atlantic</i>	2000	A large, slow-growing, late-maturing and low-fecundity coastal species, common and widespread in subtropical and warm temperate waters world-wide. An important component of shark fisheries in most areas where it occurs, although catch data are sparse. Severely overfished in the western North Atlantic, although the stock still contains over 100,000 individuals and supports an active and now tightly managed fishery. A management plan in US waters implemented in 1993 has led to stock stabilisation and the beginning of recovery.
Blackspot Shark <i>Carcharhinus sealei</i>	White, W.T.	NT	2003	<i>Carcharhinus sealei</i> is likely to be caught in relatively large quantities by artisanal fisheries and small scale commercial fisheries within its range, particularly in South East Asia, since it is most commonly found in shallow waters where such fishing activities are intensive. Short-lived (mature at one year and longevity five years), this species produces only one or two pups per year. Although recorded in Indonesia previously, this species was not recorded in a recent survey of markets within this region. There is concern that <i>C. sealei</i> may meet the Vulnerable criteria A2bd+3bd+4bd due to the high level of exploitation and its apparent population decline in some areas, but detailed species composition data are lacking and it is therefore considered Near Threatened.
Spot-tail Shark <i>Carcharhinus sorrah</i>	Pillans, R.D. & Stevens, J.D.	DD** <i>LC in Australia*</i> <i>NT in South East Asia*</i>	2003	A tropical Indo-Pacific species, recorded patchily from South Africa to southern China, and common on continental and insular shelves close inshore (20–50m) and occurring out to 140m. CPUE data for sharks caught in the Taiwanese gillnet fishery off northern Australia (now closed), of which <i>Carcharhinus sorrah</i> comprised about 20%, together with fast growth rates, early maturity and relatively high fecundity, suggest that this species is more resilient to exploitation than most other shark species. Currently, annual landings of sharks in northern Australia (mainly <i>C. tilstoni</i> and <i>C. sorrah</i>) are significantly smaller than historical catches. Although there is a need to monitor catches in these fisheries, current catch rates are highly unlikely to threaten the Australian population of <i>C. sorrah</i> , and the species is assessed as Least

				Concern in these waters. Intensive unmanaged coastal commercial and artisanal fisheries are, however, taking this and other carcharhinids in other parts of its range (certainly in Indonesia, other areas of South East Asia and likely elsewhere), where similar population declines to those previously observed in Australian waters have probably occurred and are likely to continue unchecked. Tagging data from Australia suggest that stocks of <i>C. sorrah</i> in areas of intensive fishing are susceptible to local population decline. <i>Carcharhinus sorrah</i> is thus assessed as Near Threatened in South East Asia. The probability of shared stocks between Australia and Indonesia is currently being investigated and it is recommended that the status of <i>C. sorrah</i> stocks be reassessed in the near future. Information is lacking from elsewhere and the species is currently assessed as Data Deficient globally.
Australian Blacktip Shark <i>Carcharhinus tilstoni</i>	Pillans, R.D. & Stevens, J.D.	LC	2003	A northern Australian continental shelf endemic occurring from close inshore to about 150 m. CPUE data for sharks in the Taiwanese gill net fishery (now closed) of which <i>Carcharhinus tilstoni</i> comprised about 40%, together with this species' fast growth rates, early maturity and relatively high fecundity suggests that it is more resilient to exploitation than many other shark species, and will already have recovered from depletion by this fishery in the 1980s. Currently, annual landings of sharks in Northern Australia (mainly <i>C. tilstoni</i> and <i>C. sorrah</i>) are significantly smaller than historical catches. Although there is a need to monitor catches in these fisheries, current catch rates are highly unlikely to threaten the population.
Tiger Shark <i>Galeocerdo cuvier</i>	Simpfendorfer, C.A.	NT	2000	This large omnivorous shark is common world-wide in tropical and warm-temperate coastal waters. It is a relatively fast growing and fecund species, and caught regularly in target and non-target fisheries. There is evidence of declines for several populations where they have been heavily fished. Continued demand, especially for the valuable fins, may result in further declines in the future, but this species can withstand a higher level of fishing activity than many other species of shark. Additionally, juvenile survivorship increases where adult tiger shark populations have been depleted by fisheries and predation of young is lessened.
Ganges Shark <i>Glyphis gangeticus</i>	Compagno, L.J.V.	CR (A1cde+2cde, C2b)	1996	Originally known only from three museum specimens, collected in the 19th century from fresh water in the lower reaches of the Ganges-Hooghly river system. Probably confined to turbid waters of rivers, estuaries and inshore waters in this area. Recently re-reported from the coast of India but identifications require confirmation because of taxonomic problems within this and a second species, <i>G. siamensis</i> , occurring nearby.
Speartooth Shark <i>Glyphis glyphis</i>	Compagno, L.J.V.	EN (C2a)	2000	Known from a single specimen of uncertain location within the Indo-Pacific, with possible conspecifics (based on jaws only) from Papua-New Guinea and northern Australia. The ecology and life history parameters for this species are unknown, but it is extremely rare, and probably confined to rivers, estuaries and adjacent coastal waters under significant pressure from development, exploitation and habitat destruction.
Bizant River Shark <i>Glyphis</i> sp. nov. A [Last & Stevens, 1994]	Pogonoski, J.J. & Pollard, D.A.	CR (C2a(i))	2003	Based on the very few specimens collected to date from just two rivers, this undescribed fresh to brackish water species is possibly a northern Australian endemic, and presumably very rare. Surveys targeting freshwater and estuarine elasmobranchs in northern Australia (Western Australia, Northern Territory, Queensland) in mid-late 2002 collected no <i>Glyphis</i> specimens, despite sampling in 136 sites in 38 rivers. It is inferred that the population contains fewer than 250 mature individuals and that no subpopulation contains more than 50 mature individuals, further that it is presumably threatened by bycatch in commercial and recreational fishing activities and by possible habitat degradation. Future sampling in northern Australian rivers may yet reveal this species to be more abundant than currently known. However, until a time when

				its abundance can be proven to be greater than current levels, the species is classified as Critically Endangered.
Northern River Shark <i>Glyphis</i> sp. nov. C [Compagno & Niem, 1998]	Pogonoski, J.J. & Pollard, D.A.	CR (C2a(i))	2003	Based on the very few specimens collected to date from northern Australia (records from Papua New Guinea are not yet confirmed as this species), this undescribed species is presumably very rare. Surveys targeting freshwater and estuarine elasmobranchs in northern Australia (Western Australia, Northern Territory, Queensland) in mid-late 2002 collected no <i>Glyphis</i> specimens, despite sampling in 136 sites in 38 rivers. It is inferred that the population contains fewer than 250 mature individuals and no subpopulation contains more than 50 mature individuals, further that it is presumably threatened by bycatch in commercial and recreational fishing activities and by possible habitat degradation. Future sampling in northern Australian and Papua New Guinea rivers may yet reveal this species to be more abundant than currently known. However, until a time when its abundance can be proven to be greater than current levels, the species is classified as Critically Endangered.
Sliteye Shark <i>Loxodon macrorhinus</i>	Simpfendorfer, C.A. & Stevens, J.D.	LC	2003	This small inshore shark is common throughout the Indo-West Pacific and is commonly caught in artisanal, subsistence and commercial fisheries. There are few data on its biology or trends in abundance. In parts of its range (e.g. South East Asia) its abundance has probably declined due to fishing. However, it is presumably a fast growing species that can sustain a reasonable level of fishing pressure and so is listed globally as Least Concern.
Sharptooth Lemon Shark <i>Negaprion acutidens</i>	Pillans, R.D.	VU (A2abcd+3bcd+4abcd) EN (A2abcd+3bcd+4abcd) in South East Asia LC in Australia*	2003	A widely distributed tropical Indo-west and central Pacific inshore species usually associated with coral reefs, lagoons and mangrove estuaries, and which exhibits very limited movement patterns. Within Australian waters, this species is wide-ranging and captured in small numbers in gillnets, beachmeshing and longlines on the east coast and Northern Territory. Catches in Western Australia are also small. In Australia, there are likely to be significant areas of unfished habitat outside the operational ranges of these fisheries, thus the population is assessed as Least Concern. Outside Australia, this species is heavily fished in unregulated and expanding inshore fisheries throughout its range, and this, together with its narrow habitat range and limited potential for recolonisation of heavily fished sites, leads to a global assessment of Vulnerable. Further, in Indonesia there has been little recent evidence of this species at fish markets although it was historically abundant. Widespread damage and destruction of coral reefs and mangrove habitats in parts of South East Asia are also cause for concern. In addition there are records of local extinctions in India and Thailand. This species is assessed as Endangered in South East Asia.
Lemon Shark <i>Negaprion brevirostris</i>	Gruber, S. & Sundström, L.F.	NT	2000	This large slow-growing coastal shark is common on Atlantic coasts from the US to Brazil and possibly in some west African countries, and in the Pacific from Baja California to Ecuador. Young sharks remain in sheltered coastal nurseries, some of which are subject to habitat degradation. Adults may undertake long seasonal migrations. The species is caught in largely unmanaged commercial and recreational fisheries, and there is increasing evidence of local population depletion in the Eastern Pacific and West Atlantic.
Blue Shark <i>Prionace glauca</i>	Stevens, J.D.	NT	2000	While blue sharks are among the most abundant, widespread, fecund and faster growing of the elasmobranchs, and a pelagic species that is widely distributed throughout the world's oceans, they are also the most heavily fished sharks in the world. The impact of annual fisheries mortality (mainly of bycatch), estimated at 10 to 20 million individuals, is likely to be having an effect on the world population, but monitoring data are inadequate to assess the scale of any population decline. There is concern over the removal of such large numbers of this likely

				keystone predator from the oceanic ecosystem.
Milk Shark <i>Rhizoprionodon acutus</i>	Simpfendorfer, C.A.	LC	2003	<i>Rhizoprionodon acutus</i> is a common wide spread species (the most widespread of this genus) that occurs from west Africa to the western Pacific (southern Japan). It is a coastal species, and as such it is commonly taken in a wide range of artisanal, subsistence and commercial fisheries and regularly seen in fish markets. Despite its widespread occurrence in fisheries and the limited data available about their impacts on populations, it is assessed as Least Concern due to its wide distribution and relatively productive life history.
Brazilian Sharpnose Shark <i>Rhizoprionodon lalandii</i>	Rosa, R.S., Gadig, O.B.F., dos Santos Motta, F. & Namora, R.C.	DD	2004	A tropical inshore species widely distributed in the Western Atlantic from Panama to southern Brazil. It is common in parts of its distribution. Current population trends through much of its range are uncertain because of lack of records. It is therefore assessed as Data Deficient, although quantitative data on catches and abundance may in future demonstrate this species to be threatened in many parts of its range, where intensive coastal fisheries are occurring. Other human factors, particularly water pollution, probably impact this species and its habitat in heavily populated areas. The species is known to be decreasing through overfishing in northern Brazil. It used to be one of the most abundant elasmobranchs in coastal fisheries in Maranhão, but nowadays is rarely seen there. Increased mortality of all age classes in coastal fisheries, such as occurs off São Paulo, likely threatens heavily exploited populations of this species. The large proportion of neonates and juveniles in catches here further compromises recruitment to the adult population. The species is therefore assessed as Vulnerable in Brazil (although the acquisition of quantitative data may show it to be at a higher level of threat) due to continuing intensive coastal fishing throughout its range.
Grey Sharpnose Shark <i>Rhizoprionodon oligolinx</i>	Simpfendorfer, C.A.	LC	2003	This is an abundant inshore species across southern Asia, from the Arabian Gulf at least to northern Australia, possibly southern Japan. It is exploited by artisanal, subsistence and commercial fisheries throughout its range, including gillnet, trawl and longline fisheries. In parts of its range exploitation rates are relatively high. However, it is assumed to have a productive life history, like those of better-known species in this genus which enables it to sustain relatively high levels of fishing pressure.
Australian Sharpnose Shark <i>Rhizoprionodon taylori</i>	Simpfendorfer, C.A.	LC	2003	<i>Rhizoprionodon taylori</i> is a small abundant inshore shark restricted to southern Papua New Guinea and northern Australia where it is caught as bycatch in inshore gillnet and trawl fisheries. Catches at times are large, but sporadic. It is not a targeted species and is one of the most productive species of shark known, growing very rapidly, maturing after one year with females producing up to 10 pups every year. This life history makes them able to sustain considerable fishing pressure, especially when the immature animals are not exploited.
Atlantic Sharpnose Shark <i>Rhizoprionodon terraenovae</i>	Cortés, E.	LC	2000	A small coastal shark that is abundant within its western North Atlantic range. Despite high pressure from both directed and incidental fisheries, <i>R. terraenovae</i> appears to be a fast maturing, relatively fecund species with moderate potential population rates of increase.
Spadenose Shark <i>Scoliodon laticaudus</i>	Simpfendorfer, C.A.	NT	2000	This small coastal shark is abundant in the northern Indian Ocean and Southeast Asia. Despite being commonly caught in fisheries there are no data available on its status. Its life history should make it more resilient to fishing than larger, longer-lived, species of elasmobranch, but limited fecundity suggests that it could be vulnerable to recruitment over-fishing.
Whitetip Reef Shark <i>Triaenodon obesus</i>	Smale, M.J.	NT	2000	This small shark is widely distributed in warm shallow Indo-Pacific waters and is closely associated with coral reefs. Its restricted habitat, depth range, small litter size and moderately late age at maturity suggest that, with increasing fishing pressure, this species may become threatened.

Family Sphyrhinae				
Winghead Shark <i>Eusphyrna blochii</i>	Simpfendorfer, C.A.	NT <i>LC in Australia*</i>	2003	This highly distinctive Indo-west Pacific continental shelf species is fished throughout its range. In southern Asia and Indonesia it is subjected to a range of fisheries and is probably heavily exploited. There are no scientific data on its status, and biological data are incomplete, but based on anecdotal accounts and market surveys the population is assumed to have declined and is assessed as Near Threatened. In the future it may reach a level that would warrant a Vulnerable listing. In Australia it is only a small component of commercial catches, the population is considered to be relatively healthy and is assessed as Least Concern.
Scalloped Bonnethead <i>Sphyrna corona</i>	Mycok, S.G.	NT	2004	The biology of this regionally endemic species is poorly known though the available information suggests it has a low productivity. This apparently rare species almost meets the requirements for Vulnerable (A4ad), however there is no direct evidence to suggest that the population is in decline due to the low numbers observed over its range. Marked declines have been observed in <i>Sphyrna tudes</i> , occurring in similar habitats and subject to artisanal fisheries, and it is likely that <i>S. corona</i> is fished similarly though with greater impact due to its lower fecundity. Further investigation into the population and biology of this uncommon species is required.
Scalloped Hammerhead <i>Sphyrna lewini</i>	Kotas, J.E.	NT	2000	This large hammerhead is widely distributed and common in warm temperate and tropical seas, occurring from the shore and surface over continental and insular shelves to adjacent deep water. Pups occupy shallow coastal nursery grounds, often heavily exploited by inshore fisheries. This widely distributed species is extremely commonly taken in fisheries, both as a target species and as utilised bycatch (fins are highly valued). Lack of data on population trends makes it difficult to assess whether the high level of catches of this species at all life stages is having an effect on stocks, but some declines are reported.
	Stevens, J.D., Simpferdorfer, C.A. & Heupel, M.R.	<i>LC in Australia*</i>	2003	Australia: <i>Sphyrna lewini</i> is found along the northern coast of Australia in reasonably high numbers. It is a large, viviparous, reasonably fecund species and although this species is taken in commercial fisheries these are well-managed and its population is not being impacted, thus <i>S. lewini</i> is classified as Least Concern in Australian waters.
Great Hammerhead <i>Sphyrna mokarran</i>	Denham, J.	DD	2000	A large widely-distributed tropical water shark, mainly restricted to continental shelves. Although not targeted directly by commercial fisheries, this is a probable bycatch species of tropical longline and drift net fisheries, with high value fins.
	Stevens, J.D., Simpferdorfer, C.A. & Heupel, M.R.	<i>LC in Australia*</i>	2003	Australia: <i>Sphyrna mokarran</i> is found along the northern coast of Australia in reasonably high numbers. It is a large, viviparous, reasonably fecund species and although this species is taken in commercial fisheries, these are well managed and it is not being impacted, thus is classified as Least Concern in Australian waters.
Bonnethead Shark <i>Sphyrna tiburo</i>	Cortés, E.	LC	2000	An abundant small hammerhead of shallow estuaries and bays on the Atlantic and Pacific coasts of America. Despite pressure from both directed and incidental fisheries, <i>S. tiburo</i> is an abundant species with some of the highest population rates of increase calculated for sharks.
Smooth Hammerhead <i>Sphyrna zygaena</i>	Simpfendorfer, C.A.	NT	2000	A relatively common and wide-spread shark, captured in a number of fisheries throughout its range, mostly by gillnet and longline. There is likely to be significant mortality of this species in large-scale longline and driftnet fisheries, although the impact on populations is unknown at present. Fins from hammerhead sharks are prized in Asia and individuals caught as by-catch are unlikely to be released alive.

	Stevens, J.D., Simpfendorfer, C.A. & Heupel, M.R.	<i>LC in Australia and New Zealand*</i>	2003	Australia and New Zealand: Regionally, <i>Sphyrna zygaena</i> occurs around New Zealand, where it is a prohibited target species, and the most abundant shark species recorded in aerial surveys along the northwest coast. It also occurs along the southern coast of Australia where it is found in reasonably high numbers. It is a large, viviparous, fecund species and although taken in commercial fisheries, it does not appear to be negatively impacted by this fishing pressure, and is classified as Least Concern for this region.
Order Chimaeriformes				
Family Callorhinchidae				
Elephant Fish <i>Callorhynchus milii</i>	Reardon, M.B., Walker, T.I. & Francis, M.P.	LC	2003	The holocephalan <i>Callorhynchus milii</i> is relatively abundant and is caught as byproduct in fisheries of Southern Australia and New Zealand. In southern Australia, commercial catch rates have been stable for the past 20 years, while fishing effort is reducing and a Total Allowable Catch (TAC) was implemented during 2002. On-board monitoring over the past 25-year period indicates the change in the number of animals caught per unit of fishing effort was not statistically significant. A three-mile closure of all Victorian waters to shark fishing provides a large refuge for the species in southern Australia. In New Zealand TACs have been in place since 1986 and the CPUE trend increased during 1989–2001. As a result, the total TAC increased from 619 to 1,040 tonnes over this time period. The species is most abundant off the east coast of the South Island. This fishery appears to be stable with populations likely to be above the biomass required to provide the maximum sustainable yield. The species has relatively high biological productivity; maximum age of 15 years, matures relatively early and continues to lay eggs over several weeks each year. No contraction of range or fragmentation of the population has occurred.
Family Chimaeridae				
Leopard Chimaera <i>Chimaera panthera</i>	Duffy, C.A.J.	DD	2003	A large chimaeroid endemic to New Zealand waters. Known from very few specimens from three localised areas at depths of 327–1,020 m. May have a wider distribution than is presently known. Nothing known of its biology. Vulnerable to bottom longlines and possibly bottom trawling in the upper part of its depth range but there is little fishing effort throughout most of its known distribution. Presently, not enough information available to assess the species beyond Data Deficient.
Pale Ghostshark <i>Hydrolagus bemisi</i>	Francis, M.P.	LC	2003	An endemic species with a widespread distribution throughout New Zealand. Caught commercially by bottom trawlers (ca. 1,700 tonnes per year), but managed by ITQs since 1998. Productivity unknown but may be low. Biomass indices relatively stable in 200–800 m depth range, but declining in 750–1,500 m depth range, on the Chatham Rise. The 200–800 m depth range encompasses the main habitat depth range (500–900 m), so the overall population abundance is probably relatively stable.
Dark Ghostshark <i>Hydrolagus novaezealandiae</i>	Francis, M.P.	LC	2003	<i>Hydrolagus novaezealandiae</i> is an endemic species with a widespread distribution throughout New Zealand, though uncommon around North Island, Challenger Plateau and Campbell Plateau. Productivity unknown but may be low. Caught commercially by bottom trawlers (ca. 2,000 tonnes per year), but managed by ITQs. Biomass indices are variable, but possibly increasing.

ACCOMPANYING NOTES

This table provides a summary record of **all** Red List assessments for chondrichthyans up to 2004, including regional assessments carried out by regional Shark Specialist Group members. Phylogeny and taxonomy follows: Compagno, L.J.V. Checklist of living Chondrichthyes. In: Fowler *et al.* (In press). Common names are those presented in Last and Stevens (1994) or official FAO names, with the exception of some endemics where the most commonly referred to regional name is used.

*= regional assessments that do not appear on the IUCN Red List website (www.redlist.org). Only the global assessments are displayed on the Red List website, unless the population in a region is considered a separate subpopulation (under IUCN definitions), and then only displayed if more threatened than the global assessment. Note, in the case of regional endemics, the 'regional assessment' is the global assessment.

** = species which have been temporarily assigned the Data Deficient category, pending urgent review of their global status. These species will not be submitted to the Red List until this review has been undertaken.

= Assessment evaluated and agreed upon by SSG network but not on 2004 Red List. Submitted to IUCN and will appear on 2005 Red List.

Categories and Criteria

Key to Red List assessment categories (see www.redlist.org for further information on these categories): CR, Critically Endangered; EN, Endangered; VU, Vulnerable; LR/cd, Conservation Dependent; NT, Near Threatened; LC, Least Concern; DD, Data Deficient.

Assessments made in 2000 used the old Red List criteria (1994). In particular, it should be noted that the 'Conservation Dependent' category no longer exists, and the criteria for the threatened categories have changed. Assessments made in 2003 and 2004 used the new criteria, Version 3.1. These can be downloaded from www.redlist.org and a summary table and further details are available in Cavanagh *et al.* 2003.

Red List Website Searches

When consulting the online Red List database (www.redlist.org):

1. Select 'Expert Search', and either type the name of a particular species, or to see all, type 'elasmobranchii' or 'holocephali' into the text search box.
2. Check all three taxa boxes (species, subspecies & varieties and stocks & subpopulations).
3. Select 'All Evaluated (including Least Concern)' under 'Red List Categories', (otherwise you will not see those assessed as 'Least Concern').

Sources of Information

IUCN 2003 Red List of Threatened Species. <http://www.redlist.org>

Cavanagh, R.D., Kyne, P.M., Fowler, S.L., Musick, J.A. and Bennett M.B. (2003). *The Conservation Status of Australasian Chondrichthyans: Report of the IUCN Shark Specialist Group Australia and Oceania Regional Red List Workshop, Queensland, Australia, 7-9 March 2003*. School of Biomedical Sciences, University of Queensland, Brisbane. (Available as a pdf from the SSG website <http://www.flmnh.ufl.edu/fish/organizations/ssg/regions/region8/Ausfinal.pdf>)

Fowler, S.L., Camhi, M., Burgess, G.H., Cailliet, G.M., Fordham, S.V., Cavanagh, R.D., Simpfendorfer, C.A. and Musick, J.A. (In press). Sharks, rays and chimaeras: the status of the chondrichthyan fishes. IUCN SSC Shark Specialist Group. IUCN, Gland, Switzerland and Cambridge, UK.

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

FOOTNOTES

1. Pending taxonomic resolution, the species referred to as *Centrophorus moluccensis* and *C. uyato* in the 2003 Red List are here referred to as *C. cf. moluccensis* and *C. cf. uyato*, respectively.
2. The species *Centroselachus crepidater* and *Proscymnodon plunketi* were originally assessed for the 2003 Red List as the synonyms *Centroscymnus crepidater* and *Centroscymnus plunketi*, respectively.
3. The species previously referred to as the wide-ranging *Rhynchobatus djiddensis* (Forsskål, 1775) is a species complex of at least four species (L.J.V. Compagno, pers. comm.). The 2000 assessment of *R. djiddensis* by Simpfendorfer has been replaced in part by individual assessments for *R. australiae* Whitley, 1939 and *R. laevis* (Bloch & Schneider, 1801). An assessment of the true *R. djiddensis* (from the Western Indian) has been prepared for the 2005 Red List.
4. The species *Raja binoculata* was originally assessed for the 2000 Red List as the synonym *Dipturus binoculata*.
5. The species *Bythaelurus dawsoni* and *Bythaelurus* sp. nov. A were originally assessed for the 2003 Red List as the synonyms *Halaelurus dawsoni* and *Halaelurus* sp. nov. A, respectively.
6. The rationale that appears in the table for *Galeorhinus galeus* is a combination of that prepared in 2000 by Stevens and a more recent (2003) update for Australia and New Zealand by Walker *et al.* The information on Australia and New Zealand in the 2000 rationale has been removed and updated with the 2003 rationales for those countries. A global review of this species is currently underway for the 2005 Red List.