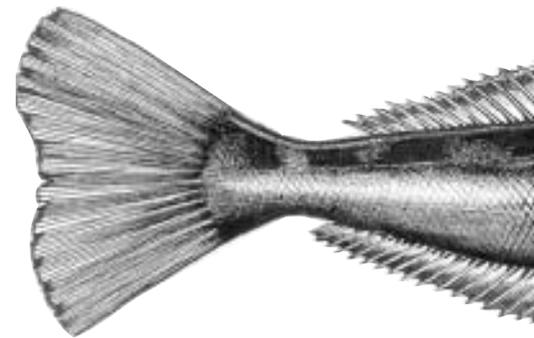
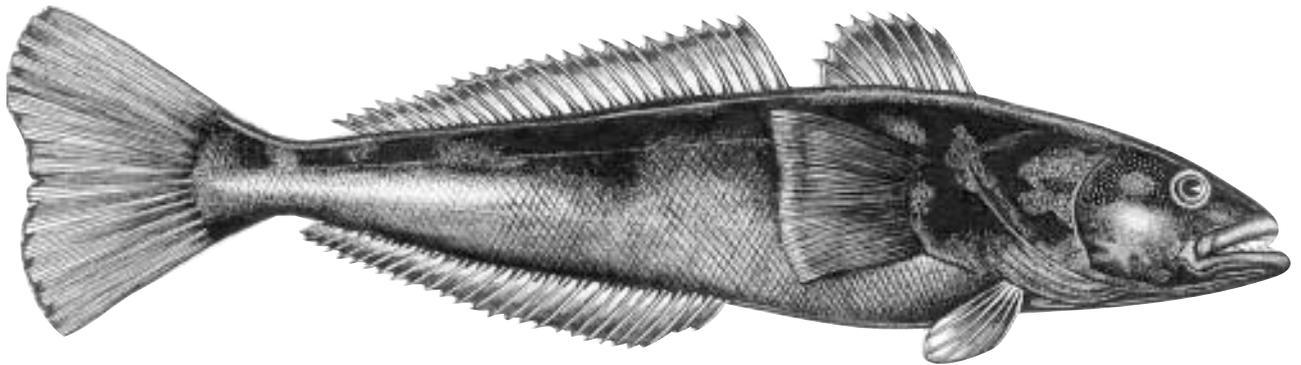


UNCHARTED WATERS

IMPLEMENTATION ISSUES AND
POTENTIAL BENEFITS OF
LISTING TOOTHFISH IN
APPENDIX II OF CITES

ANNA WILLOCK

A TRAFFIC REPORT



TRAFFIC

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Cover Illustration: Patagonian Toothfish
Dissostichus eleginoides
(Credit: Bruce Mahalski)

UNCHARTED WATERS

IMPLEMENTATION ISSUES AND POTENTIAL BENEFITS OF LISTING TOOTHFISH IN APPENDIX II OF CITES

ANNA WILLOCK

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1 INTRODUCTION TO THE CASE STUDY

The issue of listing marine fish on the Appendices of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) has been repeatedly raised in CITES-related meetings over the past decade, including the biennial meeting of the Conference of Parties, meetings to review the listing criteria and those of the Animals Committee. While a number of commonly traded marine species are already listed on various Appendices, including Queen conch, hard corals, and giant clams, there continues to be wide-spread debate as to whether or not marine fish should be listed in CITES, particularly those that are subject to large-scale commercial harvesting.

The basis for this debate is varied and includes disparate (and sometimes uninformed) views that: CITES only relates to species threatened with extinction and so is not relevant to commercially harvested marine fish; competency for the conservation and management of marine fish resides with the United Nation's Food and Agriculture Organisation and regional fisheries organisations; and restricting trade in seafood will adversely impact on the availability of protein for humankind.

The debate over the application of CITES to marine fish species has tended to be polarised into two extremes, where success is characterised either by achieving a listing or preventing a listing. There have been limited analyses of the benefits that a listing may or may not deliver for a particular species or how a range of implementation issues might be addressed. This paper seeks to contribute to the debate by providing an analysis of these two main factors in relation to Patagonian and Antarctic toothfish.

Patagonian toothfish (*Dissostichus eleginoides*) and Antarctic toothfish (*D. mawsoni*) have been chosen for this analysis for a number of reasons. First, both species have biological characteristics that are generally considered to make a marine fish species highly vulnerable to over-exploitation and long-term detrimental impacts. Such characteristics include longevity, late maturation, large size and low fecundity. Second, a conservation and management regime established by the Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR) is currently in place for toothfish. Measures implemented under this regime include total allowable catches and a catch documentation scheme to monitor trade in toothfish, which provide a useful basis for analyses of the potential application of quotas and certification provisions under CITES. Finally, over 90 per cent of products derived from



Patagonian toothfish taken by longline fishing.

Photograph: B. Watkins

Patagonian and Antarctic toothfish enter into international trade. The high commercial value of these species, sometimes referred to as 'white gold' (ISOFISH, 1999) in fishing industry circles, has created a lucrative fishery for both legal, and illegal and unregulated, fishing vessels. The combination of these factors, and the fact that CCAMLR has only limited ability to effectively enforce its measures, has raised concerns regarding the conservation status of toothfish and the future of the toothfish fisheries. This has in turn led to consideration of whether there is potential for CITES, through its capacity to regulate trade in a species, to complement the primary conservation and management role of CCAMLR.

The purpose of this report is to discuss some of the key implementation issues pertaining to a listing of toothfish in Appendix II of CITES, as that Convention currently stands, using the conservation measures established by CCAMLR as the basis for this discussion. The paper provides some recommendations in relation to these issues. Given this focus the paper does not pass comment on whether or not toothfish would qualify for inclusion under the current CITES listing criteria. The paper also notes some potential benefits of a listing in Appendix II of CITES for the long-term sustainability of Patagonian and Antarctic toothfish.

2 SUMMARY OF BIOLOGICAL CHARACTERISTICS

The Patagonian toothfish *Dissostichus eleginoides* is a large, demersal, predatory, sub-Antarctic species that grows up to 2 metres in length and lives for up to 50 years. It inhabits deep water (down to 2500-3000 metres), but the smaller juveniles have mostly been found in shallower water on shelf areas around sub-Antarctic islands (Lack & Sant, 2001). Patagonian toothfish are reproductively mature by the time they reach 70-95 cm in length, which seems to correspond to 6-9 years of age. While varying with fish length and location, the species exhibits relatively low fecundity, ranging from 48,000 to 500,000 eggs per fish, per spawning season (Kock, 2000).

The distribution of the Patagonian toothfish is circumantarctic however it is not found in waters colder than 2°C. Southernmost records of the species are for the South Orkney Islands and the South Sandwich Islands (Kock, 2000). Its principal habitat is the mass of water known as the Intermediate Antarctica, which expands to the north of the polar continent. This includes areas along the Pacific and Antarctic shores of South America, predominantly the southern Chilean and Argentinian Patagonia shorelines, as well as the Uruguayan continental slope and around the Falkand/Malvinas Islands and Burwood Bank. Substantial populations have also been found in the southern Antarctic zone of the Indian Ocean, around the French islands of Kerguelen and Crozet, the Prince Edward Islands (South Africa), Heard and McDonald Islands region (Australia) and the Ob and Lena Banks.

Antarctic toothfish (*D. mawsoni*) are considered to be smaller and faster growing than Patagonian toothfish, with a maximum observed length and weight of 180 cm and around 75 kilograms. Antarctic toothfish of 140 to 165 cm in length have been estimated to be from 22 to 30 years old (Kock, 2000). Like Patagonian toothfish, Antarctic toothfish are bottom-living, inhabiting waters from 300 to 2500 metres. Antarctic toothfish are generally restricted to waters south of 65°S though individual fish may be found north of this latitude.

3 CHARACTERISTICS OF THE GLOBAL TRADE IN TOOTHFISH

Both Patagonian and Antarctic toothfish are white-fleshed, restaurant-quality fish that are highly sought after by markets in the USA, Japan, Europe and Canada. In the USA, for example, toothfish has been known to fetch up to USD35 per kilogram at retail outlets. The high unit price paid for toothfish results in these combined markets representing around 90% of the estimated worldwide trade. Over the period 1996/97 to 1999/00, the main catching countries of Chile, Argentina, France, UK, Australia and South Africa provided over 90% of the products for these markets (Lack & Sant, 2001).

Toothfish is traded in a number of different forms, the main ones being whole; headed and gutted; headed, gutted and tailed; and fillets. There is also a market for heads, fins and cheeks. Even as whole fish, Patagonian and Antarctic toothfish are difficult to tell apart although there are a number of distinguishing characteristics that a trained observer can use to differentiate between the two species. It is not possible to visually identify each species in filleted form. While detailed information on trade in Antarctic toothfish is unavailable because of the lack of species-specific customs codes, information that is available suggests it is likely that both Patagonian and Antarctic toothfish fill the same market demand (Lack, 2001).

Toothfish is commonly exported from the country where the catch was first landed to countries that then process the fish into different products. Most of these products are subsequently re-exported to the main consumer countries while others are consumed domestically. For example, China is a major importer and processor of toothfish, re-exporting frozen fillets to Japan, USA and the European Union (EU) while heads are sold on the domestic market or exported to Japan. In contrast to many fisheries a number of the main consuming countries, including Canada, the USA and Japan, do not themselves fish for toothfish.

Toothfish is marketed under different common names in different countries and, in some cases, under two different names within the same country. Table 1 lists the common names for toothfish in the major markets.

Table 1: Common names for toothfish in the major markets

Country	Common Name
Spain	Merluza negra or Bacalao de profundidad
USA & Canada	Chilean Sea Bass
France	Legine
Japan	Mero
UK	Patagonian toothfish

Source: TRAFFIC Network and pers. comm. M. Exel, Austral Fisheries Pty. Ltd, 13 March, 2002

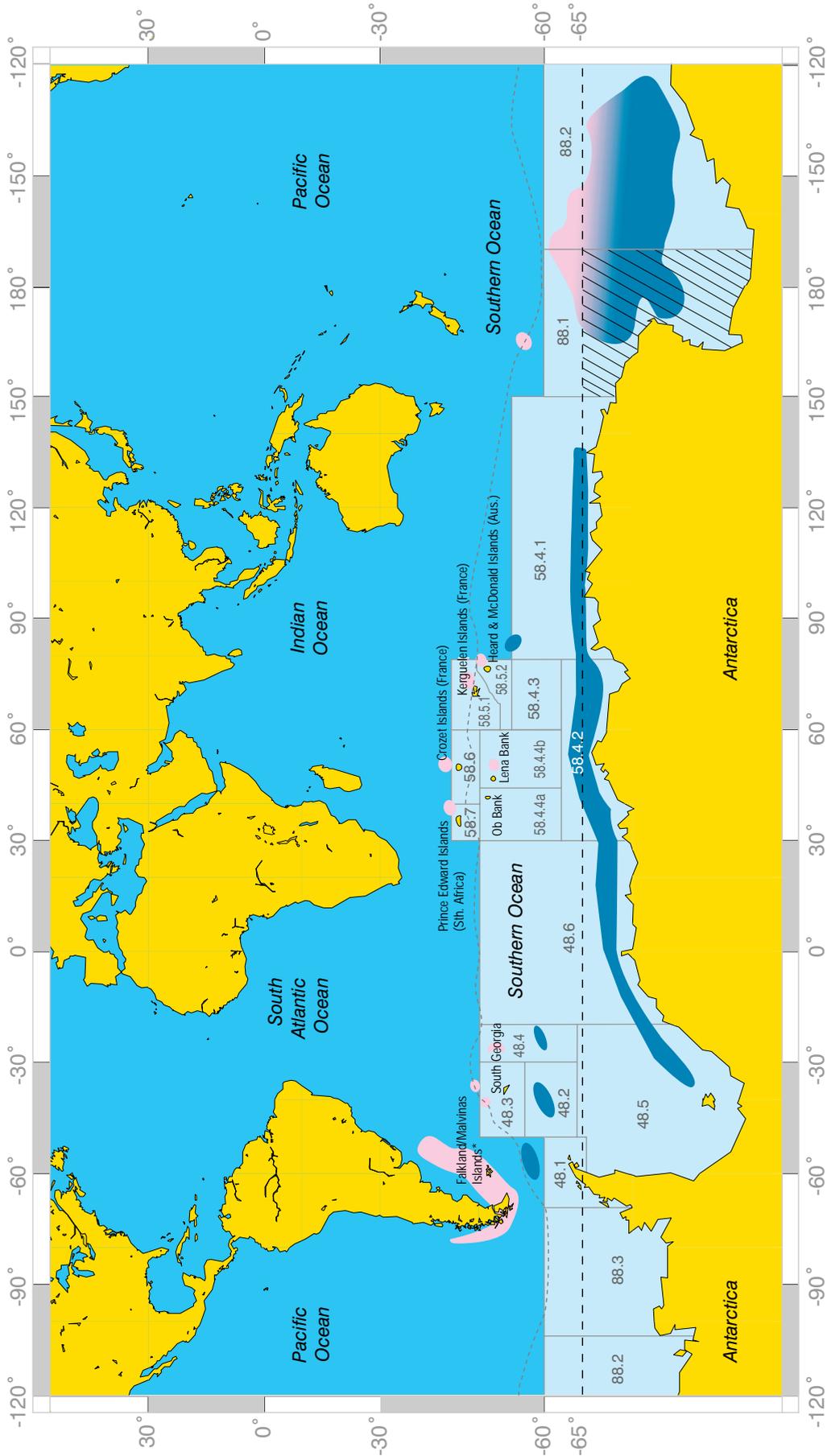


Figure 1: Distribution Map of the Patagonian and Antarctic Toothfish (*Dissostichus eleginoides* & *D. mawsoni*). NB: Indicative only and not representative of density.

MAP KEY



Illustration: Bruce Mehrliski

Patagonian Toothfish

Antarctic Toothfish

99% of CCAMLR Reported catches of Antarctic Toothfish have occurred in this area

Antarctic convergence

CCAMLR Convention Area
(numbers denote CCAMLR fishing areas/subareas)

Source: adapted from maps by Lack and Sant (2001) and Smith and Gaffney (2000) with CCAMLR information.

*Falkland/Malvinas Islands: Recognized by the UN as a "Non-Self-Governing Territory administered by the UK, also claimed by Argentina".

4 CURRENT CONSERVATION AND MANAGEMENT FRAMEWORK FOR TOOTHFISH

4.1 International marine law

The Law of the Sea Convention (LOSC) entered into force in November 1994 and establishes the broad legal regime for the marine environment, including where and over what a State may exercise sovereign rights and the rights and obligations of States whose vessels fish on the high seas¹. The LOSC also establishes the obligation on States to co-operate for the conservation and management of marine resources that occur on the high seas; straddle the high seas and the waters of coastal States; and migrate between these areas. The obligations relating to the last two categories of fish are amplified in the United Nations Fish Stocks Agreement (UNFSA).

The UNFSA entered into force on 11 December 2001 and applies primarily to straddling and highly migratory fish stocks. The Agreement requires States whose vessels fish for a straddling or migratory fish stock on the high seas, and coastal States in whose waters those same stocks occur, to co-operate in their conservation and management through the establishment of a regional fisheries organisation or arrangement. As well as applying to straddling and highly migratory stocks, the Agreement also embodies principles that apply to the conservation and management of all marine resources, including the application of the precautionary approach. There are currently 31 ratifying and acceding States to UNFSA. Toothfish are not considered to be highly migratory however are found on the high seas and may occur as a straddling stock in some areas.

The status of States and Entities involved in toothfish trade in respect to CITES, UNFSA and CCAMLR is detailed in Table 2.

1. The term "high seas" in this paper has the same meaning as that established under the LOSC and refers to waters that are not included in the exclusive economic zone, in the territorial sea or in the internal waters of a State, or in the archipelagic waters of an archipelagic State. In addition, it also refers to waters adjacent to territorial claims over areas of the Antarctic continent.

Table 2: States and entities having traded toothfish in the period 1998 to 2000 and their membership status under CITES, UNFSA and CCAMLR

States / Entities	CITES Status	UN Fish Stocks Agreement	Status under CCAMLR
Argentina	Party	Signed	Member
Australia	Party	Ratified	Member
Belgium	Party	Signed	Member
Belize	Party	Signed	Invited
Bosnia-Herzegovina	Non-party		
Brazil	Party	Ratified	Member
Bulgaria	Party		Acceding State
Canada	Party	Ratified	Acceding State
Chile	Party		Member
China	Party	Signed	Invited
Costa Rica	Party	Ratified	
Denmark	Party	Signed	Invited
EC	Party	Signed	Member
Egypt	Party	Signed	
Finland	Party	Signed	Acceding State
France	Party	Signed	Member
Germany	Party	Signed	Member
Greece	Party	Signed	Acceding State
Honduras	Party		
Hong Kong	Party		
India	Party		Member
Israel	Party	Signed	
Italy	Party	Signed	Member
Japan	Party	Signed	Member
Korea, Rep. of	Party	Signed	Member
Laos	Non-party		
Mauritius	Party	Ratified	Invited
Mexico	Party		
Namibia	Party	Ratified	Member
Netherlands	Party	Signed	Acceding State
New Zealand	Party	Ratified	Member
Norway	Party	Ratified	Member
Paraguay	Party		
Peru	Party		Acceding State
Philippines	Party	Signed	
Poland	Party		Member
Portugal	Party	Signed	Invited
Russia	Party	Ratified	Member
Saudi Arabia	Party		
Serbia-Montenegro	Non-party		
Seychelles	Party	Ratified	Invited
Singapore	Party		
South Africa	Party		Member
Spain	Party	Signed	Member
Sweden	Party	Signed	Member
Taiwan	Non-party (voluntarily applies relevant measures)		
Thailand	Party		
The Netherlands	Party	Signed	
Turkey	Party		
UK	Party	Ratified	Member
Ukraine	Party	Signed	Member
Uruguay	Party	Ratified	Member
USA	Party	Ratified	Member
Venezuela	Party		

Sources: CCAMLR 2001a, United Nations, 2001; CITES 2002



Patagonian toothfish on the deck of an Australian trawl vessel in the Southern Ocean.

4.2 THE COMMISSION FOR THE CONSERVATION OF ANTARCTIC MARINE LIVING RESOURCES

4.2.1 Background information on CCAMLR

The primary conservation and management regime for Patagonian toothfish and Antarctic toothfish is provided under the Convention on the Conservation of Antarctic Marine Living Resources. This Convention was signed in May 1980 and came into force in 1982 with the objective of the conservation of Antarctic marine living resources, including rational use of those resources. While CCAMLR predates the UNFSA, the Convention embodies many of the same principles.

The area over which the Commission has competency includes the majority of known waters where Patagonian toothfish is found as well as all waters likely to contain commercial quantities of Antarctic toothfish.

In giving effect to its objective and principles the Convention requires its Commission, *inter alia*, to:

- compile data on the status of and changes in population of Antarctic marine living resources and on the factors affecting the distribution, abundance and productivity of the harvested species and dependent or related species or populations (Article IX 1(b))
- ensure the acquisition of catch and effort statistics on harvested populations (Article IX 1(c)), and
- formulate, adopt and revise conservation

measures on the basis of the best scientific evidence available (Article IX 1(f)).

The Commission therefore has a broad mandate relating to scientific research and assessment, with the results of this scientific research manifested in the development of conservation measures.

4.2.2 Key CCAMLR conservation measures for toothfish

CCAMLR has agreed a number of specific conservation measures that apply to both Patagonian and Antarctic toothfish including:

- a catch documentation scheme
- Port State inspection of vessels intending to land or transship toothfish
- total allowable catches in specific areas, by specific methods
- prohibition of directed fishing for toothfish, except in accordance with specific conservation measures
- a vessel monitoring system² for all vessels fishing for toothfish in the CCAMLR Convention Area.

Of the conservation measures implemented by CCAMLR that are specific to toothfish the catch documentation scheme (CDS) is the most recent and comprehensive conservation measure. The CDS was agreed at the Commission's XVIIIth meeting, in 1999, and became binding on all Members on 7 May 2000.

The stated aims of the CDS are to:

- (i) monitor the international trade in toothfish;
- (ii) identify the origins of toothfish imported into or exported from the territories of Contracting Parties;
- (iii) determine whether toothfish imported into or exported from the territories of Contracting Parties, if caught in the Convention Area, was caught in a manner consistent with CCAMLR conservation measures; and
- (iv) gather data for the scientific evaluation of stocks.

The CDS is designed to provide a comprehensive 'paper trail' for toothfish products from the catching vessel through to the final point of importation. Figure 2 provides example scenarios to illustrate how the CDS operates.

A comparison of the CDS and CITES documentary requirements under an Appendix II listing is provided in Section 7.7.

2. The term "vessel monitoring system" refers to the automated tracking of a vessel's speed, direction and location via satellite. Under CCAMLR's provisions, this information is transmitted automatically to the flag State of the vessel concerned.

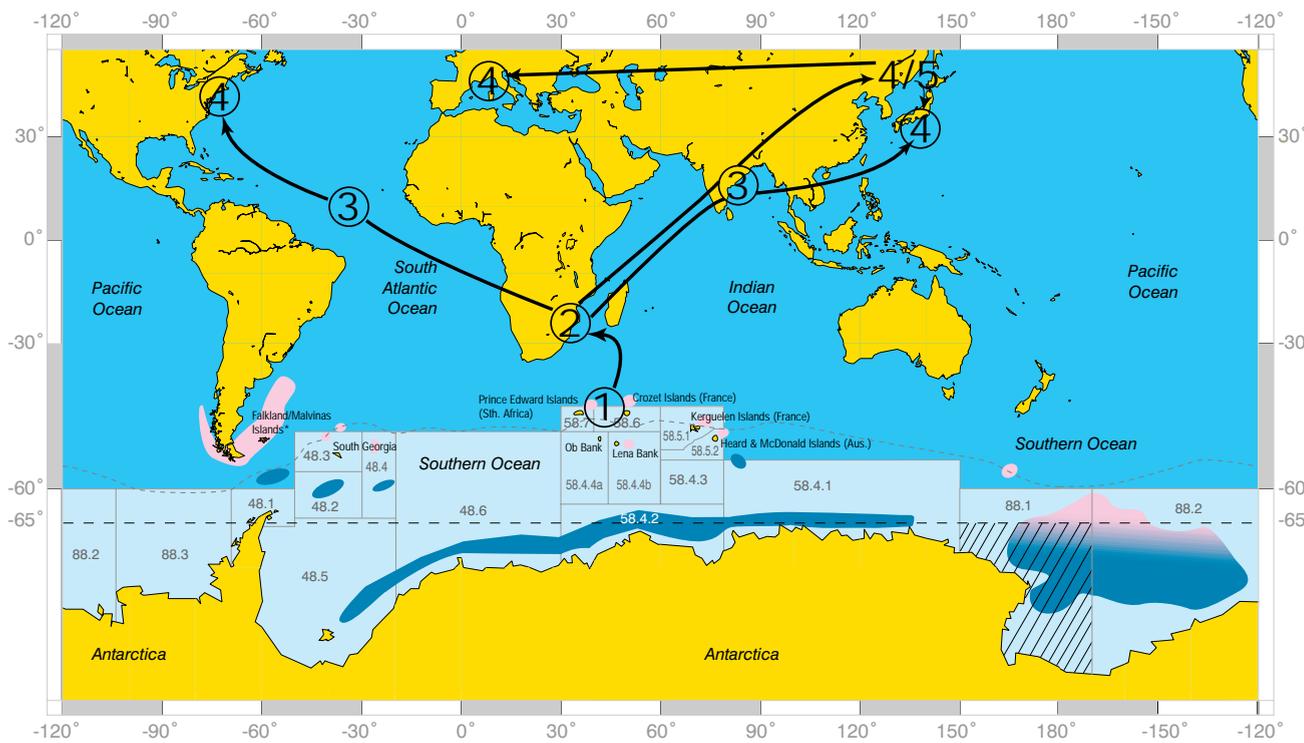


Figure 2: Example scenarios illustrating the operation of the CDS.

MAP KEY



-  Patagonian Toothfish
-  Antarctic Toothfish
-  99% of CCAMLR Reported catches of Antarctic Toothfish have occurred in this area
-  Antarctic convergence
-  CCAMLR Convention Area (numbers denote CCAMLR fishing areas/subareas)

Source: adapted from maps by Lack and Sant (2001) and Smith and Gaffney (2000) with CCAMLR information.

*Falkland/Malvinas Islands: Recognized by the UN as a "Non-Self-Governing Territory administered by the UK, also claimed by Argentina".

STEP 1: THE CATCH
Caught by CCAMLR Member's fishing vessel in the Convention Area. Flag State issues the vessel a Dissostichus Catch Document with a unique catch Document Number.

1

STEP 2: THE LANDING
Catch landed at a CCAMLR Member's port
a) Flag State issues a Flag State Confirmation Number prior to the catch being landed, verifying that the landing is consistent with the vessel's authority to fish for toothfish. May verify this after examining the vessel's logbooks and data from the vessel monitoring system. Flag State electronically transmits a copy of the catch document to the CCAMLR Secretariat.

b) Port Authority issues a Certificate of Landing if it is satisfied that the details on the catch document agree with the actual catch landing. May request supporting evidence from the vessel's Master and/or the Flag State of the vessel.

2

STEP 3: EXPORT
a) Exporter records the species, product type and weight of each consignment and makes a copy of the original catch document to accompany each one.

b) Government Export Authority issues Export Government Authority Validation after certifying that the export details are correct. May cross-check copies of the catch document to ensure that total exports do not exceed the declared catch.

c) Exporter provides details of the importer at the time of export then sends a copy of the completed document to the Flag State, which then electronically transmits it to the CCAMLR Secretariat.

3

STEP 4: IMPORT
Importer receives consignment and a copy of the catch document, which it forwards to the national import authority. The national import authority then transmits it to the CCAMLR Secretariat.

4

STEP 5: RE-EXPORT
a) Re-exporter completes a re-export document for each consignment. A copy of the original catch document must accompany each consignment.

b) Government Export Authority issues a Re-Export Government Authority Validation after certifying that the export details are correct. May cross-check copies of the catch document on the CCAMLR website to ensure that total exports do not exceed the declared catch.

5

4.2.3 High seas inside the CCAMLR Convention Area

The provisions of CCAMLR apply to the high seas within the Convention Area. This includes waters subject to territorial claims adjacent to the Antarctic continent over which CCAMLR also has 'practical jurisdiction'. High seas areas comprise over 90 per cent of the Convention Area.

Fishing activities undertaken by vessels flagged to Members must comply with CCAMLR's agreed conservation measures, with Members having responsibility to implement and enforce the measures that have been agreed by the Commission.

A CCAMLR Member may implement and enforce agreed conservation measures in a number of ways:

- **Flag State**
exercise effective flag State control over its fishing vessels, particularly when fishing on the high seas
- **Coastal State**
exercise effective control over fishing activities for toothfish within waters under its national jurisdiction
- **Port State**
control fisheries-related activities in its ports, particularly transshipment of catches, and validation of required catch documentation
- **Market State**
ensure that toothfish imports are accompanied by the appropriate documentation
- **National's State**
implement measures to deter its nationals from engaging in activities that undermine agreed conservation measures for toothfish

The Commission 'encourages' non-Contracting Parties whose vessels fish for toothfish on the high seas of the Convention Area to either accede to the Convention or voluntarily apply CCAMLR's agreed conservation measures. The Commission offers similar encouragement to non-parties that provide port facilities and / or markets for toothfish. To date approaches aimed at strengthening the catch documentation scheme in non-party States have had some success, with Singapore, the Seychelles and Mauritius all committing to implement the CDS on a voluntary basis and Namibia becoming a Member of the Commission in 2000. The decision by Mauritius was viewed by Commission Members as being particularly significant as the Mauritian capital, Port Louis, has been a primary port for the unloading of toothfish caught by unregulated and illegal vessels for a number of years.

4.2.4 Waters under national jurisdiction inside the CCAMLR Convention Area

A number of island territories lie within the Convention Area, all of which are under the jurisdiction of CCAMLR Members. These sub-Antarctic islands include the Kerguelen and Crozet Islands (France), Bouvet Island (Norway), the Prince Edward Islands (South Africa) and Heard and McDonald Islands (Australia).

In Article IV 2(b) the Convention states that it is without prejudice to the right to exercise coastal state jurisdiction, which generally extends out to 200 nautical miles from the islands. In the past, however, Members with island territories within the Convention Area have generally applied the conservation and management measures adopted by the Commission to their waters.

4.3 OUTSIDE THE CCAMLR CONVENTION AREA

4.3.1 High seas outside the CCAMLR Convention Area

The Patagonian slope off Chile is the most substantial fishery on the high seas outside the Convention Area for Patagonian toothfish. In addition to the Patagonian slope, increasing quantities of Patagonian toothfish have been reported as taken on the high seas, particularly in FAO Statistical Area 51 in the most recent fishing season. Statistical Area 51 covers the entire western and southern Indian Ocean to the north of the CCAMLR Convention Area. Despite the recent reports of toothfish catches in these areas, the veracity of these reports is questionable as stocks of toothfish in this area have not previously been identified that would support the level of reported catch.

There is currently no conservation or management framework for toothfish in high seas areas outside the CCAMLR Convention Area beyond the broad obligations contained under the LOSC and the application, on a voluntary basis, by CCAMLR Members of the CDS requirements to catches taken outside the Convention Area. Voluntary measures that may be applied by Members include prohibition of catches claimed as having been taken in Statistical Area 51 that can not be verified via VMS reports.

Under the LOSC, States fishing for stocks on the high seas should co-operate in the management of those stocks. In relation to toothfish this could be achieved either through the negotiation of a new regional fisheries agreement or the northward



Photographs: Royal Australian Navy

In February 2002, two vessels suspected of illegal fishing were sighted in the Australian Fishing Zone around Heard and McDonald Islands. The Royal Australian Navy intercepted and boarded both vessels and escorted them back to port. The vessels were carrying a total of 200 tonnes of toothfish at the time of their arrest, valued at approximately USD1.3 million.

extension of the CCAMLR Convention Area. In regard to the former option there are negotiations underway to develop a south-west Indian Ocean convention that may have competency for both toothfish species and those waters of FAO Statistical Area 51 from which toothfish catches are suspected of being misreported. However even if agreed, any such convention is unlikely to develop into a functioning entity in the foreseeable future. Apart from the possibility of a south-west Indian Ocean convention, there are unlikely to be any new arrangements of relevance to toothfish because it would be impractical and costly to negotiate and implement an agreement that dealt with essentially the same stocks as CCAMLR.

The option of extending CCAMLR's Convention Area has been briefly canvassed at recent meetings of the Commission however has received little support. In reality, the extension of the CCAMLR Convention Area is unlikely to achieve consensus in the near future because of the likelihood that a significant proportion of the toothfish catch claimed as having been taken outside the Convention Area has, in fact, been taken within it. This undermines and blurs the rationale for any such extension.

Further, while establishing a more northerly boundary may make such claims even more

questionable it would not fundamentally change the nature of the current loophole.

4.3.2 Waters under national jurisdiction outside the CCAMLR Convention Area

Several fisheries for Patagonian toothfish take place within waters under national jurisdiction outside the CCAMLR Convention Area however all such waters are under the jurisdiction of CCAMLR Members. These fisheries include:

- Macquarie Island (Australia)
- Falkland/Malvinas Islands
- Argentinian Exclusive Economic Zone
- Chilean Exclusive Economic Zone

The Convention requires that the Commission seek to co-operate with Contracting Parties that have jurisdiction over waters lying outside the Convention Area in which Patagonian toothfish are found (Article XI). To date, coastal States have generally implemented measures in their waters that are compatible with those adopted by CCAMLR.

4.4 KEY PROBLEMS WITH THE CURRENT CONSERVATION AND MANAGEMENT REGIME FOR TOOTHFISH

The key problem for the current conservation and management regime for toothfish is the continuing impact of illegal, unreported and unregulated (IUU) fishing. CCAMLR has recognised this problem stating that "...the high market value of toothfish has made this species a prime target for IUU fishing in the Convention Area. Members believe that this issue is the greatest challenge currently facing the Commission" (CCAMLR 2001b).

In broad terms, a risk assessment by a prospective IUU fisher deciding whether or not to fish illegally in the waters of a coastal State would include the following factors:

risk of detection x risk of apprehension
x chance of unsuccessful prosecution x penalty
versus potential financial gain

The value of toothfish provides a powerful incentive to undertake IUU fishing, with toothfish worth between USD4 - 7 per kilogram wholesale for headed and gutted product and boats capable of landing 200 to 300 tonnes of product per trip (M. Exel, Austral Fisheries Pty Ltd., *in litt.* to A. Willock 19 February, 2002). There is limited disincentive to undertaking IUU fishing given the difficulties for coastal States in detecting illegal fishing within their remote sub-Antarctic waters and the limited enforcement capacity of CCAMLR in relation to the high seas within the Convention Area.

In 2001 the TRAFFIC Network released two trade analyses of toothfish, one on Patagonian toothfish and the other on Antarctic toothfish. These analyses were undertaken in response to growing concerns about the extent of IUU fishing activity for toothfish, both within and outside the CCAMLR Convention Area. The conclusion of these analyses was that the level of trade in both species of toothfish was significantly higher than the level of catch estimated by CCAMLR, with more IUU fishing activity than estimated by CCAMLR the source of these higher catches (Lack & Sant, 2001).

In relation to Patagonian toothfish the analysis indicated that the global level of IUU catch in the year 2000 could have been up to four times that estimated by CCAMLR. Similarly, the trade analysis of Antarctic toothfish showed that the level of removals may be 70 per cent higher than the level of catch reported to the Commission and could be as much as 147 per cent higher (Lack, 2001). Further, up to half of the

total toothfish in trade in the year 2000 may have been derived from IUU fishing activity (Lack & Sant, 2001).

Each of the different forms of IUU fishing in relation to the toothfish fishery is discussed below in more detail.

4.4.1 Illegal fishing

Illegal fishing for toothfish occurs in two main ways. First, boats fish in waters under the jurisdiction of coastal States, either within or outside the Convention Area, without proper authorisation. For example, the estimate of illegal catch of toothfish taken from waters under Australian jurisdiction over the split-year 2000/01 was 1,649 tonnes. This illegal catch represented 55 per cent of the total allowable catch of 2,995 tonnes (Anon., 2001).

The second form that illegal fishing for toothfish takes is activity on the high seas within the CCAMLR Convention Area by vessels flagged to, or under the effective control of, Members of the Commission. As conservation measures that have been agreed by Members are then legally binding on them, fishing activity in contravention of such measures constitutes illegal fishing.

With the entry into force of the UN Fish Stocks Agreement on 11 December 2001, a further instance of illegal fishing will occur if a vessel flagged to a country that has ratified or acceded to the Agreement fishes in the Convention Area in contravention of the measures adopted by CCAMLR. However this type of illegal activity is likely to be minimal in the short-term given that at the time of writing this report only 31 countries have ratified the Agreement. Eight of these countries are also CCAMLR Members while the majority of the others have only small coastal fishing fleets.

4.4.2 Unreported fishing

Each year CCAMLR's Working Group on Fish Stock Assessment provides estimates of the level of unreported catch taken from the Convention Area. Catches that may have been illegally taken from the waters of a coastal State or by vessels flagged to CCAMLR Members are included in this estimate.

According to CCAMLR figures, the estimated unreported catch within the Convention Area in the split year 1999/00 was 6,546. This represented 45 per cent of the estimated total catch of 14, 441 tonnes (CCAMLR 2001c). However, as noted TRAFFIC's trade analyses indicate that CCAMLR's estimates are likely to understate significantly the level of unreported catch.

The introduction of the CDS has led to an increase in the amount of catch reported as taken on the high seas outside the Convention Area, particularly in FAO Statistical Area 51. At its annual meeting in October 2001, CCAMLR Members adopted a resolution on this issue in which they expressed concern that "...the Catch Documentation Scheme for *Dissostichus* spp. (CDS) could be used to disguise illegal, unregulated and unreported (IUU) catches of *Dissostichus* spp. in order to gain legal access to markets." The resolution states Members' concern that "...any misreporting and misuse of the CDS seriously undermines the effectiveness of CCAMLR conservation measures." The resolution goes on to urge "...States participating in the CDS to consider reviewing their domestic laws and regulations with a view to prohibiting, landings/transshipments/imports of *Dissostichus* spp. declared in a DCD as having been caught in FAO Statistical Area 51 if the Flag State fails to demonstrate that it verified the DCD using automated satellite-linked VMS derived data reports" (CCAMLR 2002).

There are clear incentives to misreport catch as having been taken on the high seas outside the Convention Area. First, there are no conservation measures or controls on the high seas in such areas, unlike in the Convention Area where total allowable catch controls on toothfish apply. Operators can also avoid other conservation measures, including the requirement to carry an automatic location device under the vessel monitoring system. Further, catches that have been illegally taken from the waters of coastal States can be misreported as having been taken on the high seas. Vessels flagged to both CCAMLR Members and non-parties are implicated in this practice.

While CCAMLR Members and States co-operating in the implementation of the CDS require that all toothfish landed to their ports be accompanied by the appropriate forms there is no obligation for the Port State to verify where the catches were taken as this is the responsibility of the Flag State. Although some port States may apply more stringent requirements on the basis of the resolution adopted at CCAMLR's annual meeting in 2001, there is no requirement to do so. Therefore, as CCAMLR acknowledges, through misreporting, illegal catches can be laundered through the CDS in circumstances where the Flag State is not undertaking effective verification and validation of catches and the Port State does not itself require such verification.

4.4.3 Unregulated fishing

While the Commission regularly invites non-parties with vessels fishing in the Convention Area to join it or co-operate with its conservation measures, this is unlikely to occur as many such vessels fly what is termed a 'flag of convenience'.

Flag of convenience vessels are generally considered to be those that are registered in a different country to that where the ship is beneficially owned. These registers are often maintained by developing States for the purpose of raising much-needed revenue. Vessel owners are attracted by the opportunity to avoid higher costs in their own countries, including insurance and taxes, and in some cases by the general lack of Flag State control exercised over vessels' activities. The result is that the fishing activity by these vessels is largely unregulated within the Convention Area and adjacent high seas.

The lack of control over vessels exercised by many Flag States, and the relative ease with which flags can be changed by owners if a State does begin to exert some control, has led some countries to attempt to exercise control over their nationals when they are outside their jurisdiction. For example, Japan requires Japanese fishers to obtain Government approval before working aboard foreign-registered tuna vessels. However exercising control over nationals in this manner can present legal and constitutional difficulties for many countries.

In addition to fishing activity within the CCAMLR Convention Area, unregulated fishing for toothfish also occurs in high seas areas outside the Convention Area. There are currently no conservation and management measures in place in such areas for toothfish.

The combined impact of IUU fishing activity seriously undermines the conservation measures established by the Commission to the extent that serious concerns have been raised for the future of Patagonian toothfish. At its meeting in 1999, CCAMLR's Scientific Committee (CCAMLR, 2000a) "...stressed that continued illegal fishing holds serious implications for the long-term yield and that total catches, in some areas at least, may seriously compromise the status of the spawning stock in the shorter term." More recently, CCAMLR has stated that "... the continuation of IUU fishing could reduce toothfish stocks to levels from which they cannot recover" (CCAMLR 2001b).



Royal Australian Navy closing in on a suspected illegal fishing boat off Heard and McDonald Islands

4.4.4 Compliance and enforcement

As noted, the Commission has limited enforcement capacity of its own, relying instead on Members, Accessing States and co-operating non-parties to effectively implement and regulate agreed conservation measures. While the Commission continues to invite countries involved in fishing for or trading toothfish to join it or voluntarily co-operate with its conservation measures, as indicated in Table 2, membership of the Commission does not cover all countries involved in the catching and trading of toothfish. Complicating this further is the fact that operators from, and vessels of, Members and co-operating non-parties are themselves implicated in IUU activities for toothfish. In addition, the lack of a formal management regime for toothfish in the high seas outside the CCAMLR Convention Area allows fishing in such areas to be undertaken in an unregulated manner.

Enforcement of conservation and management measures in waters under national jurisdiction is undertaken by the respective coastal State. In regard to their respective Indian Ocean island territories, France and Australia have at-sea surveillance and enforcement patrols to deter, detect and, where appropriate, apprehend illegal fishing vessels in their EEZs, however such patrols are extremely expensive and relatively limited in terms of area and time coverage. Aerial surveillance also has limited feasibility due to weather conditions and the long distances from airfields.

The introduction of the CDS, with its reliance on port and market State enforcement, is evidence of the fact that control over the act of fishing itself is almost impossible in the remote Antarctic waters where the primary activity takes place.

4.4.5 Inconsistent implementation of the CDS

Undermining the effectiveness of the CDS is the fact that not all countries involved in the trade in

toothfish are fully applying the Scheme. In some cases this is despite either being Contracting Parties to the Convention or having agreed to apply the CDS as a co-operating non-party. For example, although a Contracting Party and one of the major importers of toothfish, Canada has not yet implemented the CDS despite repeated requests from the Commission and representations by individual Member countries to do so in the period since the CDS was adopted.

CCAMLR Member countries are required to detain shipments of toothfish that do not carry the necessary documentation and to not accept shipments where such documentation is produced but is not valid. However, as noted, there are inconsistencies in the level of validation required by individual Members of information contained in the *Dissostichus* Catch Document (DCD). While some Members require proof of where catches have been taken through data from the vessel monitoring system before accepting it in their ports, other Members may not require such proof and allow catch to be landed on the basis that it is accompanied by the correct and completed forms. Flag States have responsibility for the activities of their vessels on the high seas, including verifying on request that catch has been taken in a manner that does not undermine CCAMLR's conservation measures. However, such verification is questionable when vessels flagged in such States may themselves be implicated in IUU fishing activity.

The combined impact of both the incomplete and inconsistent implementation of the CDS is to seriously undermine the effectiveness of the cornerstone of CCAMLR's measures to combat IUU fishing for toothfish.

5 CONVENTION ON INTERNATIONAL TRADE IN ENDANGERED SPECIES

5.1 What is CITES?

Entering into force on 1 July 1975, the key principle behind the establishment of CITES is that no one country can effectively control international trade in wildlife. Therefore the main purpose of CITES is to provide a legislative and regulatory framework for international co-operation in the international trade of wildlife. CITES does this in two main ways: first, by providing a mechanism for the prevention of international trade in threatened species and, second, by assisting in the effective regulation of international trade in others. CITES works through controls on both the export and import of listed species.

Currently, 158 countries are Parties to CITES.

In regard to fished marine species, several in significant international trade are currently listed in CITES Appendices, including Queen conch, giant clams and all hard corals. In addition, Basking shark and Great white shark have been listed in Appendix III by the UK and Australia, respectively. No marine fish taken in a large-scale, commercial fishery has yet been listed on CITES although all sturgeon and paddlefish, Acipenseriformes, are listed in either Appendix I or II, and are traded in significant quantities.

5.2 General description of how CITES works

As an international convention dealing with trade, CITES is premised on co-operation between exporting and importing States. Species of concern are proposed for listing by a Party and then discussed and put to a vote at the biennial meeting of the Conference of the Parties. These proposals are often co-sponsored by other Parties. In practice, States generally consult with any other range States before proposing the listing of a species, with nominations by range States usually considered to carry more weight. Decisions on listings require a two-thirds majority vote of Parties present and voting, including decisions to list and de-list a species or transfer it between the Appendices. Any Party may enter a reservation on a species listing within 90 days of the listing, which results in the Party being treated as a non-party to the Convention with respect to that species, until the reservation is withdrawn.

5.2.1 The role of each of the three Appendices

Appendix I

An Appendix I listing offers the highest protection for a species under CITES. A species listed in Appendix I must be currently threatened with extinction and affected by, or could be affected by, international trade. Trade in an Appendix I listed species is only authorised in exceptional circumstances and any such trade may not be for a primarily commercial purpose.

Appendix II

An Appendix II listing of a species does not necessarily mean that it is currently threatened with extinction nor that trade in that species will be limited, however any such trade must be determined not to be detrimental to the survival of the species. Appendix II includes species that may become threatened if their trade is not effectively regulated. Through adoption of listing criteria, the CITES Parties have concluded that Appendix II should include species for which the harvesting of specimens from the wild for international trade has, or may have, a detrimental impact on the species by either exceeding, over an extended period, the level of harvesting that can be continued in perpetuity, or reducing the species to a population level at which its survival would be threatened by other influences.

The CITES treaty requires that trade in Appendix II species must only be authorised by governments if certain required management and scientific determinations are made, including the requirement to not be detrimental to the survival of the species in the wild.

To ensure that trade in an Appendix II-listed species is non-detrimental, a number of steps must be completed prior to export. First, the Scientific Authority of the State must advise that the export would not be detrimental to the survival of the species. Second, the Management Authority of the State must be satisfied that the species was not illegally obtained. The Scientific Authority may also determine that limits should be placed on export of a species in order to maintain it throughout its range at a level consistent with its role in the ecosystems in which it occurs. Annual quotas are one example of such limits.

In relation to importation of Appendix II-listed species, the importing State must require the prior presentation of the export permit or re-export certificate. If a species is re-exported, the re-

exporting State's Management Authority must be satisfied that the species was imported in accordance with CITES provisions.

The above requirements relate to species that are harvested from areas that are under the jurisdiction of a State. CITES provisions relating to species that are introduced from the sea, outside the jurisdiction of any one State, are discussed separately under subsection 5.2.2, below.

Appendix III

Species listed in Appendix III include those subject to regulation within the jurisdiction of a State but requiring the co-operation of other States to prevent or restrict their exploitation through trade. As the purpose of an Appendix III listing is to assist a State in regulating a species under its jurisdiction there are no provisions in the Convention relating to the introduction from the sea of an Appendix III-listed species. Further, there is no requirement for non-detriment findings to be made in relation to an Appendix III listed species.

A CITES Party can unilaterally list a species in Appendix III at any time. Recent examples of Appendix III listings of marine fish include Basking shark and Great white shark.

5.2.2 Introduction from the sea

'Introduction from the Sea' is a significant provision in the application of CITES to many large-scale commercial marine fisheries. Under CITES, introduction from the sea is defined as "...transportation into a State of specimens of any species which were taken in the marine environment not under the jurisdiction of any State" (Art. I (e)). To date CITES Parties have not clarified what constitutes waters under a State's jurisdiction beyond the 12 nautical mile territorial sea.

Article IV 6 of the CITES treaty requires the Management Authority of a CITES Party to issue a certificate of introduction from the sea before the introduction takes place. In issuing the certificate the Management Authority must act on the advice of the Scientific Authority that '...the introduction will not be detrimental to the survival of the species involved' (Art. IV 6(a)).

As introduction from the sea does not constitute either an export or an import under CITES, an important distinction exists between the requirements for the granting of a certificate of introduction and those for an export or import permit for an Appendix II-listed species.

In relation to species listed in Appendix II, the exporting State must meet two conditions prior to

export. First, the Scientific Authority must advise that the export will not be detrimental to the survival of that species, and, second, the Management Authority must be satisfied that the specimen was not obtained in contravention of the laws of the exporting State for the protection of fauna and flora. Therefore, there is both a biological and a legal finding required prior to export. The export permit must also be presented to the importing State prior to importation. A number of countries also require an import permit to be granted prior to importation, including members of the EU, exercising the right under Article XIV of CITES to implement a stricter domestic measure. This effective double-check has been used to prohibit, for example, the import into the EU of certain species of coral from Indonesia due to concerns over the veracity of the exporting country's non-detriment finding.

CITES was negotiated and entered into force prior to the completion of negotiations on the LOSC and the subsequent establishment of a legal regime for marine waters and obligations on States to cooperate with each other in the conservation and management of high seas resources. The CITES treaty itself and its negotiating history are clear, however, as to the applicability of the treaty to all wild species, whether terrestrial or marine. Article XIV of CITES states, among other things, that it is without prejudice to the development of the LOSC. However, CITES does not contemplate that there may be regimes established in waters that are not under the jurisdiction of any State which may require a finding as to whether a listed species was legally harvested. Therefore, in regard to introduction from the sea, the only requirement is for the CITES Scientific Authority of the state of introduction to be satisfied that the introduction will not be detrimental to the survival of the species.

At the ninth meeting of the CITES Parties in 1994 the USA put forward a draft resolution and paper discussing aspects of the implementation of CITES Article IV paragraphs 4 and 5, which was discussed but not put to a vote. At the 10th meeting of the CITES Parties in 1997 the USA put forward a draft resolution to establish a Marine Working Group to discuss introduction from the sea and other technical issues relevant to the application of CITES to marine fish, which was not adopted. At the 11th meeting of CITES Parties in 2000 Australia proposed a draft resolution to guide the application of the introduction from the sea provisions. The proposed resolution was not adopted although it received substantial support.

5.2.3 Compliance under CITES

The CITES Parties have established a number of processes through which remedial action can be taken against a country that is not fulfilling its obligations under the Convention. In cases where a CITES Party does not implement domestic legislation in support of CITES, as required under the treaty, notification may be made to other Parties to suspend trade in all CITES-listed species with that country. Further, infractions reports are provided to the Conference of Parties at their biennial meeting that describe problems with compliance with CITES measures.

Another process through which CITES investigates compliance with and the effectiveness of an Appendix II listing is through what is commonly known as a 'Significant Trade Review'. Under a Significant Trade Review an independent group of experts reviews the trade and management situation for a particular species and may make recommendations on changes where trade in that species is of concern. Recommendations are based on implementation of CITES Article IV, specifically as it pertains to the issuance of scientific non-detriment findings and the sustainability of trade. If a Party fails to take action to implement the recommendations resulting from a Significant Trade Review, trade in the affected species with that Party can be suspended by the CITES Standing Committee, although compliance by the Party is the overall objective.

Resolution 8.9 (Rev) of the CITES Conference of Parties provides for recommendations under a Significant Trade Review to be either primary or secondary recommendations:

i) primary recommendations include, for example, administrative procedures, specific quotas, zero quotas or temporary restrictions on exports of the species concerned; and

ii) secondary recommendations include, for example, field studies or evaluation of threats to populations or other relevant factors, including illegal trade, habitat destruction, internal or other uses, designed to provide the information necessary for a Scientific Authority non-detriment finding in relation to those species under review for which sufficient information is available on trade and biological status, to determine possible problems with the implementation of the relevant paragraphs of Article IV, and following consultation with the range States, to make specific recommendations.

An individual State may implement stronger conservation measures than those provided for or agreed under the provisions of CITES.



Hauling longlines set for toothfish in the southern oceans.

Photograph: B. Watkins

6 POSSIBLE BENEFITS OF AN APPENDIX II LISTING OF TOOTHFISH

While Patagonian and Antarctic toothfish could be proposed for listing under either Appendix I or II, this analysis will deal with the implications of an Appendix II listing. Currently, CCAMLR allows for the controlled catch and landing of toothfish, which is consistent with an Appendix II listing. Further, given that commercial trade would be prohibited under an Appendix I listing an examination of an Appendix II listing provides for a more detailed discussion of a range of trade-related implementation issues for toothfish, particularly CITES' potential role in assisting CCAMLR in the effective regulation of trade. It should be noted, however, that many of the issues discussed would be common to a listing on either Appendix I or II. In relation to an Appendix III listing, such a listing would have little impact on the overall sustainability of toothfish given that the majority of the catch is taken on the high seas and Appendix III contains no provisions relating to introduction from the sea. Further, as there is no requirement for a non-detriment finding under an Appendix III listing there would be little conservation value in listing toothfish in this Appendix.

CCAMLR acknowledges that pursuit of its ecosystem approach and conservation efforts for species such as toothfish will require close co-operation with other organisations that can assist in influencing activities that are not directly under the mandate of the Commission (CCAMLR 2000b). In particular, CCAMLR recognises that "...IUU fishing activities are often also conducted outside the Convention Area." (CCAMLR 2001b). This section will therefore deal with the potential contribution that a CITES Appendix II listing of toothfish could make to the pursuit of these objectives while Section 7 considered some of the implementation issues that would arise if a listing were to occur.

6.1 Membership of CITES and CCAMLR

Currently all 30 CCAMLR Members and Acceding States are also Parties to CITES. Of around 55 States or entities that have been involved to some degree in the catch and / or trade of toothfish over the past three years only four are not members of CITES; Laos, Bosnia-Herzegovina, Serbia-Montenegro and Taiwan. Taiwan, which is unable to join CITES, voluntarily applies relevant provisions of the Convention.

At present the effectiveness of CCAMLR's conservation measures is undermined because of the potential for toothfish catches to be taken by and landed in States that are not Members of or Acceding States to the Convention. CCAMLR has had only limited success in convincing non-parties to either



Photograph: Greenpeace/Grace

join it or voluntarily apply its measures. The much broader global membership of CITES may therefore have some practical advantages as it is highly likely that any port or market State will also be a CITES Party. Although CITES provisions would not directly impact on the conduct of fishing activity, toothfish catches taken by IUU fishing activity would be subject to these provisions at the time the catch was introduced from the sea, exported or imported.

The extent of the advantage offered by CITES in this regard should however be viewed with some caution given that 90 per cent of the total toothfish traded ends up in the markets of the USA, Japan, Canada and the EU. More stringent application of the current CCAMLR conservation measures by these countries could potentially achieve much the same result. For example, as noted, despite repeated requests by CCAMLR Members, Canada has not implemented the CDS even though it is both an Acceding State to the Convention and involved in the import and export of toothfish product. Further, consumer States could themselves require verification of where catches had been taken rather than relying on second, third or even fourth parties to verify this information. Although more time-consuming, this would be possible as the current CDS scheme tracks catches from the vessel to the State of final importation.

Apart from the possibility of achieving a wider practical application of conservation measures for toothfish as a result of the broader CITES membership, a further consideration is the potential for greater international influence and, if necessary, pressure exerted by 158 countries compared to the smaller membership of CCAMLR. In the case of toothfish, this could result in a number of benefits including; an increase in the countries applying the agreed conservation measures; the inability of countries that did not apply those measures to find markets for their products; or the suspension in trade of all CITES-listed species from a CITES Party whose domestic legislation was insufficient to implement CITES provisions.

6.2 Geographical area of competence

One of the main potential benefits achieved under a CITES listing of toothfish is that the geographical area of application under CITES is global. This compares to the more limited Convention Area of CCAMLR. While in combination with the co-operation of Member coastal States, the Commission's influence encompasses the major Patagonian toothfish grounds and all known commercial grounds for Antarctic toothfish, loopholes exist in the effective application of this influence. As noted, the main reason for this is that the absence of comprehensive at-sea enforcement means that catches of toothfish taken within the Convention Area, and from the waters of coastal States, are being misreported as having been taken on the high seas outside the Convention Area. Compounding this inability to exercise at-sea enforcement is the fact that many flag States, including some CCAMLR Members, are not exerting control over the activities of their vessels or effectively verifying their catches.

At the annual meeting of CCAMLR in October 2001, Members discussed options to close existing loopholes including the application of the vessel monitoring system to waters beyond the Convention Area. However, this would require the Commission to extend the application of certain conservation measures beyond its area of competence, and thus beyond the mandate provided by its Convention. In lieu of the extension of the vessel monitoring system, a resolution was agreed whereby a Port State may request verification from a vessel of where catch has been taken, including through information taken from vessel monitoring systems, in issuing a Certificate of Landing under the CDS (CCAMLR, 2002). While this resolution provides a more solid basis for an individual country to refuse the landing of toothfish where vessel monitoring system information is not provided, there is no requirement for a Port State to verify the information contained on the CDS forms in this manner. Further, vessel monitoring information can not of itself show where catch was taken. This raises the possibility that a boat permitted to fish both within and outside the Convention Area may still claim all or part of its catch as having been taken outside the Area, thus circumventing CCAMLR's total allowable catch limits.

Assuming that Patagonian and Antarctic toothfish were listed as species, rather than on the basis of certain populations, the unlimited geographical application of CITES could address this problem as its provisions would apply regardless of the location of the catch. However there are a number of

attendant implementation issues that require consideration including; the basis for a CITES Scientific Authority's non-detriment finding; the ability of an exporting country to determine the legality of any catch; and which provisions of CITES would actually apply to any given landing of toothfish. These are discussed further under Section 7.

6.3 Decision-making under CITES

One important element in assessing the potential effectiveness of a CITES-listing of toothfish is the decision-making and reservation procedures under CITES. Decisions by the Conference of Parties to amend Appendices I or II are taken by a two-thirds majority of Parties present and voting. However, a Party may enter a reservation on any amendment such that the Party is treated as a non-party to the Convention with respect to the species concerned.

In general, CITES Parties do not exercise the option of taking out a reservation on a species listing. In cases where this has occurred, to the detriment of the conservation status of the species, pressure to withdraw the reservation has been exerted by other countries. An example of this was the decision by Japan to remove its reservation on certain marine turtle listings in response to international pressure over its continued trade in their products. There have also been cases where unilateral action has been taken against a country or entity because of its continuing trade in a threatened species, even if technically legal under a reservation.

In relation to toothfish, if a major toothfish catching or consuming country were to take out and maintain a reservation it would potentially limit the effectiveness of a toothfish listing. This would be particularly significant given the extent of toothfish landings that would fall under the introduction from the sea provisions as a State with a reservation would not have to issue certificates of introduction for such fish and so they would not be documented under a CITES scheme. However, if the fish were then exported to a CITES Party that did not have a reservation, documentation comparable to that specified by CITES would be required. For a reservation to have any effect in removing a country from its CITES obligations both importing and exporting countries, or States introducing toothfish from the sea and the subsequent importing country, would have to enter a reservation.

The reservation provisions of CITES are not dissimilar to those used by CCAMLR. While decisions in that forum are taken by consensus a Member of the Commission may subsequently notify that it is unable to accept a particular conservation measure. In relation to the conservation measures relevant to



Freshly caught Patagonian toothfish on board a longline vessel

toothfish, including the CDS, no Member has notified its non-acceptance. Given this, the question arises as to whether a CCAMLR Member that has agreed to the CDS would take out a reservation to an Appendix-II listing on CITES. However, even if that were to occur the conditions of the CDS under CCAMLR would continue to apply.

6.4 Tools for compliance

As noted, CITES has a number of tools through which it regularly applies pressure on or censures countries that are not effectively implementing the provisions of the Convention. The broad membership of CITES provides it with sufficient mandate to multilaterally suspend trade in listed species with a country on that basis.

In comparison CCAMLR has limited ability to enforce its own measures and does not have well-established processes under which its Members may take action against a country that is considered to be undermining the agreed conservation measures.

Such processes are particularly difficult to establish under a consensus decision-making regime where vessels flagged to Members may be implicated in IUU fishing activity. In such circumstances, any unilateral action by a Member may leave it vulnerable to dispute under the provisions of the World Trade Organisation.

A listing of toothfish under CITES would potentially provide scope for action to be taken against countries that, for example, were making non-detriment findings inconsistent with the biological status of the species or allowing the export of fish that may have been illegally taken. Given that findings under CITES of non-detriment and the legality of toothfish catch can only rely on the same information currently available to CCAMLR this is potentially a key benefit of CITES. This is particularly important to ensure that the major weakness of the current CCAMLR regime, depending on flag States effectively controlling their vessels' activities, is not simply substituted with an over-reliance on port States under CITES.

7 IMPLEMENTATION ISSUES

7.1 Introduction from the Sea provision

7.1.1 Definition of what constitutes introduction from the sea

Although CITES states that it is without prejudice to the codification of the LOSC, the CITES Parties have not explicitly adopted the jurisdictional regime for marine waters established under that Convention despite its entry into force in 1994. While some countries maintain that the entry into force of the LOSC automatically altered the definition of what constitutes waters under the jurisdiction of a State under CITES, it is unclear whether this is a widely held view among CITES Parties. Therefore what constitutes waters under a State's jurisdiction beyond the 12 nautical mile (nm) territorial sea has not yet been agreed, which in turn blurs the definition of what constitutes fish introduced from the sea.

In relation to toothfish, this lack of clarity would affect any toothfish taken from waters between 12 and 200nm off sub-Antarctic island territories and coastal States and potentially result in toothfish taken in these areas being subject to different CITES provisions.

The toothfish fishery in the waters surrounding Australia's Heard and McDonald Island is used to illustrate this issue:

a) Toothfish is taken within 12nm of Heard Island and landed in an Australian port

- the fish has not been traded or introduced from the sea, therefore there would be no requirement for any permit or certificate of introduction under CITES
- if the fish were subsequently exported, an export permit would be required

b) Toothfish is taken within 12nm of Heard Island and landed in non-Australian port

- requires an export permit to be granted by Australia

c) Toothfish taken between 12 and 200nm from Heard Island

- currently under CITES this may constitute introduction from the sea, regardless of where the fish was landed, and require the prior grant of a certificate of introduction

d) Toothfish taken between 12 and 200nm from Heard Island and transhipped in a non-Australian port

- the fish has not been traded therefore there would be no requirement for any permit or certificate of introduction under CITES at this stage
- an introduction from the sea certificate would, however, be required to be granted by the first State of landing.

There are a number of practical issues to consider in relation to this issue.

First, there is potential for conflict at a domestic level between implementing legislation for CITES and fisheries legislation, which in many cases would reflect a State's jurisdiction out to 200nm. States may be unwilling to implement a decision of CITES that impacts on the definition of waters under their jurisdiction on the basis that this could weaken their claims over such waters. This may particularly be the case where there are disputes over maritime boundaries and possession of territories.

A second issue is the potential for conflict between States in regard to their responsibilities for issuing permits. For example, consistent with its fisheries legislation and sovereign interest over the waters surrounding Heard and McDonald Islands, Australia may wish to issue export permits for catches taken from waters within 200nm of the islands. However, the State of landing may consider the same catch as having been introduced from the sea.

A further practical consideration is that it is possible that on the one fishing trip a vessel may fish both within and outside the 12nm boundary. This would result in part of the catch being subject to introduction from the sea and the other subject to either export requirements or no CITES provisions, depending where it was landed. This situation may arise regardless of whether the definition of waters under a State's jurisdiction is interpreted to conform to that of LOSC. The lack of certainty created by all of the above would adversely impact on industry's ability to operate their businesses efficiently and comply with both CITES and fisheries obligations.

Issues relating to conflict over what constituted waters under the jurisdiction of a State could be addressed by the CoP adopting a definition of such waters that was consistent with the LOSC. While noting that not all States with a coastline have yet adopted and defined their waters in a manner consistent with the LOSC this would nevertheless provide a major step towards removing the major sources of conflict with fisheries legislation and sovereign rights issues.

Ensuring the consistent application of CITES provisions relating to introduction from the sea should be considered a prerequisite to a listing of toothfish. In the remainder of this paper, therefore, the term 'introduction from the sea' will refer to toothfish taken from high seas areas only; that is, from waters not included in the exclusive economic zones, territorial sea or internal waters of a State, or the archipelagic waters of an archipelagic State, as defined under the LOSC.

In relation to the third issue of 'split catches', a practical solution would need to be developed to prevent uncertainty among industry and the potential to manipulate reporting requirements. One option would be for the CoP to make a decision that all such catch should be subject to a single requirement, being whichever is the more stringent. For example:

- for catch split between export permit requirements and introduction from the sea, export permit requirements would apply
- for catch split between introduction from the sea and no CITES provisions applying, introduction from the sea would apply.

While this option may present legal difficulties in that it seeks to apply CITES provisions beyond the scope of the Convention in some circumstances it is indicative of the need to pursue a practical solution to this issue. It is often the case within CITES that, when presented with new commodities or unique situations concerning trade in a species, Parties spend considerable time developing and reviewing practical resolutions to allow for flexibility. This has occurred for trade in caviar and crocodiles for example, as well as in relation to the implementation of Appendix II listings for commercially traded timber species.

7.1.2 The legal status of toothfish introduced from the sea

The provisions under CITES for introduction from the sea are particularly significant for Patagonian and Antarctic toothfish fisheries. The extent of fishing activities on the high seas, as well as the difficulties in detecting IUU fishing in waters under national jurisdiction, would result in much of the Patagonian and Antarctic toothfish landed being treated under these provisions. In the latter case, although catches illegally taken from waters under a State's jurisdiction would not literally fall under the definition of introduction from the sea such catches are commonly misreported as having been taken on the high seas in order to avoid prosecution by the coastal State. The application of the introduction from the sea provisions to the toothfish fishery raises a number of important issues.

There is no recognition under CITES of the potential for a listed species to have been taken in a manner that contravened the conservation and management measures established by a regional fisheries organisation or in a manner that violated international law. Therefore, where toothfish claimed to have been taken on the high seas is landed into a Port State, the Management Authority of that State has no explicit decision-making role under which it

can take into account whether the catch was taken in a manner that undermined CCAMLR's conservation measures.

Before assessing the full potential impact on toothfish conservation of the narrower requirements for product introduced from the sea under CITES it is necessary to examine the next step in trade in toothfish products.

While the majority of toothfish is likely to be introduced from the sea at the first point of landing, over 90 per cent is then exported to other countries and, in some cases, re-exported to the consumer country after further processing. If listed in Appendix II, toothfish that was exported from a CITES Party would need to be accompanied by an export permit. Grant of the export permit requires both a finding by the Scientific Authority that the export will not be detrimental to the survival of the species (presumably on the same basis as that for the original grant of the certificate of introduction) and for the Management Authority to be satisfied that the toothfish was not obtained in contravention of that country's laws for the protection of fauna. In addition EU member countries, major importers of toothfish, also require import permits to be issued prior to the importation of an Appendix II-listed species. Other countries also have the capacity to implement stronger measures in relation to importation of CITES-listed species including Australia which can require import permits for certain species.

If a non-CITES party wished to export toothfish to a CITES Party, documentation comparable to that specified by CITES would be required. The only aspect of trade in toothfish that would require no documentation under CITES would be trade between two States that were non-parties to CITES.

As noted under sub-section 5.2.3 CITES has a number of tools at its disposal to encourage compliance with its measures and could suspend trade in listed species with a country that was exporting illegally caught toothfish.

Therefore, although CITES provisions for introduction from the sea require only a non-detriment finding, subsequent export of toothfish would require both a non-detriment finding and a finding on the legal status of the fish. An Appendix II listing could therefore potentially expand the application of toothfish conservation measures beyond CCAMLR Members and co-operating non-parties and provide a means to encourage more effective implementation of those measures. The basis for and timing of a finding prior to export that the toothfish has been legally obtained is discussed further in sub-section 7.3.

7.2 The basis of non-detriment findings for toothfish

The main direct control on the sustainability of toothfish within the Convention Area is the establishment of total allowable catches. CCAMLR's Working Group on Fish Stock Assessment provides advice to the Scientific Committee on long-term annual yields, which the Committee then considers and uses as the basis for its advice on total allowable catch (TAC) limits to the Commission. These TACs are set based on estimates of sustainable catch projected over a 20-year plus time horizon. A TAC is set by the Commission on an annual basis for each developed, exploratory or new fishery for which sufficient information is available, and applied to statistical sub-areas within the Convention Area. While Member countries must provide prior notification of the intention of their vessels to fish in an area, there is no allocation of a certain level of catch to any individual country. As there is no allocation to individual countries, authorised vessels fish in a given sub-area in a competitive manner for a share of the available TAC. The Commission's Secretariat monitors reported catches against the TAC and the fishery is closed if and when the allowable catch limit is reached.

In a similar way under CITES, limits, usually referred to as quotas, can be placed on the total number (or quantity) of specimens that can be traded of an Appendix II-listed species in a year. These quotas directly relate to export quotas established for that species by range States. In the case of a shared stock, such as sturgeon in the Caspian Sea, range States reach agreement on catch and export quotas and, once agreement is reached, then take responsibility to manage the export of their share of the total quota under CITES provisions. The Scientific Authority's non-detriment finding is then made in reference to the national quota (also termed national allocation).

The TACs established by CCAMLR for Patagonian and Antarctic toothfish reflect the best available information on what is a sustainable level of catch and also take into account the impact of catches on the broader ecosystem. Given this, and the fact that over 90 per cent of toothfish is traded, the TACs set by CCAMLR would correlate closely with a non-detriment finding under CITES as to whether the level of trade is sustainable.

However, a complicating factor in basing a non-detriment finding on CCAMLR TACs is that, under the current CCAMLR system, any illegal, unreported or unregulated catch known to have been taken from a

sub-area during the course of the fishing season is not deducted from the TAC for that sub-area in real time but rather is taken into account when setting the TAC for the following season. For example, approximately 200 tonnes of toothfish has recently been seized by Australian authorities following the arrest of two vessels allegedly fishing illegally for toothfish in Australian waters around Heard Island. However, the TAC of 2,815 tonnes for the year 2001/02 has not been reduced by 200 tonnes; instead the additional catch will be factored into the setting of the TAC for that sub-area for the year 2002/03. Although, all other factors being equal, there would be some reduction in the TAC for 2002/03, the reduction will not be in the order of 200 tonnes as removals are, in effect, amortised over the 20-year plus time horizon. This means that any non-detriment findings under a CITES listing of toothfish based simply on whether or not a particular TAC had been reached would be a significant departure from current practice under CCAMLR. Further, depending on how the non-detriment findings were implemented there is the potential to create conditions within the fishery that could actually encourage IUU fishing to occur. This is discussed in more detail under sub-section 7.2.2.

7.2.1 Toothfish caught in and exported from waters under the jurisdiction of a State

There are a number of fisheries for toothfish that take place in waters under the jurisdiction of a coastal State within the Convention Area. TACs for these waters are set either through the same process as those for other sub-areas; that is, on the advice and recommendations of the Scientific Committee, or through an internal process undertaken by the coastal State and notified to CCAMLR. In these circumstances, because such waters are fished under the control of an individual country the TAC is similar to a range State quota under CITES and a non-detriment finding for toothfish exported from those waters would therefore be relatively straightforward.

There are also a number of fisheries for toothfish in national waters that lie outside the CCAMLR Convention Area, for example the Chilean artisanal fishery and Australia's Macquarie Island fishery. Non-detriment findings for toothfish exported from these waters would be based on the management measures implemented by the relevant coastal State, which might be a TAC or some other form of effective control on fishing effort in that area.

7.2.2 Toothfish introduced from the sea

In the context of CCAMLR's competitive TAC regime, an Appendix II listing of toothfish would raise the question of the basis on which a country would make a non-detriment finding when assessing whether to accept the introduction of toothfish from the sea. There is little question that information provided by the Scientific Committee of CCAMLR would provide the most robust basis to make a non-detriment finding. However, consideration needs to be given to how best to link national authorities with CCAMLR to accommodate the characteristics of the toothfish fishery and gain the information required.

In relation to linkages between national authorities and CCAMLR's Scientific Committee, Article IV 7 of CITES states that a Scientific Authority's advice may be reached in consultation with international scientific authorities. However, Article IV 7 goes on to link that advice with the granting of certificates of introduction for a period of time and relating to a total number of specimens to be introduced over that period. These factors – time and total numbers – raise difficulties in the context of the toothfish fishery. First, toothfish catch is recorded in weight, with boats capable of landing 300 metric tonnes per trip. It would clearly be impractical to account for large catches in numbers of specimens, particularly where partial processing of the fish had occurred at sea. Second, the amount of toothfish that may be introduced by a vessel will vary from season to season, so it would not be possible for a country to accurately predict total amounts for inclusion on an introduction from the sea certificate. Therefore, the provisions under Article IV 7 taken in their entirety may prove impractical for toothfish unless the CITES CoP were to discuss and adopt a flexible interpretation of Article IV 7 through a resolution or an annotation to a toothfish listing in Appendix II.

An alternative to directly linking with the provisions of Article IV 7 would be for the CoP to simply make a decision when listing toothfish that non-detriment findings for toothfish introduced from the sea should be made with reference to the TACs established by CCAMLR.

Regardless of whether advice from CCAMLR's Scientific Committee was accessed under the provisions of Article IV 7 or through a decision by the CoP upon listing, a number of issues remain to be considered.

As noted, CCAMLR sets TACs for individual sub-areas within its Convention Area, enabling it to manage individual stocks and the ecosystem effects of off-takes. Assuming that CCAMLR continued to manage by sub-area, including authorising vessels of

Member countries to fish in those areas, the relevant question for a CITES non-detriment finding would be whether or not the total catch of toothfish had been exceeded. If CCAMLR were to establish an overall total allowable catch for each toothfish species a CITES Party could then simply make a non-detriment finding on that basis. However, in isolation, this approach could have significant negative repercussions as it would promote a high level of competition between operators, both legal and IUU, to ensure that they caught and landed their catch before the overall TAC was reached. Non-detriment findings made on the basis of each of the sub-area TACs established by CCAMLR would not remove the problem of competition for fish within those areas.

Competition between legal and IUU vessels under a TAC, set on either an overall or sub-area basis, would inevitably result in the over-capitalisation of fleets, potential wastage of product, and remove incentives for legal operators to fish within CCAMLR's established conservation measures, including their current role of reporting IUU activity. Although ensuring that total catch of toothfish remained within the CCAMLR TAC this approach would undermine the basis for the legal toothfish fishery and CCAMLR's efforts to eliminate IUU fishing.

Under CCAMLR's current approach, this issue only arises in relation to competition between Member countries' vessels legally fishing in sub-areas. This is because catches from non-Members or illegal operators are not deducted from the TACs during that fishing year but, as noted, are amortized over a 20-year plus time horizon.

In addition to the broader considerations with approaches to non-detriment findings, a practical consideration is that, while separate stock assessments are undertaken for each species using its biological characteristics, the total allowable catches established by CCAMLR are not explicitly set for Patagonian toothfish or Antarctic toothfish. Rather the TACs relate to a statistical sub-area where one or other of the species is predominantly expected to occur. This could however, be readily addressed by the Commission setting explicit TACs for each species.

A further issue with non-detriment findings relates to catches reported as being taken on the high seas outside the CCAMLR Convention Area. These catches take two main forms. First, as described under sub-section 4.4.2, one of the major factors undermining CCAMLR's conservation measures for toothfish is catch claimed to be taken on the high seas outside the CCAMLR Area that has been taken from the waters of coastal States or from the high seas within the CCAMLR Area. Second, there are

catches of toothfish that are genuinely taken in areas of high seas outside the CCAMLR Area, including substantial catch taken on the Patagonian slope.

There is currently no regulatory framework for the conservation and management of toothfish resource in high seas areas outside the CCAMLR Convention Area and, as such, there is no basis upon which a non-detriment finding could be made. One option to address this situation would be to determine a nil quota (that is, no trade allowed) for these high seas areas. This approach that has been used by CITES Parties in relation to other species. This would mean that a non-detriment finding could not be made in relation to toothfish claimed as having been taken in these areas.

Determining a nil quota would clearly have a major impact on operators that are genuinely catching fish in those high seas areas. However the fact that fishing for toothfish in these areas does not take place under a conservation framework raises questions about the long-term sustainability of catches in those areas and the basis on which any non-detriment finding could be made. Although CCAMLR's Scientific Committee would remain best placed to advise on a non-detriment finding for such catches, it may be difficult for it to do so for areas outside the mandate of the Commission.

In regard to misreported and / or illegal catch of toothfish, establishing a nil quota for the high seas outside the CCAMLR Convention Area would close the current loophole. However, it would then create the opportunity for IUU fishers to land catch at a non-CCAMLR, but CITES Party's, port and claim that catch had been taken on the high seas within the Convention Area. While such catch would then be subject to non-detriment findings based on whether or not the TAC set by CCAMLR had been exceeded, it would potentially allow illegal or unregulated catch to be landed and traded under CITES provisions. This would clearly be contrary to attempts by CCAMLR Members to eliminate IUU fishing for toothfish, as well as the requirements under CITES export provisions for specimens to have been legally obtained. Further, it would exacerbate the situation whereby legal operators were required to 'race for fish' with illegal and unregulated operators before a TAC was reached and the fishery closed. It would however, ensure that the total trade in toothfish did not exceed the total allowable catches established by CCAMLR. To prevent the potentially significant impacts of this scenario CITES Parties would need to require verification of where catch was taken and whether the vessel was authorised to fish in the CCAMLR Convention Area before accepting toothfish into their ports. This is discussed further in sub-section 7.3.

7.3 The basis for a finding that toothfish has been legally obtained

The approach described under sub-section 7.2 for a non-detriment finding to be made on the basis that the CCAMLR total allowable catch had not been exceeded would not in itself enable identification of whether that catch had been taken in the course of IUU fishing. As noted in sub-section 7.1.2, toothfish introduced from the sea does not require a finding to be made as to the legality of the catch at the time of introduction, however such a finding must be made at the time of export. This raises the issues of the timing of, and the basis for, the finding as to whether the catch was legally obtained.

It would seem counter-intuitive for a State to allow toothfish to be landed in its ports, processed, and then only determine if it had been legally obtained at the time of export. Ideally, a relevant finding would be made simultaneous to the introduction itself. As IUU fishing activity for toothfish is widely recognised to be the most significant threat to the long-term sustainability of the species such fishing could reasonably be considered to be inherently detrimental and therefore form part of the basis for the non-detriment finding. This would require identification of what was IUU catch by the Scientific Authority at the time of its introduction.

Identification of IUU catch at the time of its introduction would require the State of introduction to verify where the catch was taken. This would be consistent with the current provisions for issuing a Certificate of Origin under the CDS but would necessitate the Port State validating where catches had been taken. Further, to ensure that unregulated, flag of convenience, vessels were not able to land and trade toothfish, the CITES CoP, by resolution, could require that a vessel must be authorised to fish under the CCAMLR measures before accepting toothfish from it. Such a finding would then facilitate a finding on the legality of the product at the time of export. These measures combined would, firstly, allow non-detriment findings to be based on sub-area TACs and, secondly, address the potential for IUU fishing to undermine CCAMLR's conservation measures for toothfish. Such an approach under CITES would require further consideration in regard to questions of the relationship with international fisheries law, particularly the LOSC.

In relation to the high seas areas outside the CCAMLR Convention Area, verification of where catches had been taken would close the current loophole of catches taken in the Convention Area being claimed as having been taken beyond it or on the high seas inside the Convention Area. However

the issue of the basis for a non-detriment finding for catches genuinely taken in areas outside the Convention Area would remain and, in the absence of some form of a limit on catches or fishing effort, may still require a nil quota to be applied by CITES.

7.4 Readily recognisable part or derivative

Under Article I of CITES, the term 'specimen' means any readily recognisable part or derivative of a species included under Appendix I or Appendix II. The provisions of Appendix I and II then refer to the regulation of trade in specimens of the listed species.

The term 'readily recognisable part or derivative' has been interpreted to include any specimen which appears from an accompanying document, the packaging or a mark or label, or from any other circumstances, to be a part or derivative of an animal of a species included in the Appendices, unless such part or derivative is specifically exempted from the provisions of the Convention (CITES Resolution Conf. 9.6 (Rev.)). In relation to toothfish, this interpretation would cover all products that currently enter into trade.

7.5 Separation of Patagonian and Antarctic toothfish

There is little overlap of the fishing grounds for Patagonian and Antarctic toothfish so catches by vessels operating in a certain area will primarily comprise one or other of the two species. There is little incentive to identify any individual fish of the non-target species, even were they to occur, given that the market place does not appear to discriminate between the two. As discussed, separate harvest levels for each species are established implicitly through their application to specific sub-areas within which only one or other of the two species is likely to occur. CCAMLR has not made separate estimates of IUU fishing activity for Antarctic toothfish in the past, considering that such activity is 'probably low'.

While explicit TACs have not been established for each toothfish species catch reporting documents and the CDS require vessels to separately record the two species. Further, CCAMLR has previously recommended that its Member countries introduce separate trade codes for Patagonian toothfish and Antarctic toothfish however to date only the USA and New Zealand are known to have done so. Major importers of toothfish, including Japan, the EU and Canada record only *Dissostichus* spp. as the import code (Lack, 2001). The lack of species-specific trade codes impedes validation of reported catch against trade statistics. Such validation greatly improves the accuracy of estimates of IUU catch of both Patagonian toothfish and Antarctic toothfish, and

therefore the likely impact of that catch on stocks.

CITES listings of Patagonian and Antarctic toothfish would require each species to be individually recorded on all CITES-related documentation, with Parties required to provide an annual report detailing their trade in the species. The introduction of separate trade codes by CITES Parties for the two species, including the ability to record different product types, would be a logical extension of this requirement to build on a country's ability to accurately record its exports and imports. This would be consistent with the recommendation of CCAMLR for its Members to implement separate codes.

7.6 Look a-likes

Article II 2(b) of CITES requires that other species be placed in Appendix II if this is necessary to ensure the effective regulation of trade of a listed species. According to Annex 2b to Resolution Conf. 9.24, this should occur when "...the specimens resemble specimens of a species included in Appendix II under the provisions of Article II, paragraph 2(a), or in Appendix I, such that a non-expert, with reasonable effort, is unlikely to be able to distinguish between them."

As noted, Patagonian and Antarctic toothfish are very similar in appearance as whole fish and visually indistinguishable from each other in fillet form. Assuming that Antarctic toothfish was not listed in its own right, it would be necessary to consider this species under what is commonly referred to as the 'look a-like' provisions of CITES. In relation to other fish species, toothfish are quite distinct, including in filleted form, because of their extremely white flesh and sheen of oil, even in frozen form. However, it is possible that the more highly processed a toothfish becomes the more difficult it will be to visually distinguish from other species. This would then raise the risk of toothfish being laundered as another species. Such a species may then need to be considered for listing in Appendix II.

Once a species is listed in Appendix II the standard provisions for import and export would apply, regardless of whether its inclusion was on the basis of its conservation status or the fact that its listing would enable better control over a listed species. While in the case of Antarctic toothfish the process of making a non-detriment finding could follow the same course as that for Patagonian toothfish for many fish species the institutional support of a Scientific Committee and Commission is absent and therefore such a finding would be difficult to make. Further, if the controls exercised over such a fish species were more relaxed than those for toothfish

this could result in the potential for laundering of toothfish. This could encompass an array of different species occurring throughout the world, presenting both logistical and cost issues.

The listing of other fish species on the basis of 'look a-like' status with toothfish products would be one approach however there is a number of alternatives.

First, in listing Patagonian and Antarctic toothfish CITES Parties could agree as a resolution or annotation to the listing that toothfish only be traded in a form that would allow for its visual identification. While this may seem to be a practical option, under CITES if a part or derivative is not readily recognisable, it is not covered under CITES provisions. This would then raise the possibility of toothfish being processed at sea and never coming under CITES provisions. It is unlikely that CITES Parties could simply ban trade in non-recognisable parts of a species. However, if this was to occur it would create the potential for illegal trade in non-recognisable parts, as this would not require any documentation under CITES. This would then become a compliance and enforcement issue.

Requiring toothfish to be traded as whole fish only, for example, would also be incongruous with current trade practices whereby different toothfish products are sold into different markets: for example, heads and collars may be marketed in China while fillets are sent to the US or EU markets. A further problem with this option is that requiring that only whole toothfish be traded could result in toothfish being processed and traded under another name. Given the high price of toothfish there would appear to be a reasonable degree of market sensitivity to the 'toothfish' brand name in its various forms, therefore marketing it under a different name could be expected to impact on the price of the product. However, toothfish product could be exported and imported under a different name then, once through the final point of importation, revert to being labelled as toothfish. The extent to which toothfish products could be laundered in this manner would depend on the degree of any price impact, with its subsequent impact on the viability of fishing activity, and whether regulatory scrutiny could realistically be avoided for what would still be a high-value product. In regard to the latter, it could be expected that legitimate industry would monitor the market for signs of laundered toothfish that may be impacting on the demand for their own products and so draw illegal products to the attention of authorities. However, such impacts are likely to be felt at a low level of resolution, whereby the legal catching sector may feel the impact of a shipment of illegal fish on prices

for their own product but be unable to differentiate legal and illegal product in the market place.

A second alternative to the listing of any look a-like species is the development of a biochemical, or DNA, test for toothfish. A biochemical test has already been developed to distinguish between Patagonian and Antarctic toothfish fillets, as well as between toothfish and other fish species (Smith, Gaffney and Purves, 2001). The main difficulties with such tests are the technical resources required and the costs, as well as difficulties in the use of these techniques by customs officers. Further, many developing countries are engaged in the processing of toothfish products and would face difficulties in implementing a costly and resource-intensive biochemical-testing regime. Given the major consumer markets are Japan, the EU, USA and Canada it may be feasible to implement testing at this end point in the chain of trade. However, in general such techniques usually work best as verification tools and spot-checking for monitoring and enforcement purposes when problems are believed to exist rather than used on a routine basis for each shipment.

A third alternative would be to list Patagonian and Antarctic toothfish without any attendant listing of other potential look a-like species. This approach recognises that implementation issues can not all be assessed and solved in advance and should not delay the listing of a species that requires increased co-operation for its conservation. In relation to toothfish, the main issue with look a-like species is the risk that toothfish will be laundered as a visually similar species. However the real level of this risk is probably small as even in filleted form the flesh of toothfish is visually quite unique. Under this option, consideration would need to be given to establishing a monitoring programme to assess the extent to which any laundering may be occurring and the subsequent impact on the effectiveness of the listing. CCAMLR's catch reporting and other monitoring requirements in place for toothfish, plus the interest of the legitimate industry in ensuring that the market is not corrupted, would assist in such an assessment.

7.7 Documentation

There are two main aspects to a discussion on documentation: first how the provisions of the CDS and CITES documents would apply to different stages of the toothfish trade and, second, the information contained in the permits themselves.

7.7.1 Comparison of CCAMLR and CITES documentation requirements

As shown in Table 3 the provisions of CCAMLR’s catch documentation scheme are similar to the provisions of CITES, requiring the presentation of valid documentation at all stages of import and export of toothfish product.

Table 3: Comparison of the application of CCAMLR’s Catch Documentation Scheme and CITES requirements under Appendix II

CATCH DOCUMENTATION SCHEME	CITES APPENDIX II
DOCUMENTATION REQUIREMENTS FOR THE CATCHING AND LANDING OF TOOTHFISH	
<i>Scenario 1: CCAMLR Convention Area – high seas</i>	
a) Taken by a vessel flagged to a CCAMLR Member	
<p>Vessel is authorised to fish by Flag State and required to complete DCD for catch landed or transhipped on each occasion. Flag State verifies that the vessel has fished in accordance with its authorisation.</p> <p>Members and co-operating non-contracting parties (CNCP) require all toothfish landed in their ports have a completed DCD. Certificate of Landing issued when port authority is satisfied that the details on the catch document agree with the actual catches landed. This includes verification that the catch has been taken in a manner consistent with CCAMLR conservation measures.</p>	<p>Introduction from the sea (IFS) requiring the prior granting of a certificate from the State of introduction.</p> <p>Scientific Authority must advise that the introduction will not be detrimental to the survival of the species (i.e. the non-detriment finding). No requirement to determine the legality of the catch.</p>
b) Taken by non-Member vessel	
<p>No requirement to complete DCD for catch landed or transhipped.</p> <ul style="list-style-type: none"> • Though catch can not be landed at a Member or CNCP port or transhipped to a Member or CNCP vessel without a DCD. 	<p>Introduction from the sea requirements would apply if catch is landed in a CITES Party.</p> <p>IFS requires the prior granting of a certificate from the state of introduction.</p> <p>Scientific Authority must advise that the introduction will not be detrimental to the survival of the species (i.e. the non-detriment finding). No requirement to determine the legality of the catch.</p>
<i>Scenario 2: CCAMLR Convention Area – waters under national jurisdiction</i>	
a) Caught and landed in the same jurisdiction	
<p>Implementation of CDS by Members within waters under their national jurisdiction.</p> <ul style="list-style-type: none"> • All such waters are under the jurisdiction of CCAMLR Members. <p>State’s domestic legislation regulates domestic fishing in a manner that is compatible with CCAMLR measures and implements the CDS requirements.</p>	<p>No documentation required as not IFS or importation.</p>

Scenario 2: CCAMLR Convention Area – waters under national jurisdiction

b) Landed in another CCAMLR Member or CNCP port

Port authority verifies that information on the DCD agrees with actual catch landing. Flag State validates legality of catch.

CDS applies to all CCAMLR Member vessels and CNCP.

All such waters are under the jurisdiction of CCAMLR Members & all are also CITES Parties.

Export permit from coastal State required based on findings that the catch is non-detrimental and legally taken.

c) Landed in a non-CCAMLR or non-CNCP port

No requirement to produce DCD prior to landing or verification of where catch taken.

- Boats authorised to fish in CCAMLR Member’s waters would usually be flagged to that Member and unlikely to be allowed to circumvent the CDS in this manner.

All such waters are under the jurisdiction of CCAMLR Members & all are also CITES Parties.

Export permit from coastal State required based on findings that the catch is non-detrimental and legally taken.

Scenario 3: Outside CCAMLR Convention Area – high seas

a) Landed in CCAMLR Member or CNCP port

Port authority verifies that information on the DCD agrees with actual catch landing. Flag State validates legality of catch.

CDS applies to all CCAMLR Member vessels and CNCP.

Introduction from the Sea requirements would apply if catch is landed in a CITES Party - all current CCAMLR Members are also Parties to CITES.

b) Landed in Non-CCAMLR Member or non-CNCP port

No DCD required.

Introduction from the Sea requirements would apply if catch is landed in a CITES Party.

Scenario 4: Outside CCAMLR Convention Area – waters under national jurisdiction

a) Caught and landed in the same jurisdiction

Voluntary implementation of CDS by Members with waters under their national jurisdiction.

State’s domestic legislation regulates domestic fishing in a manner that is compatible with CCAMLR measures.

No documentation required.

b) Landed in CCAMLR Member or CNCP port

Port authority verifies that information on the DCD agrees with actual catch landing. Flag State validates legality of catch.

CDS applies to all CCAMLR Member vessels and CNCP.

Export permit required following findings that the catch is non-detrimental and legally obtained.

c) Landed in Non-CCAMLR Member or CNCP port

No DCD required unless landing in a country that has voluntarily adopted the CDS.

Export permit required following findings that the catch is non-detrimental and legally obtained.

DOCUMENTATION REQUIREMENTS FOR THE EXPORT AND IMPORT OF TOOTHFISH

Scenario 5: Export or re-export of toothfish

a) Exported by a CCAMLR Member or CNCP

Each consignment must be accompanied by fully completed catch document. Export Government Validation Authority certifies that details in the form are complete and correct before authorising export.

Validated copy must accompany each consignment.

Export permit required following findings that the catch is non-detrimental and legally obtained.

b) Exported by a non-CCAMLR Member or non-CNCP

No DCD required, although can not be exported to a CCAMLR Member or CNCP without it.

Export permit required following findings that the catch is non-detrimental and legally obtained.

Scenario 6: Importation of toothfish

a) Imported by a CCAMLR Member or CNCP

Each consignment must be accompanied by fully completed catch document. Importer transmits copy to national CDS authority for examination by the national import authority.

Requires the prior presentation of either an export permit or a re-export permit.

b) Imported by a non-CCAMLR Member or non-CNCP

No DCD required.

Requires the prior presentation of either an export permit or a re-export permit if imported by a CITES Party.

7.7.2 Potential to use CDS forms for CITES purposes

A listing of Patagonian and Antarctic toothfish under CITES would bring with it the requirement for the use of a comprehensive system of permits and certificates. The basic principle of the CITES system is that, to the extent possible, there should be uniformity in the permits used by Parties so as to reduce the scope for fraudulent documents. The CDS also has a single recommended format, applicable across the four CCAMLR official languages – English, French, Russian and Spanish.

A further principle of CITES documents is that these should contain the maximum amount of information to assist a Party in verifying conformity between the actual specimens being traded and the accompanying document (Wijnstekers, 2001).

CITES Resolution Conf. 10.2(Rev) contains a list of the information that should be included on permits. To support a toothfish listing CITES documentation must assist a Party in making a non-detriment and legality finding on toothfish introduced to or exported from its jurisdiction.

As described under sub-section 4.2.2, CCAMLR has an existing documentation scheme for toothfish. It is practical, therefore, to consider whether the information required by CCAMLR's *Dissostichus* Catch Document would be sufficient to fulfil the requirements of CITES and, if not, what modifications might be required. Table 4 provides a comparison of the two forms of documentation.

Table 4: Comparison of information requirements of CITES permits and CCAMLR CDS documents

CITES Appendix II permits & certificates	CCAMLR CDS documentation equivalent
Convention Name	Identified as a Dissostichus Catch Document
Type of document (import, export, re-export, other)	(Export, import and re-export components of same form)
Management Authority name and address	Nominated National Authority (Flag State) name and address
Control number	Document number and Flag State Confirmation Number
Purpose of transaction	--
Appendix number and source	--
Name and address of importer and exporter	Name and address of recipient of catch Name and address of importer and exporter
Scientific name	(Form is specific to the two toothfish species)
Common name	Common name for each toothfish species
Source of specimens	Fishing vessel name, home port & registration number, call sign, IMO / Lloyd's Number Area where caught & dates of catch
Quantity and units of measurement	Estimated weight to be landed Verified weight landed Net weight sold Product type for all the above
Issue date and expiry date	(Flag State issues document in close to real-time with date on it)
Name of signatory and signature	Name, authority, address, signature and seal of Port Authority
Seal or stamp of Management Authority	Seal and signature of Export Government Authority
Country of origin (for re-export)	(Copy of original catch document accompanies all consignments)

The above comparison indicates that, while the way in which information appears varies between the two forms of documentation, the information provided is largely comparable in terms of the purpose it serves.

The CDS documentation amplifies the requirements relating to the 'source' of the toothfish as it is designed to track catches through trade and maintain the integrity of the CCAMLR conservation measures. The CITES permit structure is based on export and import of a species taken under a State's jurisdiction and so does not contemplate the situation that arises with introduction from the sea whereby domestic arrangements may be insufficient to make non-detriment and legality findings. The information required under the CDS in relation to the verification of catches would therefore be essential to support a listing of toothfish given that the majority of toothfish is introduced from the sea.

There are only a few information requirements relating to the specifics of a CITES listing that are not required by the CDS documents. If the CDS form was adopted as the CITES permit and certificates by the CoP presumably these could readily be included.

It should be noted that while there is an agreed content for permits and certificates issued under CITES, Parties are able to modify these, though should first request advice from the Secretariat (Resolution Conf. 10.2(Rev)). While some minor modifications may need to be made there would appear to be no substantial barrier to the Parties adopting the documents developed under the CDS for the purposes of toothfish. The more extensive information and verification requirements under CDS documentation could be argued as placing an additional burden on CITES' Parties. However, those countries that are substantially involved in the trade of toothfish at the moment are either already Members of CCAMLR, and so already applying the CDS, or not applying the CDS and thereby undermining the effectiveness of CCAMLR and the conservation status of toothfish.

7.8 Institutional arrangements

In considering options to address various implementation issues concerning an Appendix II listing of toothfish it is clear that the successful implementation of CITES provisions would rely on a close working relationship with CCAMLR. For example, the ability of a CITES Party to make a robust non-detriment finding for toothfish is

dependent on advice from the Scientific Committee of CCAMLR.

Further, close co-ordination between CITES and CCAMLR would be necessary to ensure that conservation efforts are and would continue to be complementary. The need for a close working relationship assumes particular importance in relation to fisheries, given their dynamic nature and the need to respond to changes in the behaviour of fleets.

Such institutional relationships between CITES and other relevant organisations have been established in the past. In regard to the International Whaling Commission (IWC), for example, the CITES CoP adopted Resolution 11.4, establishing the responsibilities of the two bodies whereby the IWC is responsible for the conservation and management of whales and CITES is responsible for issues relating to international trade. There is also a close relationship between CITES and the Vicuna Convention, where the Vicuna Convention is responsible for management of the vicuna species and CITES has adopted annotations that allow for trade based on recommendations of the Vicuna Convention, although is not bound by these.

8 CONCLUSION AND RECOMMENDATIONS

Despite the continuing efforts of CCAMLR to establish tight controls over fishing for toothfish the conservation status of the species continues to be undermined by IUU fishing activity. A listing of toothfish under Appendix II of CITES would complement the CCAMLR regime, including its objective of the rational use of toothfish resources, by addressing some of the current deficiencies in that regime.

First, CITES has well-established processes to encourage compliance by Parties with its provisions. Although the right of all States to freedom of fishing on the high seas has been qualified, particularly through the recent entry into force of UNFSA, CCAMLR remains largely powerless to prevent non-parties from fishing for toothfish in its Convention Area in a manner that undermines its conservation measures. A non-detriment finding under CITES on the basis that only catch landed from a vessel authorised to fish for toothfish under CCAMLR's conservation measures would be accepted could provide a powerful tool in preventing illegal and unregulated fishing from the CCAMLR Convention Area. Further, CCAMLR has limited ability to effectively censure countries that are not co-operating with its agreed conservation measures, including its Members and Acceding States as well as non-parties. CITES' compliance processes, including the ability to suspend a Party from trade in a listed species if they are found to be undermining the sustainability of that trade, may therefore potentially be a key benefit of a toothfish listing.

In addition to the greater potential under CITES for action to be taken against a Party that undermines the provisions of the Convention, a listing of toothfish would also result in more extensive application of conservation measures for the species, in particular, to high seas outside the CCAMLR Convention Area where there are currently no conservation and management measures for toothfish. This would occur in two ways. First the much broader membership of CITES would result in those Parties involved in toothfish trade that are not participating in CCAMLR's conservation measures to be subject to complementary measures under CITES. Second, the fact that CITES is not limited in its geographical coverage would assist in compliance and enforcement efforts relating to vessels claiming to have taken toothfish in areas outside CCAMLR's Convention Area, particularly in FAO Statistical Area 51.

The extent to which the effectiveness of a CITES listing would rely on supporting information from CCAMLR would necessitate a close complementary

working relationship between CITES Parties and CCAMLR to be established. Practical issues such as responsibilities for collection and collation of data relating to toothfish catch and trade would also need to be addressed.

Recommendation 1:

A formal agreement should be developed that establishes a complementary working relationship between CITES and CCAMLR.

In addition to the overarching implementation issue of the institutional relationship between CITES and CCAMLR, there are a number of more specific and technical areas that would need to be addressed.

Introduction from the Sea

Much of the waters in which toothfish occurs consist of high seas, and therefore would be subject to the provisions relating to introduction from the sea. Toothfish is also taken from the waters of coastal States however CITES Parties have not yet adopted an interpretation of the definition in the Convention of what constitutes 'waters under the jurisdiction of a state'. This then creates confusion over what would constitute toothfish introduced from the sea and what would constitute toothfish caught under the jurisdiction of a coastal State, with the potential for conflict between States and uncertainty for legitimate industry.

Recommendation 2:

CITES Parties should adopt a resolution that spells out the interpretation of introduction from the sea provisions of the CITES treaty. This should reflect the regime established under the law of the sea convention to determine waters that are under the jurisdiction of the State. This will enable consistent application of the provisions relating to introduction from the sea.

Resolution of the current uncertainties relating to introduction from the sea should be regarded as a prerequisite to a listing of toothfish in Appendix II.

Even with a consistent definition of what constitutes waters under the jurisdiction of a State there remains potential for confusion. This arises through the possibility that, on any one fishing trip, a vessel could take a listed species from both waters under national jurisdiction and high seas areas.

Recommendation 3:

CITES Parties should make a decision that all such 'split catch' be treated under the one set of provisions under CITES and seek to develop practical solutions in response to the various circumstances where this situation may arise.

Non-detriment findings

With the likelihood that the majority of toothfish would be introduced from the sea, a listing of toothfish in Appendix II of CITES will require clear procedures by which the State of introduction may make a non-detriment finding.

Recommendation 4:

The Conference of Parties should establish explicit links to CCAMLR and its Secretariat that enable Parties to make non-detriment findings. This should be spelled out either by resolution or annotation to an Appendix II listing.

For toothfish fisheries within waters under the jurisdiction of a State, the relevant coastal State would be responsible for non-detriment findings in the granting of an export permit on the basis of their national management measures.

The major factor undermining the conservation status of toothfish under the CCAMLR management regime is the continuing illegal, unreported and unregulated fishing activity through which catches are taken in excess of the total allowable catch levels established by that Commission. As IUU fishing, by its nature, operates outside of agreed conservation measures for toothfish it is inherently detrimental to the long-term sustainability of the two species.

Recommendation 5:

CITES Parties should not make a non-detriment finding in relation to toothfish taken by IUU fishing. This should include a resolution by the CITES Conference of Parties to only allow the introduction of catch to their ports by vessels authorised by CCAMLR to fish in the Convention Area.

CCAMLR's Scientific Committee, supported by its Working Group on Fish Stock Assessments, annually undertakes a comprehensive review of scientific information on both species of toothfish, including their role in the relevant ecosystem. The results of this review are then translated into total allowable catches, adopted by the Commission. Given that over 90 per cent of toothfish is traded, these total allowable catches would correlate closely with a non-detriment finding under CITES as to whether the level of trade is sustainable.

Recommendation 6:

Non-detriment findings for Patagonian and Antarctic toothfish introduced from the sea from the CCAMLR Convention Area should be made with reference to the status of CCAMLR's total allowable catch for the relevant sub-area.

At present, CCAMLR's Scientific Committee recommends total allowable catches that are implicit to each of Patagonian and Antarctic toothfish. To enable non-detriment findings to be made for both Patagonian and Antarctic toothfish, information will be required on each species.

Recommendation 7:

CCAMLR should establish explicit total allowable catches for each toothfish species.

In relation to catches claimed as having been taken on the high seas outside the CCAMLR Convention Area two issues were identified. First, there is evidence that substantial catches taken within the Convention Area, including from the waters of coastal States, are being misreported as having been taken outside the Area. Second, there is currently no regulatory regime or control over catches of toothfish that are genuinely taken on the high seas outside the Convention Area.

Recommendation 8:

A nil quota (no trade) be set for high seas areas outside the CCAMLR Convention Area until such time as a basis for a non-detriment finding for catches taken from those areas is established.

Establishment of a nil quota in this area should be contingent on the adoption by CITES Parties of a requirement to verify where catches of toothfish had been taken in order to avoid the potential for IUU catch to be legitimised and traded under CITES provisions.

Documentation requirements

The CITES permit and certificate requirements under an Appendix II listing are relatively similar to those required under the CCAMLR CDS. It would seem unnecessarily burdensome for industry and countries to apply a second set of permits and paperwork to essentially the same activity.

Recommendation 9:

The CITES Conference of Parties should adopt, *mutatis mutandis*, the CCAMLR Dissostichus Catch Documents for the purposes of CITES permit and certificate provisions under an Appendix II listing.

In addition to reducing duplication between the CITES and CCAMLR documentation, there are a number of other reasons for adopting the CDS for the purposes of an Appendix II listing of toothfish relating to non-detriment findings.

CITES provisions for introduction from the sea do not require a finding to be made as to the legality of the catch at the time of introduction. If it is accepted that IUU fishing is inherently detrimental to the long-term sustainability of toothfish, it is necessary for a CITES Party to identify what is IUU catch. Further, non-detriment findings based on sub-area TACs will require CITES Parties to establish where catch was taken.

Recommendation 10:

As part of the adoption of the CDS, CITES Parties should require verification of where catches have been taken prior to issuing a certificate of introduction.

If the Conference of the Parties does not adopt the CDS for the purposes of monitoring toothfish under CITES, an alternative process to allow all catches to be counted against sustainable catch limits and to determine that catches have not been taken in the course of IUU fishing will be required.

Listing of 'look a-like' species

The issue of 'look a-likes' species is an important consideration in a listing of toothfish. Patagonian toothfish and Antarctic toothfish are visually similar as whole fish and indistinguishable from each other in processed form. If Antarctic toothfish was not listed in Appendix II in its own right it would be necessary to list it as a 'look a-like' species if Patagonian toothfish was listed, and vice versa.

Recommendation 11:

If one or other of Patagonian toothfish or Antarctic toothfish was listed in Appendix II, the other toothfish species should be listed as a 'look a-like' species.

Although the flesh of toothfish is quite distinctive, in a highly processed form it may be difficult to visually distinguish from some other fish species. This raises the spectre of the listing of numerous other fish species taken throughout the world. However the potential impact on the effective control of toothfish trade by the non-regulation of trade in other fish species is unknown.

Recommendation 12:

Consideration of listing 'look a-like' species should be deferred until there is information available on the level of risk of toothfish being laundered as other fish species. A monitoring programme should be developed to assess the extent to which laundering may be occurring.

There is nothing intrinsic in either the information requirements or general operation of CITES' permitting provisions that would provide a greater level of information or control over trade in toothfish - indeed findings under CITES relating to biological non-detriment and legality of toothfish catch would largely rely on information from CCAMLR. However, depending on the manner of implementation, an Appendix II listing could provide significant by assisting CCAMLR in the effective regulation of international trade in toothfish species and thereby stemming the incidence of IUU fishing for the species.



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The TRAFFIC Network's international headquarters is co-located in the United Kingdom with the UNEP World Conservation Monitoring Centre.

For further information contact:

Senior Fisheries Advisor
TRAFFIC Oceania
GPO Box 528, Sydney
NSW 2001 Australia
Tel: (61-2) 9280-1671
Fax: (61-2) 9212-1794
E-mail: awillock@traffico.org

The Executive Director
TRAFFIC International
219c Huntingdon Rd
Cambridge, CB3 0DL, UK
Tel: (44) 1223 277427
Fax: (44) 1223 277237
Email: traffic@traffint.org