

**EXPLANATORY MEMORANDUM TO
THE TOPE (PROHIBITION OF FISHING) ORDER 2008**

2008 No. 691

1. This explanatory memorandum has been prepared by Defra and is laid before parliament by Command of Her Majesty.

This memorandum contains information for the Joint Committee on Statutory Instruments.

2. **Description**

- 2.1 This Statutory Instrument will prohibit the development of a directed fishery for tope. Tope are a vulnerable North East Atlantic and coastal shark species with a high conservation and recreational sport fishing value but low commercial value. The instrument recognises that commercial fishermen will unintentionally catch small quantities of tope when fishing for other species and specifies that they are allowed to retain and land only 45 kg per day. Recreational rod and line fishing for tope will be allowed, but tope catches taken by rod and line may not be landed to shore from boats. It is not the intention to prevent the swift unhooking and uninjured release of rod and line caught tope (catch and release).

3. **Matters of special interest to the Joint Committee on Statutory Instruments**

- 3.1 None.

4. **Legislative Background**

- 4.1 The Order is made to conserve tope stocks and prevent the development of a “directed” tope fishery in English waters. In Hansard on the 26th of July 2007 (COL WA119) Lord Rooker said that as a result of commercial interest in the species Defra were considering conservation measures. Under Article 10 of the Common Fisheries Policy Member States may take measures for the conservation and management of stocks in waters under their sovereignty. But the measures may only apply to fishing vessels flying the flag of the Member State concerned, and must be no less stringent than existing Community legislation. The Marine and Fisheries Agency will be the enforcement authority.

5. **Territorial Extent and Application**

- 5.1 This instrument applies to British Fishery Limits (BFL) and all UK vessels fishing in the English zone (it excludes the Scottish and Northern Ireland zones and the territorial seas adjacent to Wales, the Isle of Man, Jersey and Guernsey). The Statutory Instrument does not apply to commercial fishing vessels registered in other European Community Member States. There are no similar Orders in place in other parts of the United Kingdom but the Welsh Assembly Government carried out a parallel consultation and will consider their own measures in due course.

6. **European Convention on Human Rights**

- 6.1 As the instrument is subject to negative resolution procedure and does not amend primary legislation, no statement is required.

7. Policy background

7.1 The Sea Fish (Conservation) Act 1967 provides powers to Ministers to protect fish stocks from overexploitation. Tope populations exist in many oceans of the world, they are listed as “vulnerable” by the World Conservation Union (IUCN) because wherever directed fisheries have taken place their populations have seriously declined. Defra is taking pre-emptive measures after it received reports that a commercial fishery to target tope in English waters was under consideration. Although it did not materialise there remains a significant risk that tope fisheries could be developed in the future with little warning and very low set-up costs. Such a fishery could rapidly endanger the sustainability of tope populations. Tope are also known as the “soup fin” shark and might be targeted for their fins as well as their meat. Tope can live for more than 50 years but do not mature until the age of 12. Even then they produce a relatively low number of pups compared with other marine species, typically 20 every two to three years. This life-cycle makes their populations very susceptible to fishing pressure.

7.2 There will be considerable public interest in this measure from the Recreational Sea Angling Sector in terms of Defra’s development of a Recreational Sea Angling Strategy. But although there are potential benefits for the sea angling sector it is primarily a conservation measure and will also be of interest to shark conservation minded individuals and organisations.

7.3 In 2006 Defra consulted on proposals to prohibit directed tope fisheries. The bulk of responses were from the Recreational Sea Angling Sector and shark conservation organisations 92% of which supported the prohibition of a directed fishery other than by rod and line. The commercial sector pointed out that some tope are inevitably killed when fishing for other species. There is no conservation value in discarding these dead tope and after analysis of the available fisheries data the 45 kg by-catch provision has been adopted as a realistic level.

8. Impact

8.1 An Impact Assessment is attached to this memorandum.

8.2 There are few implications for the majority of commercial fishermen who are not subject to any new administrative burdens as a result of this measure.

8.3 In 2006 Defra consulted with the then Department of Trade and Industry on the landing and transshipment provisions as required by the Sea Fish (Conservation) Act 1967. The DTI confirmed they had no interest in this measure.

9. Contact

Georgina Karlsson at the Department for Environment, Food and Rural Affairs (Defra)
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Summary: Intervention & Options

Department /Agency: Department for Environment Food and Rural Affairs	Title: Impact Assessment of Tope shark protection measures (Galeorhinus galeus)	
Stage: Submission for SI	Version: #1	Date: 20th February 2008
Related Publications: Summary of Consultation responses		

Available to view or download at:

<http://www.>

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Tope are a vulnerable species. Despite this there are few controls on the quantities that may be landed or how they may be fished in the EU or England and Wales. However the inherent lack of culinary value and low prices could be overcome by targeted fisheries landing higher volumes for export, or by exploiting the market for shark fins. CEFAS advice is that targeted fisheries in E&W waters would be unsustainable and affect the population as a whole. Directed fisheries have taken place in English waters and still do elsewhere e.g. the Channel islands.

The objective is the protection of tope. This will be achieved by stopping targeted commercial fisheries for tope. A small by-catch may be landed to minimise wastage of dead tope taken by commercial vessels when fishing for other species. Continued recreational angling benefits will be preserved as fishing for tope will be allowed with rod and line but the catches may not be landed ashore. Recreational and commercial fishermen will thereby share responsibility for tope conservation.

What policy options have been considered? Please justify any preferred option.

(1) No intervention: this represents a significant risk that tope might be targeted by commercial interests for their meat and fins which would adversely affect its population status.

(2) Proposed Option: allow fishing for tope by rod and line but prevent unsustainable exploitation. This option will prohibit the landing of rod and line caught tope and prohibit all other fishing for tope whilst allowing a 45 kg per day by-catch in commercial fisheries for other species. This is the preferred option.

We will review the policy in 2010 to consider the effects of the catch and release and by-catch provisions; and whether additional measures are required to achieve further conservation benefits.

Jonathan Shaw

5th March 2008

Summary: Analysis & Evidence

Policy Option: (2)	Description: A conservation package to prevent the unsustainable exploitation of tope
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COSTS	ANNUAL COSTS	Description and scale of key monetised costs by 'main affected groups' Based on historical data derived from the Marine and Fisheries Agency Fisheries Activity Database landings of approximately £5,490 per annum would be prohibited in the future. Annual enforcement costs are an estimated £1,800. This has been discounted over a period of 2008-2010, when the policy will be subject to review.
	One-off (Transition) Yrs	
	£ Nil 0	
	Average Annual Cost (excluding one-off)	
£ 7,290	Total Cost (PV) £ 21,139	

Other **key non-monetised costs** by 'main affected groups' None, there are no additional recording or reporting requirements or paperwork. Fishermen and merchants are already required to separately record and report all retained and landed species. Anglers already release tope alive so there will be minimal additional cost to them in purchasing

BENEFITS	ANNUAL BENEFITS	Description and scale of key monetised benefits by 'main affected groups' Recreational anglers reported an average spend on tope fishing of up to £2,600 per annum. The recreational sector places a high value on the conservation of tope. The Consultation summary (attached) describes the "spend" by the different recreational sectors in detail.
	One-off Yrs	
	£ N/A	
	Average Annual Benefit (excluding one-off)	
£ N/A	Total Benefit (PV) £	

Other **key non-monetised benefits** by 'main affected groups'

If the intended conservation and sustainability benefits accrue then potentially a variety of use and non-use values appear: including healthy recreational fisheries, the possibility of limited harvesting in the future, and "bequest" or "existence" valuations



Price Base Year	Time Period Years	Net Benefit Range (NPV) £	NET BENEFIT (NPV Best estimate) £
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	English Fishery
	April 6 th 2008
	MFA and SFCs
What is the total annual cost of enforcement for these organisations?	£ 1,800
	Yes
	Yes
What is the value of the proposed offsetting measure per year?	£ N/A
What is the value of changes in greenhouse gas emissions?	£ N/A
	No

Annual cost (£-£) per organisation (excluding one-off)	Micro N/A	Small N/A	Medium N/A	Large N/A
	No	No		
Nil	Nil		Nil	

Key:

Annual costs and benefits: Constant Prices

(Net) Present Value

Evidence Base (for summary sheets)

[Use this space (with a recommended maximum of 30 pages) to set out the evidence, analysis and detailed narrative from which you have generated your policy options or proposal. Ensure that the information is organised in such a way as to explain clearly the summary information on the preceding pages of this form.]

NB: All landings and valuation data in this evidence comes from the Marine and Fisheries Agency's Fishery Activity Database (FAD). This is the primary source of data for all English and Welsh fishery statistics. The data period analysed is 2004 to 2006.

Key Assumption: All calculations are made on the assumption that these officially recorded commercial landings are, with caveats, broadly accurate, and can be used to draw some conclusions which are useful for future management.

Calculation of costs of discarding tope

1. The annual value of tope discards under the preferred option is estimated to be £5,490. To arrive at this figure of the hypothetical future value of discards, all landings of tope in 2004 to 2006 were retrieved from the Marine and Fisheries Agency database. Several scenarios were then constructed based on different by-catch levels. After choosing 45 kg as a by-catch limit all tope landings above 45kg per day were selected on the basis that there would have been discarding. This data subset was then examined carefully for accuracy and where there were clearly errors in species identification the landings from those vessels were removed. In addition any targeted fisheries were removed as these will not be permitted under the new regime. The landings of several other vessels were also removed because they have either left the fishery where they were catching high quantities of tope or are now prohibited by Sea Fisheries Committee byelaw from taking tope in their district. This reduced the hypothetical discards over the three years from £26,433 to £16,470 as shown in Table 1. The table only includes landings where tope were a component of the catch. A more detailed analysis is at Annex A. The figure of £16, 470 has been divided equally over the three year period to provide an estimated yearly average value of £5,490 as a hypothetical value of discarded tope.

	Total value of all species landings (2004-2006)	Total value of hypothetical tope discard (2004-2006)
Value of all landed species in landings where > 45kg/day tope component	£1,150,736	£26,433
With vessels	£889,581	£16,470

removed

Table 1 Hypothetical discards of tope 2004-2006

What is the problem under consideration? Why is government intervention necessary?

2. According to the World Conservation Union tope are a vulnerable species. Despite this there are few controls on the quantities that may be landed or how they may be fished for in the European Union or in England and Wales. Tope are a low-value catch usually taken by commercial fishing vessels in small quantities when fishing for other species, in other words they are what is known as a “by-catch”. Average prices for tope sold in the UK are between 50 and 60 pence per kg. An inherent lack of culinary value and consequent low prices could be overcome by targeted fisheries catching higher volumes in areas where they are known to congregate, particularly if the fishery exploits the very high value of the fins as well as the meat; and/or turns to export rather than domestic markets. For instance there is a targeted fishery in Channel Island waters. Tope landed in quantity into France from Guernsey waters fetch higher prices at £2-50 per kg (38 tonnes/£95,000 in 2005). Defra’s scientific advice from The Centre for Environment, Fisheries and Aquaculture Science (CEFAS) is that targeted fisheries in English and Welsh waters would be unsustainable and would adversely affect the population as a whole. Like many sharks, they are a species whose conservation status is important to specific groups such as anglers and shark conservation organisations and more widely to society as a whole. Recreational sea anglers for instance regard them as a prized sport fish for their fighting qualities, their size and the fact that specific techniques are required to catch them. To an angler the value of a live tope is far higher than its value as meat which is why they generally release them alive.

How does the preferred option solve the problem?

3. The problem is how to provide protection for the stock, but at the same time allow both commercial and recreational activities that as far as possible will not further threaten its status and may in the future lead to recovery of the populations. In this respect a contributory complicating factor that came out of the consultation process is the “by-catch” of tope taken by legitimate commercial vessels. This by-catch of tope often dies in the fishing gear before it is recovered and brought to the side of the fishing vessel. Clearly prohibiting the landing of all such by-catches would mean the dead tope would have to be “discarded” at sea. Such a measure would deprive commercial fishermen of whatever small contribution to earnings they make without making any meaningful contribution to conservation. This is the principal reason for the Governments preferred option, which will allow this by-catch to be landed. It is also a recognised technique in sport fisheries management to prohibit the landing of certain species to retain the recreational value of healthy populations. Although most anglers responded that they practiced catch and release this response was not universal. This is why we are to prohibit landing of rod and line caught tope.

What are the policy objectives and intended effects?

4. The policy objective is the conservation of tope stocks. Responsibility for conservation will be shared by Recreational Sea Anglers (RSA) and the Commercial Fishing Sector. The effects of the policy will be reviewed in 2010.

There are a number of additional consequences if this policy is successful:

- Conservation of tope;
- recreational sea anglers continue their sport with a reasonable expectation of successfully catching and releasing tope;
- tope ecosystem predator-prey interactions are maintained;
- the non-use, “Existence” and “Bequest” value is maintained.

These are economic values attached to an environmental or natural resource that is not based on the tangible human use of the resource. E.g. Existence value, some individuals may value the existence of tope in our waters regardless of whether they choose to fish for tope or consume the species, they may also value the existence of tope in that it is available to be bequeathed to future generations.

- in the future if as a result of successful conservation measures tope stocks are deemed to be capable of sustaining a harvest, there is the potential for directed fisheries to be re-opened and managed, or for by-catch levels to be adjusted.

The Options in the Consultation

Option 1, to do nothing. This would have no additional costs for either the commercial or recreational sector but there continues to be a significant risk of a targeted fishery arising and the corresponding costs in terms of damage to species conservation.

Option 2, to ban all fishing for tope other than by Rod and Line. This would financially affect the Commercial sector alone, although we believe only to a limited extent as there is currently no targeted commercial tope fishery and tope are not the main source of income for any fishing enterprise.

Option 3, to ban all fishing for tope. This would financially affect both the English commercial and recreational fishing sectors

A modified Option 2 is Defra's preferred option: That is to ban all fishing for tope other than by rod and line, to ban the landing of tope caught by rod and line, and to allow 45 kg by-catch level for tope taken in commercial fisheries.

NB: The definition of "landing":

The ban on the "landing" of tope is in the commercial rather than the recreational sense.

For a commercial fishing vessel "landing" means putting the captured and retained fish from the boat onto the land for marketing. To an angler whether he is in a boat or on a river bank "landing" means rendered into his possession i.e. pulled up on to the bank, and brought into or to the side of the boat, regardless of the intention to release the fish or take it home for food. In discussions with angling representatives it has been agreed that they will develop a voluntary angling Code of Practice on the best techniques of releasing tope to ensure the maximum probability of survival.

Costs and Benefits of preferred option compared to the original options.

5. Option 1 provides no protection for the stock and it will remain vulnerable to all fishing activities. There is a small but significant risk that tope might be targeted in some areas by commercial fishermen. The impact of that would affect the conservation status of the whole stock and would detrimentally affect local recreational fishing opportunities. The consultation also revealed that although the bulk of anglers practice catch and release there is also a small risk that anglers will kill fish to take home for the "pot" or as "trophies".

Option 2 as it stood proved unworkable as there is no easy definition of "fishing for" when referring to commercial fishing gear without defining a quantity. In these circumstances it is common fisheries management practice to define percentages or quantities. On the other hand anglers do effectively "fish for" tope as a target species. In the consultation responses some spoke of catching up to 25 per trip on good days. By adopting a modified option 2 we prevent the targeting of the stock by commercial vessels, we allow them to keep the existing small contribution a by-catch of tope makes to earnings, and we allow anglers to pursue a valuable recreational activity but through a landing prohibition with minimum impact on the stocks.

Option 3 suffers from the same defects as Option 2 in relation to commercial fisheries but extends it to recreational fisheries. There is a substantial charter vessel activity, instructional material, hobby magazines, and equipment manufacturing which rely on "fishing for tope". One consultation response from the UK shark tagging programme mentioned that 100 vessels had contributed tope data and estimated the socio-economic value of this activity as £2 million per

year. Since recreational fisheries almost by definition only catch live fish, and because tope are robust, they can be released with a high chance of survival. The prohibition on the landing of rod and line caught tope means tope can be released alive to breed and may be caught again. Making this compulsory combined with the prohibition of a targeted commercial fishery, offers this protection to the stock while involving the minimum interference necessary in existing activities.

Conservation and commercial tope fisheries: background

6. In 2004 a commercial fishing interest indicated their intention to target tope for meat and fins. Our scientific advice from the Centre for Environment, Fisheries and Aquaculture Science (CEFAS) is that tope fisheries have a history of over-exploitation and that any directed fishery would have to be managed very conservatively if they were to be sustainable.

The shark species “Tope” (Latin name, *Galeorhinus galeus*) are distributed throughout the North East Atlantic and although mainly a coastal and continental shelf shark they are also known to migrate long distances for instance to Irish waters, The Azores and The Canaries. Tope have a worldwide distribution and stocks exist in the South Atlantic, the Mediterranean and the Pacific. NE Atlantic tope stocks are included in the Vulnerable category in the IUCN red list of threatened species. All sharks, skates and rays (elasmobranchs) are vulnerable to capture by a wide range of fishing gears. They are targeted by hook and line fisheries and occasionally by gill nets. Their lack of a swim bladder and general hardiness means that they have a high chance of survival after being caught on hook and line as long as they are handled correctly. Survival after capture by other gears is uncertain, but they are thought to drown in gill nets if they are trapped in them for any time. An important component of any elasmobranch conservation policy is how they are handled if they are going to be released and survive.

Enforcement and other costs to Government

7. As this is a unilateral measure it does not apply to: Other EU Member States (OMS) vessels, in devolved administration waters, or in the Crown Dependencies. Member States who have access to fish for “demersal” species in the English 6 to 12 mile limit can continue to do so under the Common Fisheries Policy.

Within the English 6 mile limit some Sea Fisheries Committees (SFCs) have already made byelaws that are stricter than the proposed Statutory Instrument. Other SFCs have considered tope protection byelaws but have held off, pending the outcome of our national initiative. Once our SI is in place SFCs will be at liberty to put stricter measures in place if they see fit. Or they may rescind their current bye-laws if they are happy to enforce the SI. Enforcement will be achieved within existing budgets and procedures through a joint agency approach between the Marine and Fisheries Agency and local Sea Fisheries Committees. Enforcement will be a concurrent activity in other routine inspection duties on vessels, at landing sites and in market premises. Taking steps at the National level could reduce the administrative burden of introducing local measures in those SFCs that haven’t already introduced measures. On the assumption that the Marine and Fisheries Agency will spend approximately 40 man hours per year in enforcing this measure the enforcement costs will be £1,800.

Smaller tope are often mistaken for smoothhounds, the distinguishing characteristics are the teeth and fin pattern. We will therefore require all tope to be landed with their head and fins on. If we suspect that tope have been beheaded and finned, DNA tests are available to settle the question.

Administrative burdens

8. Commercial fishing vessels over ten metres in overall length are required to keep logbooks of their catches, and provide landing declarations broken down by species and quantity. This measure has no impact on these existing documentary requirements. There may be a small impact in that fishermen and merchants will have to clearly distinguish between tope and other sharks in their logbooks and sales receipts but they should in theory be doing this already. Under ten metre vessels do not have to keep logbooks. Tope are not a quota species, have no

size limits and are not subject to closed seasons or areas. Some Sea Fisheries Committees already have bye-laws that prohibit the landing of tope.

Economic Justification for the by-catch provision in modified Option 2

9. Table 2 indicates the proportion of tope in landings into major ports in England and Wales. Tope forms on average only .08% by landed weight and 0.34% by value. Under the hypothetical discard scenario the data shows that most of the by-catch could still be landed.

	All species	Tope¹	Annual average Discarded tope under a hypothetical 45 kg by-catch scenario²
Annual Average Landings (tonnes)	110,154,³	85	11
Average Annual value (£1,000's)	£137,679,000³	£47,000	£5,490

Table 2 Average annual fish landings into major ports in England and Wales compared to tope (2004-2006)

¹ Tope figures are likely to be overestimates because they include other species misidentified as tope.

² Between 10% and 20% of the unadjusted hypothetical tope discards figures are from directed fisheries we would wish to prevent or are high by-catches in longline fisheries.

³ Source UK Sea fisheries statistics 2004 – 2006

10. Tope is caught as a by-catch in trawl, gill net and longline fisheries and has often been discarded because of its low market value. Landings data indicates that 254 tonnes of by-catch was landed over the three years 2004 to 2006, with a first sale value of £140,462 (See Table 3 for a breakdown of the data. The bulk of this revenue is from many small landings of by-catch. If all this revenue were lost it would be unlikely to be significant for the commercial fishing sector as a whole, but because tope are a by-catch and because the objective is only to prevent the development of a directed fishery a modified version of Option 2 has been adopted. This allows the bulk of the commercial by-catch to be landed. It is nevertheless recognised that the measure may cause the discarding of tope by a small number of individual commercial fishermen who take high by-catches of tope at certain times of the year, regardless of whether these tope are alive or dead at the time. This would affect about 3 or 4 vessels out of 3,742 in the England & Wales administered fleet.

Table 3: Total Commercial tope Landings by statistical group 2004 to 2006 (England and Wales)

NB: Only landings where tope was a component of the catch

Statistical Group	Number of Days fished	Total tope catch Metric tonnes	Total tope value (at an average price of £553/tonne)
Named <10	1,244	22.64	£12,520
(< 10 metre grouped data) ¹	12,079	38.15 (2.3% of total)	£21, 096
>= 10 metres	10,169	193.46	£107,061
All vessels ²	23,408	254 tonnes (2.8% of landings)	£140,462

¹ Vessel Overall Length = 0 signifies grouped data

² The total landings are an overestimate due to the misidentification of smoothhound as tope

Costs of modified Option 2 to commercial fishing vessels (England and Wales Tope Landings 2004 to 2006)

11. The core discussions and tables in this Impact Assessment refer only to trips where tope were a recorded component of the landed catch. There are problems with the reliability of the tope landings dataset; it is likely to overestimate landings of tope because smoothhound have been entered into the database as tope. We are to impose a by-catch limit of 45 kg liveweight per day. The costs to industry will be as a result of discarding tope above this limit, or in the equipment they might use in the practice of live release (replacement hooks and lines, disgorging devices etc). Very few vessels will incur regular or significant costs as a result of this regulation. There are two categories of historical landings which this regulation would have affected, targeted tope fisheries (6 vessels), and fisheries where there has been a genuinely high by-catch (2 vessels). One category of landing will not be affected: and that is fisheries where there is an apparently high by-catch of tope which is in fact smoothhound (up to 20 vessels).

Why set the by-catch limit at 45 kg and not in terms of numbers of tope?

12. Data from the UK Shark Tagging Programme (www.ukshark.co.uk) indicates that 85% of tagged and released tope (2,138) were between and 18.1 kg and 6.8 kg. A 45 kg per day by-catch limit therefore relates to between about 3 and 7 tope per day. Because tope above about 18 kg are nearly always female a set number of tope per day was not appropriate as a by-catch level, since it would provide an incentive to preferentially retain large females. Whereas it is the intention that commercial vessels will reserve their by-catch limit for tope that come to the side of the vessel dead. This “live-release” is not enforceable, however our analysis produces figures roughly in line with industry advice on the levels of dead by-catch. Industry observed that there are no conservation benefits in discarding dead tope. See Figures 1 & 2 and the discussion in Annex A for a detailed breakdown of the potential discard rates.

Risks in management of the commercial and recreational sector

13. There is a compliance risk in the temptation to land the larger catches of tope illegally. This will be mitigated by routine enforcement work. A key conservation risk is that tope populations decline either because of targeted fisheries by Other Member States or high by-catch mortality in other fisheries. As such this measure is only a contribution to the conservation of the species. In the wider context the European Commission intend to adopt a communication on a European Shark Plan of Action by December 2008. There is considered to be a small risk that some anglers will be tempted to land tope. Again this will be mitigated by routine enforcement work. A bigger risk is that they are handled in such a way that their survival on return to the sea is threatened. As we are unable to enforce a live release policy it will be up to anglers to develop the necessary techniques to mitigate the risk of damage to the tope they release. To that end techniques of live release are likely to become a policy means of achieving conservation objectives in the management of shark fisheries.

Competition Assessment for Commercial fisheries

14. There will be very limited impact in terms of participation in current directed tope fisheries as there are very few examples where UK vessels compete with OMS vessels for access to this resource except in Guernsey waters which will be excluded from the scope of the legislation. The benefits of the English contribution to tope conservation could accrue to those countries who continue to allow targeted commercial fisheries and unlimited by-catches in the same waters. Commercial English fishing vessels could not participate in any new fisheries that might develop as a result of conservation efforts or otherwise as a result of changing opportunities.

15. Because this is a unilateral measure there is a marginal competition impact on English administered commercial vessels due to the discarding of small quantities of low value tope. Other Member States can continue to land all the tope they catch. A 45 kg per day by-catch limit will be allowed for commercial landings to account for tope that may be dead when they are brought aboard the fishing vessel. This figure has been chosen after analysis of three years of landings data and has been set as low as possible to allow dead tope to be landed but discourage any level of directed fishery emerging.

16. Although there are few recent records of directed commercial fisheries for tope in English waters, they have occurred for instance off the North Cornish Coast. Most years there are directed fisheries for tope in the Channel Islands. There are also long-line fisheries with significant by-catches in French waters. Prices for tope meat are comparatively low ranging from £0.50 pence to £3-00 per kilo. Lower prices are generally achieved by small unexpected by-catches landed in the UK whilst the higher prices are achieved by larger landings sold in France where there is an established market for their meat. Tope are also known as the "soupfin" shark because of the Asian trade in shark-fins. The fins from similar species are imported into the UK for consumption by the Chinese community and fetch the astonishing figure of £165-00 per kg.

They are not valued for their meat in the UK and at least one prominent West Country food writer has commented on its poor eating qualities. Current prices for fins could stimulate the development of an English fishery if sufficient quantities could be landed. Vessels fishing for other species often take a by-catch of dead tope. In order to prevent wasteful discarding these vessels will be allowed to land up to 45 kg per day (liveweight). This figure is based on an analysis of landings and scientific data. At this by-catch level there is little prospect of a directed commercial fishery. We would encourage commercial fishermen to reserve this by-catch for tope that come to the side of the fishing vessel dead, whilst releasing those that stand a better chance of survival. Occasionally small sharks are used as pot bait in shellfish traps and tope may from time to time be sold for this purpose.

Conservation: effects on Commercial fishing

17. A detailed analysis of the costs to commercial vessels was carried out and is explained in Annex A. The analysis looked at different by-catch scenarios and contributed to the choice of 45kg as a daily by-catch limit.

Landings data for tope shows that the bulk of by-catches occur in longline and gill net fisheries targeting other species. There is some confusion in the nominal landings data with species either being misidentified or recorded as generic “shark”.

We would encourage the 45kg by-catch to be used for tope that comes to the side of the vessel dead or moribund. Directed gill net fisheries for tope are required to use a 220mm or greater mesh size. Anecdotal evidence suggests that compared to longlines, a higher proportion of tope are brought to the side of the fishing vessel dead when captured in gill nets. Longlining vessels have the greatest potential for practicing live release of tope but the techniques for doing so need development. We would encourage the commercial sector to explore techniques such as: not pulling tope through stripper bars and cutting the tope free as quickly as possible. Off North Devon there is a Sea Fisheries Committee initiative to broker an understanding between the recreational and commercial sector as to how both might practice their own brand of catch and release.

Some of the techniques could have wider application for other large bodied sharks found in UK waters such as blues, porbeagles and threshers.

RECREATIONAL SEA ANGLING

Small Firms Impact Test: Recreational Sea Angling

18. There is a significant Recreational Sea Angling economy (RSA) already partly dependent on tope fishing. In response to the consultation the RSA sector provided sample data on their historical “spend” on tope angling, and many businesses responded with actual figures. These figures are discussed in the Consultation Summary of responses (attached). In those terms there is a “live” value to tope which directly or indirectly sustains both private individual’s enjoyment of the sport and contributes to earnings in many small and medium sized businesses. These benefits to the sport fishing sector are difficult to rigorously quantify in terms that are comparable to the first sale value of commercial landings. Some of the value comes with the “expectation” of successful captures.

19. Given that we propose to prevent the development of a directed commercial fishery that has not yet materialised there will be very little change over the current status quo. Commercial vessels will continue to land and sell their small by-catches and anglers will target the species for sport but release them alive. It is clear however that directed commercial fisheries will now be prevented which could otherwise have taken place in direct competition to RSA in certain areas and the “expectation” value would be preserved. The angling sector’s contribution to that “live” value for the future will be to operate an effective catch and release code of practice. The overall policy will be reviewed for effectiveness in 2010.

20. There is highly unlikely to be a significant competition impact on the Recreational Sea Angling Sector and in fact if the measure has the desired conservation benefits it may help preserve or promote it in particular areas. There is competition for access to fisheries resources between the recreational and commercial sector which will no doubt be seized on by some.

21. There are an increasing number of marina based boats, trailered boats and kayaks used for recreational fishing. Based on anecdotal evidence, since the mid-80’s there has been an annual market in England and Wales of approximately 3,000 sales per year of boats built for day-angling. Previous estimates of around 750 privately owned vessels are now a serious underestimate of the likely figures.

22. A typical price to buy and kit out a kayak would be £1,200+, a small boat and trailer between £5,000 and £20,000, and a charter boat capable of taking 8 to 10 anglers is going to cost up to £100,000.

23. In addition there is a thriving charter fishing industry that takes parties of paying anglers. Some of these businesses specialise in tope fishing at certain times of the year, and for others the expectation of catching tope is an important selling point. The total number of charter fishing vessels is thought to be at least 375 according to the Drew Report ¹. According to this report in 2002 around 2 million people went sea angling at least once.

Conservation: effects of policy on Recreational Sea Angling (RSA)

24. By allowing fishing for tope by rod and line the policy recognises that tope are a prized target species of anglers. The National Federation of Sea Anglers will be developing a catch and release code of practice which combined with the prohibition on landing of rod and line caught tope should ensure that anglers make the maximum contribution to the conservation of the species. An effective catch and release policy will allow a variety of activities such as tagging, photography, and measurement whilst enhancing the chances of survival of the majority of tope.

25. At its simplest catch and release means cutting the line without taking the fish out of the water. More sophisticated techniques are developed where other objectives are to be met. These may be in order to collect biological data or attach tags. Specialised equipment may be needed for these applications. In routine angling usually a photograph is what is desired and a large landing net suffices to bring the fish inboard safely. These nets are simple and cheap. However it is up to the recreational sector to now develop their techniques and when the policy comes up for review in 2010 their efficacy and cost should be examined.

26. There are high incentives towards compliance in recreational angling for tope for a number of reasons. Firstly tope seem to return to the same locations year on year. Conservation benefits therefore have a chance of accruing to the same locations for the purposes of repeat business or repeatable angling experiences. Secondly there is a very high peer group angling ethic for catch and release. There is a very low risk of illegal landings of tope by anglers. The angling trophy photograph with dead tope hanging up in port with a rod and line angler next to it will become a thing of the past. Most ethically motivated anglers abhor this practice anyway.

27. This measure will mean that rod caught tope will no longer be allowed to be landed or weighed ashore, and will affect the claiming of records and competition rules. A variety of rod caught record committees have already established, or are looking at, other methods of claiming records from photography and measurements. There are tried and tested techniques for establishing the weight of tope in this way. If done correctly the taking of these measurements should minimise damage to the tope. This is one area where anglers will have to demonstrate an effective Code of Practice (CoP), particularly in relation to gravid females. All the largest tope are females and are sometimes in pup. It is possible under the CoP that these should not even be brought into an angling boat.

28. Angling clubs almost universally operate a strict catch and release policy and ban the landing of tope in their club boat fishing competitions. Some of these are general competitions for a range of species but some are specifically to fish for tope. Local club rules will determine how to account for released tope catches in the awarding of points for prizes. Most anglers already practice catch and release and follow these general principles. As a consequence there are many instances of potential records being returned to the sea alive. The operation of the recreational catch and release Code of Practice will be reviewed in 2010.

¹ <http://statistics.defra.gov.uk/esg/reports/SeaAngling/default.asp>

CONCLUSIONS

29. This is a pre-emptive measure because the Government remains concerned that any future proposals for targeting tope would be unsustainable. The aim of the policy is to prevent the development of a targeted fishery. Ministerial commitments have been given to that effect. Tope conservation is the paramount objective but both the commercial and recreational sectors will be required to contribute to that conservation. The intention is not to create an "angling only" species but the potential for substantial and sustainable recreational fisheries will be retained as part of the overall conservation objective. The impact on commercial earnings is small in comparison to the potential long term benefits of conservation.

The policy will be reviewed in 2010 for:

- the operational implementation of catch and release in recreational angling
- the effects on recreational angling practices
- whether the by-catch level remains appropriate
- have there been any conservation benefits

Specific Impact Tests: Checklist

Use the table below to demonstrate how broadly you have considered the potential impacts of your policy options.

Ensure that the results of any tests that impact on the cost-benefit analysis are contained within the main evidence base; other results may be annexed.

	Yes	Yes/No
	Yes	Yes/No
	Yes	Yes/No
	Yes	Yes/No
	Yes	Yes/No
	Yes	Yes/No
	Yes	Yes/No
	Yes	Yes/No
	Yes	Yes/No
	Yes	Yes/No
	Yes	Yes/No
	Yes	Yes/No
	Yes	Yes/No
	Yes	Yes/No
	Yes	Yes/No

Annexes

Annex A Calculations relating to tope landings data and setting of 45 kg by-catch limit

Data Time Period

The 2004 to 2006 catch data has been analysed to see what amounts of tope would have been discarded, or targeted fisheries prevented, had a 45 kg by-catch limit been in force during that period. Landings records are held on the Marine and Fisheries Agency (MFA) Fishery Activity Database (FAD). A brief explanation of how the data is collected, entered and retrieved is essential.

Background to Fishery Statistics collection

All landings are recorded in the Marine and Fisheries Agency (MFA) Fishery Activity Database (FAD) either as Statutory or **Non- Statutory** returns. Vessels over ten metres are always identified since the data is derived from individual vessel logbooks and landing declarations, this is known as **Statutory data**.

Ten metre and under vessels do not complete logbooks, their data is **Non-Statutory**. It may be either grouped together or entered as an individual vessel record (this individual vessel record may or may not record the vessel's actual identity). This leads to two distinct historical data sets depending on whether the individual vessel's identity is recorded.

- Non-Statutory grouped and anonymous individual vessel data
- Statutory data (all Logbook vessels) combined with Non-Statutory data for named under ten metre vessels

Factors affecting the reliability of data: misidentification

MFA port offices reviewed the original documentation for the highest discards and it emerged that 10 out of 23 of the largest discards were in fact smoothhound. Tope and Smoothhound are similar in appearance, they may be mixed together in landings, and in some cases they have a variety of local names which have been translated incorrectly into official codes at the data entry stage.

Taking that misidentification into account in the analysis of the data suggests that a 45 kg per day by-catch level not significantly affect the earnings of the group as a whole. .

Non-Statutory grouped and anonymous individual vessel data

Grouped data

Prior to October 2006 a very high proportion of under ten metre vessel data were entered in fleet summary form or as anonymised single vessels on one day trips. Typically monthly fleet summary records are compiled for distinct landing ports. The data will consist of the aggregate number of days fished per month and the collective landings of fishing vessels; all grouped by similar gear types, such as trawls, nets, longlines, or pots.

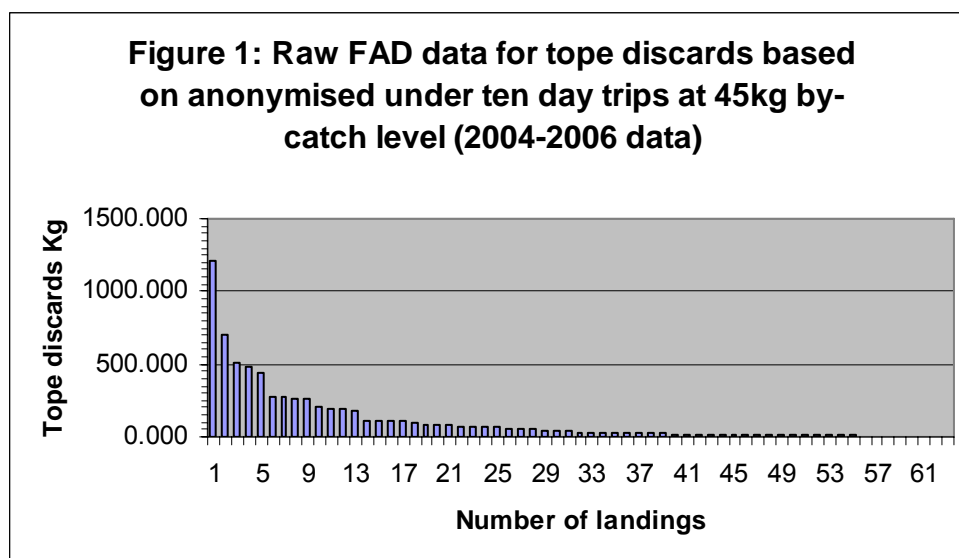
It is not possible from this grouped data to calculate precisely the individual discards/losses that might have occurred as a result of the imposition of a by-catch limit. All that can be said is that there were 12, 079 days when fishing took place; that these trips landed 1700 tonnes of fish; and nominally 38 tonnes (2.3%) of this were tope. For instance a small fleet of gill netters from the same port could have fished 50 day trips in

a given month, but maybe only one vessel landed any tope on three trips fishing and another vessel on two trips.

Anonymous individual vessel data

Within the grouped data set there are 427 day-trips by individual vessels with anonymised data entries, (NB this does not mean that the vessels identities could not be discerned by reference to paper records). For the 427 trips, by-catch level scenarios were constructed at 45kg, 75kg and 100kg per day, and trips where discards would have occurred were separated out. This analysis indicated that 45kg per day was an appropriate by-catch level. Figure 1 was derived from the raw unchecked data and shows that hypothetically 61 of these trips would have discarded some tope above a permitted 45kg per day by-catch level (live-weight).

For reasons discussed below a closer analysis of the data nevertheless reveals that even this low level of discarding is highly unlikely to be a realistic representation in most but not all cases.

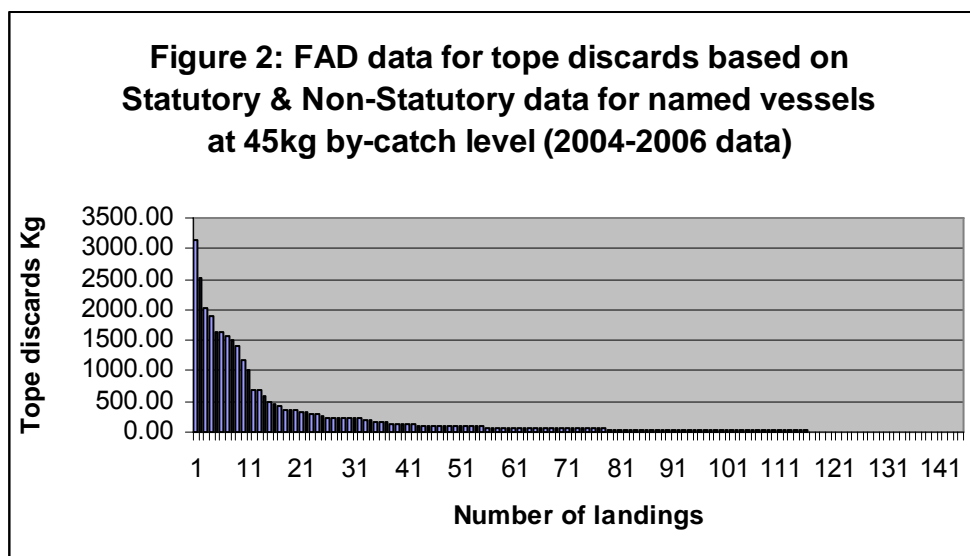


There are two reasons for the heaviest hypothetical discards:

- the heaviest landing of 1.2 tonnes is a targeted tope fishery of a type which we wish to prevent. If the data is to be believed it would have been an illegal landing anyway as both tope and smoothhounds may not be targeted with gill nets less than 220 mm mesh size.
- The next 22 hypothetical discards are above 63 kg. Of these 16 are in fact mostly smoothhound landings from Kent. The remaining 7 are from the West country and are probably genuine landings. On these 7 trips 1070 kg of tope would have been discarded worth about £695 compared to landings of other species from those trips worth about £3,504.
- The remaining 38 discards would have been below 63kg (1st sale valued about £35-00)

Statutory data (all Logbook vessels) combined with Non-Statutory data for named under ten metre vessels

Figure 2 shows 146 landings between 2004 and 2006 where some tope would have been discarded under a 45kg per day by-catch scenario.



These lost earnings amount to £16,470 or 2% compared to a total 1st sale value for all species landed of £ 889,581. Of these potential discards 66 are above 60 kg.

Thirteen of the top 27 discards would have been from a single longliner that continues to fish in an area where tope are a relatively high by-catch. The agent for this vessel has indicated that many of the tope caught would be alive on capture and could be released with some chance of survival if handled correctly. One other similar long liner has been removed from the data set because it has moved from the same fishery where there were high by-catches. At the time of writing it is not clear whether the proposed Order will apply to UK vessels outside British Fishery limits.

This data has not been subjected to detail scrutiny at all port offices for confusion between smoothhound and tope. Where we are positive that misidentification has occurred we have also removed the data. In addition some vessels that are now subject to Sea Fishery Committee bye-laws prohibiting all tope landings from within their district have also been removed.

Annex B Impact Assessments

Small firms Impact test: Commercial Fisheries and Recreational Sea Angling businesses

Nearly all the enterprises affected by these proposals are small firms so there are no disproportionate costs between them and medium to large enterprises. There are no compliance costs in terms of government regulation or paperwork.

There will be a loss of income to some individual fishing vessels as a result of having to throw back small quantities of tope they would otherwise have been able to sell.

Two kinds of enterprises are affected:

1) Enterprises or individuals that own commercial fishing vessels whose main source of income is selling fish catches (capture fisheries).

2) Enterprises or individuals that own businesses associated with recreational sea angling:

E.g. tackle manufacturers and retailers, charter boat owners and operators

Our consultation document sought views on the costs and benefits of all options from a comprehensive list of representatives, associations and businesses for both sectors.

One large and one medium sized international fishing tackle manufacturer responded to the consultation. They both supported the regulation of tope fisheries as one of the species their customers like to pursue for sport. There are no regulatory impacts on these two firms.

Legal Aid Assessment

The proposal creates new criminal sanctions for which defendants may be eligible for legal aid. Compliance is expected to be high in both the recreational and commercial sectors. The Legal Aid Tribunals Service has submitted a nil return.

Sustainable Development

The aim of the proposal is to protect stocks of tope shark from directed fisheries. Tope are considered a “vulnerable” species by the World Conservation Union. Our scientific advice is that tope should be managed cautiously to achieve sustainable stocks and that no directed fishery should be allowed for the time being.

Carbon Impact Assessment

Tope are not a target species of commercial fishing vessels so the proposal will have no significant effect on carbon emissions in the commercial fishing sector as the nature and scale of fishing activity is likely to remain the same. A similar situation exists in relation to recreational angling except that some vessels do already target tope but these form a very small percentage of the overall recreational fisheries targeting other species. There is unlikely to be any significant increase in the use of recreational vessels because of this measure.

Other Environmental Issues

Tope are classed as vulnerable by the World Conservation Union. This measure will contribute to conservation of the species.

Health Impact Assessment

The Proposal will not directly impact on health or well being and will not result in health inequalities.

Race/Disability/Gender

The Proposal does not impose any restriction or involve any requirement which a person of a particular gender, racial background or disability would find difficult to comply with.

Human Rights

The Proposal is consistent with the Human Rights Act 1998

Rural Proofing

Tope fishing is a coastal and marine activity involving local concentrations of both commercial and recreational vessels, equipment suppliers for both sectors and accommodation for travelling anglers. Some extensive travelling to coastal venues takes place by recreational anglers. There will be negligible impact on local communities as a result of changes in the economic activity of commercial vessels. However if the conservation objectives of the measure are achieved there may be benefits in the medium term to local economic activity in the recreational sector. Charter vessels, angling supply shops, local accommodation and other consumable suppliers are the most likely to benefit economically from a port or other venue gaining a reputation for having good tope fishing.

