

## **Status report for 2004 – “Russian cod fishing / transshipment at sea”**



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# 1. Introduction

This report provides an estimate of total Russian catches of Northeast Arctic cod in 2004. The report has a stronger basis than previous years (is more thorough) with regards to the analysis of satellite tracking activity. The report is the summary of considerable efforts, both by the Coast Guard and the regional offices of the Directorate of Fisheries, in gathering documentation from Russian fishing and transport vessels in 2004.

In addition to tracking analyses, this report is principally based on documentation gathered and processed by the Coast Guard. To date, it has not been possible to process and systematize all the documentation gathered by the Directorate of Fisheries' regional offices.

## 1.1. Background of analysis

Since 2002, analyses have been carried out on an annual basis of estimated Russian cod fishing. An additional half-yearly analysis of the situation as of mid July 2004 was also carried out, and concluded that activities remained at the same level compared with the same period in 2003. The analysis provides an indication of scope and also serves as the basis for a national risk assessment.

## 1.2 Subject of analysis

One important factor has been the analysis of transshipment activities and the estimation of how much fish is supplied directly from fishing vessels to Russia and third countries, in addition to the fish supplied to Norway.

The scope of transshipment activities and direct supplies from fishing vessels is based on both accumulated reloading and landing information, and on tracking activities. Reloading and landing information is based on inspections carried out by the Coast Guard and partly on inspections carried out by the Directorate of Fisheries' regional offices, which have been processed and analysed as of January 2005. Further information has been gathered since this date which has not yet been reviewed; in particular from the regional offices. However, we believe that the material used as basis for this analysis is sufficient to provide a possible estimate of scope.

With regards tracking, analysis methods have seen a progressive development since 2002. In comparison with the previous year, we have gathered tracking data from the entire year in addition to recorded tracking in and out of the entire Norwegian Exclusive Economic Zone (EEZ), thereby covering activities to and from Murmansk and farther north than 66° north, which was the previous boundary. With regards tracking to and from Murmansk, only activities within the EEZ have been recorded, and not activities to and from the Grey Zone and in the international waters in the Barents Sea.

Via the analysis, the following vessel data is recorded:

- 197 Russian fishing vessels registered as fishing for cod in 2004.
- 60 vessels have operated as recipient and transporters of cod in the Barents Sea and transported the cod via the EEZ, of which 12 vessels sail under the flag of convenience.
- Of the 197 vessels, 147 fishing vessels have transhipped one or more times to the 60 transport vessels.

- Of the 197 vessels, 92 fishing vessels have on one or more occasion, based on tracking, transported and supplied own catches of cod to other countries than Norway.
- Of the 197 vessels, 137 fishing vessels have supplied to Norway, either directly or, in some instances, via transport vessels.
- 174 incidences of transshipment have been recorded, with registered/documented quantities of cod.

In general, there has been an increase in all areas compared with 2003. There has been a particular increase in the number of registered Russian fishing vessels from 180 to 197. This figure is based on vessels landing or transshipping cod. A relatively small quantity has been recorded for several of the vessels. For 25 vessels, the quantity recorded is less than 100 tons; the lowest recorded quantity is 7 tons.

There has also been a minor increase in the number of registered flag-of-convenience transport vessels compared with 2003. However, this statistic does not necessarily denote an actual increase in the number of vessels, but could be based on the fact that a higher number of vessels has been observed and possibly checked.

The increase in the number of fishing vessels which may have transported cod to third countries could be genuine, but could also be based on the fact that this analysis has comprised a tracking registration covering a larger geographical area.

### **1.3 Quotas**

Norway and Russia reached a resolution regarding a Total Allowable Catch (TAC) for cod in the Barents Sea of 486,000 tons. Russia has a commercial quota of 192,600 (including research quota). Russia can also fish 20,000 tons of Murmansk cod. The total Russian quota is therefore **212,600 tons of cod** for 2004.

## **2. Analysis**

The purpose of this analysis has been to quantify the actual scope of Russian cod fishing in 2004 via supplies to Norway, transshipment and direct supply to third countries by fishing vessels, compared with the Russian quota of 212,600 tons.

### **2.1. Analysis framework**

The Control Group (personnel from the Control Section of the Directorate of Fisheries and from Coastguard squadron north) shall analyse available source material with the primary aim of quantifying the total Russian cod fishing in 2004. Behavioural patterns of the Russian fishing fleet (transport vessels and fishing vessels) shall also be surveyed. Any changes shall be highlighted and described in as much detail as possible.

## 2.2. Method

For this analysis, it was decided to continue with the same method as last year, with regards quantifying potential Russian cod fishing by gathering, processing and analysing all relevant information.

The following information has been gathered:

- Landing figures in Norway gathered from SLULES<sup>1</sup>.
- Documentation of reloading and supply to foreign countries via control of Russian fishing and transport vessels both in harbour and at sea.
- Tracking information which illustrates activities of Russian fishing and transport vessels. Activity is defined as the transport of cod to the EU, Russia (Murmansk and Archangel) and other areas.
- Overview of relevant flag-of-convenience vessels calling at port in third countries during 2004.
- Overview of vessels with quotas and licences in the NEAFC<sup>2</sup> area.

**The information has been processed and systematised in an Excel spreadsheet.**

The tracking log includes date and time, whether the vessel is sailing in or out and its direction. For the purpose of the log, “direction” has been divided into four parts: Murmansk, South West, the Channel and Denmark/the Baltic.

One decisive factor has been to avoid the registration of cod for vessels which may be carrying pelagic species. During the herring and capelin season in particular, vessels transport pelagic fish to the continent. The analysis only includes vessels believed to be transport demersal species.

Furthermore, several vessels have own quotas in the NEAFC for Norway haddock (approx. 30,000 tons) and haddock (7,000 tons) fished in the Irminger Sea and west of Scotland. An overview has been received of vessels with this type of quota, and these are not registered with fish quantities when they leave the EEZ. It is assumed that these vessels leave the zone in order to fish their allocated NEAFC quota. This is applied when the vessels leave the zone heading towards South West and are absent for a long period of time. Vessels which sail in the direction of the Channel and are absent for several days are allocated the normal quantity.

### 2.2.1 Calculation of quantity

In those instances where there is no documented information on how much fish a vessel has onboard, an estimated quantity<sup>3</sup> has been allocated for each vessel, as in the previous year. This estimated quantity is based on the tonnage for each vessel specified in the vessel’s licence application. There is no such information on tonnage for vessels operating under the

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<sup>1</sup> The Directorate of Fisheries’ sales note register of landed catches

<sup>2</sup> North East Atlantic Fisheries Commission

<sup>3</sup> Refers to analysis report for 2002, item 2.2.1 “load capacity”

flag of convenience (12 in total). The estimated tonnage for these vessels is based on the quantity specified in the bill of lading from 2004, and historical figures from 2002 and 2003.

In order to calculate the round weight of a headless gutted fish, a conversion factor of 1.5 is applied. This factor was applied in the calculations for 2003, as this product constitutes the largest quantity transported to the continent. However, we are also aware that other products are transported, for example fish fillets. We have therefore decided to take a closer look this year at degrees of processing for cod transported to the continent, both for transport vessels and fishing vessels.

The table below provides an overview of factors and computations which form the basis for calculations of a vessel's maximum capacity converted into the round weight in tons of fish.

The following computations were applied:

Gross tonnage	Net tonnage	Net loading capacity fish	Round weight fish
983 tons	983 tons x 0.6 = 590 tons	590 tons x 0.6 = 354 tons	354 x 1.5 = 531 tons
	(factor = 0.6)	(stowage factor = 0.6)	

Table 1 – example of how to calculate max. load capacity of round weight where a conversion factor of 1.5 can be applied to all fish.

Shipping companies specify a vessel's gross and net tonnage in all licence applications. For applications where the net tonnage is not specified, we have calculated the net tonnage by multiplying gross tonnage by 0.6, which is the relation between gross and net tonnage. We have also multiplied net tonnage by a stowage factor (0.6) in order to eliminate all corners and cupboards to arrive at a net load capacity. We then multiply the net load capacity with a factor of 1.5 to arrive at a round weight. The vessel in the table above is therefore allocated a (max.) load capacity with round weight (headless and gutted) fish of 531 tons.

For the analysis in 2002 and 2003, historical figures were applied which indicated that the vessels have a 90% load and that 80% of the load is cod. This gives the following formula: 531 tons x 0.9 (load) x 0.8 (cod) = 382 tons. The vessel in the table is therefore allocated 382 tons round weight, when no documented information is available.

Should the vessel in the table transport cod fillets instead of headless gutted cod, the calculation above would be too low, as the vessel can transport much more "round weight" when carrying fillets. For vessels carrying cod fillets, the net load capacity (net tonnage) can be multiplied by for example 3.25, thereby allocating the vessel a (max.) load capacity in round weight of 1,151 tons compared to 531 tons with a factor of 1.5.

This analysis therefore comprises calculations to identify an average factor which allows for all product types, assuming that the vessel has a 90% load. This part of the analysis does not cover fishing vessels which carry fish directly to the continent or fish transport to Murmansk (see below).

A total of 174 instances of reloading were registered in 2004. Of these, there are 54 instances where we can confirm possession of documentation which indicates total load for the vessel on the trip in question. (Based on load documents and tracking information compared with last reload.)

An analysis of these 54 instances indicates that the formula of “90% full and 80% cod with a factor of 1.5” provides an estimate of transport quantities which is too low. The reason for this is that for a majority of the reloading instances, the vessels were carrying fillets and subsequently, the factor of 1.5 could not be applied. Based on this data, we find that an average factor of 1.75 is more correct. It has also emerged that the estimate of 80% cod is too low. The average share of cod in the loads is 90% instead of 80%.

We have therefore decided to work with two alternatives for estimate calculation: both that the transport vessel has a 90% load of fish with a conversion factor of 1.75 and 90% of the load is cod, and that the transport vessel has a 90% load of fish with a conversion factor of 1.5 and 80% of the load is cod (as last year). This allows us to incorporate the transport of other products than headless/gutted fish. For fishing vessels, we have decided to continue calculations with the formula of 90% load and 80% cod.

The 2003 analysis included 2 types of calculation in order to estimate quantity. In addition to the above-mentioned formula – 90/80 – a formula was applied to allow for possible seasonal fluctuations.

A new investigation based on information gathered over the past three years has been carried out regarding the formula which allows for seasonal fluctuations. The investigation indicates that there are no grounds on which to assume that a vessel in transit to the continent should be carrying lesser quantities at certain times of the year compared with other times of the year. However, there are certain periods when diminished fishing activity has been established; in particular the summer season. This is substantiated by the fact that quantities of fish supplied to Norway are traditionally lower at this time. This implies that vessels transporting fish take longer to achieve full load during periods of low fishing activity.

#### Calculation; Murmansk/Archangel

With regards fish transported to Murmansk, an analysis has been carried out to identify the most correct quantity of supplies. There are grounds to assume that the quantity transported to Murmansk/Archangel contains less cod than loads transported to the continent. However, the vessels which sail to the continent are often also those which sail in the direction of Murmansk.

An analysis of tracking data has indicated 57 instances, of 326, where transport vessels have sailed out of EEZ in the direction of Murmansk. Of these 57, 33 instances have resulted in the registration of a reloaded quantity of fish. Based on the data gathered via inspections, there are now grounds to adjust downwards the quantity of cod for vessels sailing in the direction of Murmansk. The analysis indicates that only 10% of cod transhipped in individual instances goes to Murmansk. Therefore, vessels sailing in the direction of Murmansk are only allocated 10% of the calculated quantity, which is based on vessels with a 90% load and 80% cod. We have learned from experience that cod transported to Murmansk is frozen and headless/gutted and that a large share of the quantity is bi-products.

#### Calculation; Fishing vessels

For fishing vessels which transport their own catches to the continent, investigations have been carried out to chart the vessels' movements during the period before they sail out of the zone. This investigation is important as it helps us prevent the allocation of excessively high quantities. The investigation identified whether the vessels had reloaded or supplied cod to

Norway during the period before they sail out of the zone. If the vessels had reloaded or made supplies before leaving the zone, this quantity was deducted from the calculated quantity.

## **2.2.2 Transshipment vessels landing to Norway**

The analysis has allowed for the fact that some of the transhipped quantity is landed to Norway and is therefore included in the Norwegian landing statistic. The quantity transhipped is checked against landings to Norway. The region of Møre og Romsdal has a particularly high quantity of landed Russian fish, which has been transhipped at sea. All contract notes regarding Russian landings in this region are checked to identify whether it was a transport vessel landing the fish. In total, 3,500 tons of cod have been landed in the region of Møre og Romsdal.

## **2.3. Activities**

Based on tracking data, we can conclude that transport activity from the Barents Sea to third countries has remained unchanged since 2003. A new trend emerged in 2003 where a larger number of fishing vessels transported their own catches. This trend has continued in 2004.

### **2.3.1. Landings to Norway**

The scope of delivery of Russian caught cod to Norway saw a decline from 70,775 tons round weight in 2003 to 65,774 tons in 2004. Landings in Norway saw a slight increase in the late autumn of 2004.

### **2.3.2. Landings to Russia**

We have no data for landing in Russia in 2004. Information from 2002 and 2003 indicates that between 20,000 and 30,000 round weight tons of cod are landed in Murmansk. It has also been confirmed that a quantity of Russian caught cod is landed in St. Petersburg and Archangel.

### **2.3.3. Fishing vessels which land cod directly in third countries**

In principle, Russian fishing vessels land their catches to the continent via transport vessels. Several fishing vessels also deliver their catch directly to third countries; in particular to Great Britain and Denmark. Provisional documentation, based on landing documents, indicates that Russian fishing vessels have landed a minimum 10,000 tons directly to third countries.

The documented quantity to third countries will increase once we have analysed the material gathered after January 2005. This is substantiated by tracking data which confirms that fishing vessels have made additional trips to the continent. Calculations indicate that fishing vessels may have landed close to 50,000 round weight tons of own cod catches directly to third countries.

### **2.3.4. Transshipment areas**

Experience from the past few years indicates that the location for transshipment varies. The majority of transshipment takes place off the coast of Bear Island and in the Grey Zone. However, a trend emerged in 2004 for the majority of transshipment in international water in the Barents Sea. This area was particularly popular with flag-of-convenience vessels.



### 2.3.5. Transport areas

In total, this analysis operates with 514 instances where vessels, including fishing vessels, transport fish to third countries.

There is a clear predominance of vessels sailing in the direction of the Channel. From here, vessels can sail to Great Britain, Holland, Germany, Spain and Portugal. If the vessels sail in the South West direction, it is also possible for them to sail to Great Britain, but also to Iceland, the Faeroe Islands and, in some instances, to Canada. The high number of vessels sailing towards Murmansk is mainly attributed to fishing vessels.

#### Transport activity

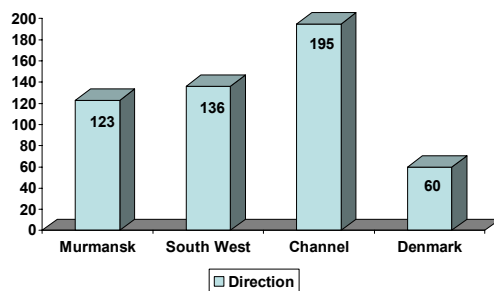


Figure 2: Illustrates where cod is transported

### 2.3.6. Distribution of transported quantity

In total, between 225,000 and 254,000 round weight tons of cod may have been transported to Russia and third countries. The largest quantity is transported towards the Channel and South West. The analysis has calculated a relatively small quantity to Murmansk; probably too small, ref. information received from Russian authorities over recent years.

#### Transported quantities in tons

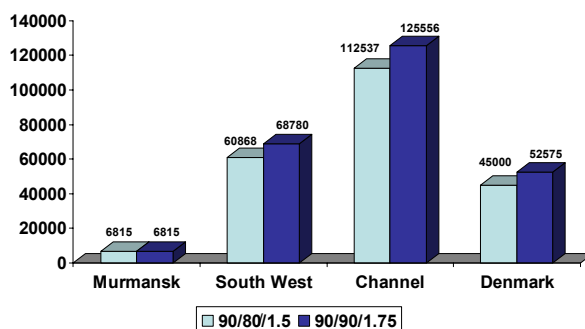


Figure 3: Illustrates probable quantities of cod to Russia/third countries

## 2.4. Russian cod fishing in 2004

### 2.4.1 Documented quantity

In accordance with the contract note register, around 65,774 round weight tons of cod were landed in Norway. Received bills of lading provide documentation that 68,000 tons have gone to third countries via reloading or direct supply. This figure is mainly based on documentation gathered by the Coast Guard. Once the documentation gathered by the Directorate of Fisheries' regional offices has been coordinated and analysed, this documented quantity is expected to increase.

With regards bills of lading, the control authorities work with information submitted during a control. There is a genuine risk that the information regarding quantity may be held back in order to avoid detection of illegal fishing.

### 2.4.2 Calculation of quantity based on tracking and reloading information

If we base calculations on the premise that vessels have a 90% load of which 80% is cod, with a conversion factor of 1.5, we can estimate Russian fishing to a minimum **292,000** tons of cod (including landings in Norway). This constitutes an excess of 79,400 tons.

If we base calculations on the premise that vessels have a 90% load of which 90% is cod, with a conversion factor of 1.75, we can estimate Russian fishing to a minimum **320,000** tons of cod (including landings in Norway). This constitutes an excess of 107,400 tons.

In 2003, Russian excess fishing was estimated at 115,000 round weight tons of cod, based on the 90/80 formula and conversion factor of only 1.5. When we apply the same factor to 2004 figures, excess fishing is estimated at 79,400 tons of cod. This gives a reduction in excess fishing of 35,600 round weight tons of cod from 2003 to 2004 – mainly attributable to a genuine reduction in fishing. Media reports etc. describe activities at a lower level than in 2003.

The reduction may also be attributable to the fact that the analysis carried out this year was more thorough – in particular with a view to the relevant information gathered regarding quantities delivered to Murmansk/Archangel and the fact that we no longer allocate quantities to fishing vessels with quotas in the NEAFC sailing out of relevant zones.

There is reason to believe that the calculation based on the 90/80 formula may be somewhat low, as we know that transshipment involves a high volume of fillets. When applying the new formula based on a conversion factor of 1.75, the actual quantity could be up to 10% higher. The new calculation is based on 54 of 174 instances of reloading; a share of 31%, ref. item 2.2.1.

### Catch capacity

As mentioned above, 197 Russian fishing vessels have been recorded fishing cod in 2004. A relatively small quantity has been recorded for 25 of these, indicating that several of the vessels may have been fishing for cod as a bi-catch. If we base our calculations on a total of 170 fishing vessels, and apply the above-mentioned estimates, we can arrive at a possible catch per day in 2004 for these vessels.

We know that some fishing vessels have up to 300 fishing days a year, while others have only 100 fishing days. If we base our estimate on an average 200 fishing days, we can arrive at the following:

$292,000 \text{ tons} / 170 = 1718 / 200 = 8.6 \text{ tons}$

$320,000 \text{ tons} / 170 = 1882 / 200 = 9.4 \text{ tons}$

The above calculation indicates that Russian fishing vessels may have fished between 8.6 and 9.4 tons of cod per day in 2004. This is regarded as a realistic quantity with regards the average capacity of a Russian vessel for fishing and production in the space of one day. The calculation is considered to be conservative as we know that certain vessels have the capacity to fish up to 40-50 tons a day.

## **2.5. Dark figures and sources of error**

There is still a great deal of uncertainty regarding flag-of-convenience vessels which transport fish from the Barents Sea to the continent. These vessels cannot be tracked, and this may result in the disappearance of a potential quantity of cod.

The official figure for registered volumes of cod landed in Russia is unknown at the moment.

As there is an increasing trend for transshipment in the Grey Zone/ International water, we may also lose a quantity of fish here as it is not possible to track Russian vessels in these areas.

We have decided to follow a consistent strategy whereby all vessels believed to be transporting pelagic fish shall not be included in the analysis. However, pelagic transport vessels may also carry cod and other white fish. In this context, we can mention one transport vessel which sailed in the direction of Denmark several times in 2004; probably heading for the Baltic. The vessel was inspected by the Coast Guard at the end of 2004, and it was confirmed that the vessel had received 1,889 tons of cod (in total the load held 1,900 tons). This quantity has been included in the analysis, but the vessel sailed in the direction of Denmark a further four times in 2004. We decided not to allocate a quantity to the vessel for these instances.

This indicates that we may be dealing with dark figures when it comes to transport of cod by transport vessels which traditionally carry pelagic fish.

## **3. Conclusion**

**Based on estimated quantity compared with documented quantity, we estimate Russian cod fishing in 2004 to be between 292,000 tons and 320,000 tons of cod round weight. This constitutes an estimated excess of roughly 80,000 – 107,000 tons in 2004.**

**Based on the same method over the past two years, the analysis indicates a slight decline in excess fishing from 2003 to 2004.**



