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# illegal fishing in arctic waters

CATCH OF TODAY - GONE TOMORROW?

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Version 1.3 - please send comments to info@wwf.no

ISBN: 978-2-88085-288-7

 Printed on 100% recycled paper.

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# Glossary of abbreviations

| | |
|---|---|
| AFWG | Arctic Fisheries Working Group |
| AIPCE | Association des Industries de Poisson de la CE |
| ASEAN | Association of Southeast Asian Nations |
| APEC | Asia-Pacific Economic Cooperation |
| EEZ | Exclusive Economic Zone |
| EU | the European Union |
| FAO | Food and Agriculture Organization of the United Nations |
| FOC | Flag of Convenience |
| JNRFC | the Joint Norwegian-Russian Fisheries Commission |
| ICES | International Council for the Exploration of the Sea |
| IMR | Institute of Marine Research |
| IUU | Illegal, Unreported and Unregulated Fishing |
| MSC | Marine Stewardship Council |
| NEAFC | North East Atlantic Fisheries Commission |
| NGO | Non-Governmental Organization |
| PINRO | Polar Research Institute of Marine Fisheries and Oceanography |
| RFMO | Regional Fisheries Management Organization |
| TAC | Total Allowable Catch |
| UNCLOS | United Nations Convention on the Law of the Seas |
| VMS | Vessel Monitoring Systems |
| VNIRO | Russian Federal Research Institute of Fishery and Oceanography |

# Preface

The high northern latitudes support rich biological diversity, including expansive fish stocks, large colonies of seabirds, benthic communities, and a wide variety of marine mammals.

Arctic biodiversity and biological productivity is of great international economic importance. About 70 per cent of the world's total white fish supply comes from arctic waters. This marine resource is also extremely significant to arctic regional and coastal communities.

Illegal fishing for Atlantic cod and Alaska pollock in the Arctic threatens the health of these globally important fisheries and their resilience to climate change. It undermines all efforts to build sustainable fisheries management regimes – a pressing objective in the Arctic, where temperatures are rising at twice the global average.

Extensive data for the Barents Sea contrasts with the limited information available about estimated illegal fishing in the Russian Far East. As well as providing alarming illustrations of how widespread IUU fishing can become when adequate measures are not taken, the Arctic also gives encouraging examples of how IUU fishing can be greatly reduced.

In the Barents Sea region, Norway and Russia have cooperated on fisheries management for several decades. Experience working together has resulted in concrete measures to control, regulate and monitor fishing. These measures have borne fruit recently with the reduction in illegal fishing in the Barents Sea. This achievement shows how coordinated efforts among governments, industry and non-governmental organisations can make a real difference in stopping criminal fishing activities.

The current challenge is to keep up the momentum, learn from positive experiences, and leverage our commitment and knowledge to expand the fight against illegal fishing.

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CEO
WWF Norway

Neil Hamilton
Director
WWF International Arctic Programme

# Executive summary

The Arctic holds outstanding nature values and rich ecosystems, from large marine mammals such as the polar bear and bowhead whale to abundant fish stocks of cod, Alaska pollock, herring and capelin to the small but numerous species such as zoo plankton.

Few places in the world are changing as fast as the arctic seas. Surrounded by countries with strong and growing economies, the region faces challenges associated with global warming, rapid development, and exploitation of natural resources. The global seafood trade integrates the regional economies into a global trading network with challenges and opportunities for marine conservation. Illegal, Unregulated and Unreported fishing (IUU) represents a significant threat, causing serious economic, social and environmental problems. On a global scale, IUU fishing has been estimated to cost up to €10 billion (US$15.5 billion) annually.

This report discusses the Barents Sea in Northern Europe and the Western Bering Sea and the Sea of Okhotsk in the Russian Far East. The Russian Federation and Norway are the two major fishing nations in these areas, and most of the fishing grounds are covered by either Norway's or the Russian Federation's national exclusive economic zones. The whitefish fisheries in these two regions have Atlantic cod and Alaska pollock as the main species. The combined catch, mostly exported to international markets, makes up 20-30 per cent of global supply of whitefish.

The Barents Sea holds the last of the large cod stocks, and there is an annual legal catch around 450,000 tonnes, more than half the Atlantic cod available on the global market. In the Barents Sea, illegal catch of cod for 2005 was estimated to be more than 100,000 tonnes, equal to a monetary value of €225 million (US$350 million). Measures taken to reduce IUU fishing in the Barents Sea include: a ban on transshipment vessels flying a flag of convenience; the North East Atlantic Fisheries Commission port control initiative; several new bilateral port control agreements; and voluntary initiatives undertaken by the seafood industry. Estimates of IUU fishing in the Barents Sea since 2005 show a significant positive trend with the estimated illegal landings reduced by more than 50 per cent. However, overfishing continues to be a problem and there is a risk that the positive trends may not continue, as IUU fishing can take new shapes and IUU products can find new ways to the market.

In the Russian Far East, Alaska pollock is an important species for fishers with annual total quotas averaging 1 million tonnes. Alaska pollock fisheries in the two main regions, Western Bering Sea and the Sea of Okhotsk, are currently of equal importance. The extent of IUU fishing in the Western Bering Sea and in the Sea of Okhotsk has not been as well documented as in the Barents Sea. By several measures, IUU fishing activities has been high since the 1990s and continue on a massive level. IUU fishing in the Sea of Okhotsk alone is estimated to be more than €45 million (US$70 million) annually in value of landings. Including tax losses and potential value of discards the loss for the industry and the public is

estimated to be €210 million (US$327 million). IUU fishing also leads to indirect economic loss, including downward pressure on prices due to large inflow of illegal products in markets.
WWF strongly believes that stopping IUU fishing in the Arctic is an urgent matter for policymakers. Reducing overfishing pressure is paramount to helping arctic fish stocks adapt to climate change. The following recommendations should be seen as preconditions for saving the arctic marine ecosystems for future generations:

- Better communication and information sharing is needed between different national control authorities such as fisheries agencies, police and customs and tax agencies, as well as across national borders.
- A ban on high seas transshipment and transshipments to flag of convenience vessels should be implemented through regional fisheries management organisations and coastal states' national legislation.
- The leadership gap in the North Pacific need to be filled as international cooperation between coastal states, flag states and port states are needed to stop IUU fishing targeting Alaska pollock stocks.
- Penalties for IUU fishing must be substantial enough to act as a deterrent. All vessels, companies and individuals convicted of IUU activities must be barred from benefiting from public aid.
- A global port state agreement should be developed and implemented.
- Mandatory traceability systems must be implemented to ensure and prove that fish and fish products come from legitimate sources.
- All seafood companies should commit to use voluntary industry standards and purchasing requirements.
- Consumers and retailers should be more proactive in requesting confirmation that fish and fish products are not the result of IUU fishing and that every product can be traced through the value chain.
- As long as IUU fishing continues to be a problem, governments and regional fisheries management organisations need to adopt more precautionary measures.

# Introduction

Illegal, unreported and unregulated fishing (IUU fishing) is a significant threat to marine ecosystems worldwide. IUU fishing represents challenges on a global scale, with economic loss to nations and communities estimated to €10 billion (US$15 billion) a year.[1] There is a growing recognition of the need to take on these challenges. This is expressed by the Food and Agriculture Organization of the United Nations (FAO) in its International Plan of Action to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated fishing.[2] See box 1 for the FAO definition of IUU fishing.

IUU fishing is a serious and immediate threat to the marine ecosystems in the Arctic. This report focuses on two regions – the Barents Sea region and the Russian Far East, and two species – Atlantic cod and Alaska pollock. The cod fishery in the Barents Sea and the Alaska pollock fishery in the Russian Far East are among the largest and economically most important fisheries in the world. With current catch levels, these fisheries make up 20-30 per cent of total global supply of whitefish.[3] By several accounts, the fish stocks have been the target of significant IUU fishing for a number of years. These activities have a negative impact on the fish populations and ecosystems and also on communities and regional economic development.

This report begins with a brief overview of some common characteristics and trends affecting the two regions (Section 1). Section 2 and 3 provides an introduction to the fisheries of cod in the Barents Sea and Alaska pollock in the Russian Far East, estimates of IUU fishing and a description of measures taken to curb the illegal activities. In Section 4, we propose a number of further actions needed. The appendix contains references to black lists and industry initiatives.

We have based this report on available knowledge, with policymakers, the seafood industry, retailers and the general public in mind. WWF's intention with this report is to enlighten readers in order to take action to stop IUU fishing. By highlighting the lessons learned from the Arctic, WWF hopes to contribute to the international efforts to eliminate IUU fishing both in this region and in other parts of the world.

WWF and the authors wish to acknowledge and thank the following individuals who reviewed drafts of this report: Frode Nilsen, senior scientist at Nofima; Hans Olav Stensli, senior advisor at the Norwegian Ministry of Fisheries and Coastal Affairs; Anne-Kristin Jørgensen, research fellow at the Fridtjof Nansen Institute. The Norwegian Seafood Council and the Norwegian Coast Guard provided facts on global seafood trade and major ports and trade routes. The following WWF staff contributed to the report at various stages of development: Konstantin Zgurovsky, Michael Ross, Laura Margison, Stacey Simmons, Lise Langård, Stefan Norris, Alfred Cook, Alistair Graham, Markus Knigge, Ottilia Thoreson, and Stefane Mauris. We are also grateful to WWF International and WWF UK for their kind support and to various partners for supporting our marine conservation work in the Arctic in general and the Barents and Bering in particular. This report reflects the opinions of WWF and not necessarily of the individuals who provided comments.

[1] Commission of the European Communities 2007.
[2] FAO 2001.
[3] The Norwegian Seafood Export Council estimates global catch of whitefish annually at 6.1-6.4 million tonnes for the years 2005-2007. Information provided in email to authors. For a definition of the term whitefish, see glossary.

**Box 1. FAO definition of Illegal, Unreported and Unregulated (IUU) Fishing**

**Illegal fishing** refers to activities**:**
conducted by national or foreign vessels in waters under the jurisdiction of a State, without the permission of that State, or in contravention of its laws and regulations;
conducted by vessels flying the flag of States that are parties to a relevant regional fisheries management organization but operate in contravention of the conservation and management measures adopted by that organization and by which the States are bound, or relevant provisions of the applicable international law;
or in violation of national laws or international obligations, including those undertaken by cooperating States to a relevant regional fisheries management organization.

**Unreported fishing** refers to fishing activities:
which have not been reported, or have been misreported, to the relevant national authority, in contravention of national laws and regulations;
or undertaken in the area of competence of a relevant regional fisheries management organization which have not been reported or have been misreported, in contravention of the reporting procedures of that organization.

**Unregulated fishing** refers to fishing activities:
in the area of application of a relevant regional fisheries management organization that are conducted by vessels without nationality, or by those flying the flag of a State not party to that organization, or by a fishing entity, in a manner that is not consistent with or contravenes the conservation and management measures of that organization; or in areas or for fish stocks in relation to which there are no applicable conservation or management measures and where such fishing activities are conducted in a manner inconsistent with State responsibilities for the conservation of living marine resources under international law.

*Source: FAO 2001, Articles 3.1 – 3.3.*

# Section 1 – Overview of IUU fishing in the Arctic

The two areas discussed in this report, the Barents region and marine areas of the Russian Far East, are far apart geographically, separated by the Arctic ice cap and adjoined to different oceans. However, they also share many common features. They contain rich and productive marine ecosystems. The plankton production, to a large extent nurtured by the meeting of warm and cold water masses, is the "engine" in ecosystems rich in many different organisms, including benthic flora and fauna, fish, seabirds and sea mammals.

The bulk of the Alaska pollock fisheries in the Russian Far East are conducted in two distinct areas roughly equivalent in terms of output, the Western Bering Sea and the Sea of Okhotsk. This report examines both of these areas, which for the most part is covered by the Russian Federation's exclusive economic zone. The Alaska pollock fishery under US jurisdiction in the eastern part of the Bering Sea is beyond the scope of this report. In the Barents region, we will examine the whole Barents Sea, including both Norwegian and Russian EEZs.

The cod in the Barents Sea and the Alaska pollock support some of the world's most significant commercially fisheries and continue to provide a foundation for jobs and economic prosperity in the regions. In the Russian Far East, estimates from 2000 set the contribution of the fishing industry to the regional economy to €760 million (US$1.2 billion) annually. In some regions, such as the Kamchatka region, the fish industry was estimated to provide half of total gross regional product.[4] In Norway, 60 per cent of the national fishing fleet is located in the northern region, with Barents Sea whitefish stocks as the single most important catch for the majority of fishers. Total export value of Norwegian whitefish production was €1.2 billion (US$1.9 billion) in 2006.[5]

**Fish becoming a global commodity**

The fish industry has changed significantly in recent years, both in the Barents region and the Russian Far East. Many of the changes can be associated with globalization. New markets, new governance structures and new patterns of behavior have been created in the fish industry. Factors contributing to the transformation include new global supply patterns in the wake of the implementation of the United Nations Convention on the Law of the Sea (UNCLOS), collapse or near-collapse of several whitefish stocks and a subsequent search for new whitefish resources. Profound political and economic transformations in the former Soviet Union, the emergence of the People's Republic of China as a leading seafood processing nation and technological changes facilitating the establishment of new trade routes for frozen fish have also contributed strongly to the development.

Fishing companies have invested in technology for freezing catch on board, as the demand for frozen fish has increased with expansion of the global market. A network of cold store terminals on land has been established, connected by global cargo routes. By 2008, Atlantic cod and Alaska pollock have become global commodities which can be shipped between continents for processing and consumption. A typical supply chain for Alaska pollock today could be traced as follows: from a Russian vessel in the Bering Sea, to China for processing via middle men in the Republic of Korea (South Korea) and then re-export as fillets to the US market. Cod could

[4] UNEP 2006: 21-22.
[5] Norwegian Ministry of Fisheries and Coastal Affairs 2007: 15.

have a comparable complex supply chain from the Barents Sea, to mainland Europe, then to China and back to Europe before being sold in a supermarket with a familiar European brand on the packaging.

**Changes in Russia's fish industry**

Few major fishing nations have undergone as dramatic changes as Russia over the last two decades. Soviet seafood production was traditionally geared towards the home market. With perestroika − economic reforms in the 1980s, possibilities for export to western countries were opened up. After 1991, foreign demand became a driving force for the fishing industry. Old, integrated structures with combined production, allocation and control functions, such as Sevryba in the northwest and Dalryba in the east, were broken up. The new entities were left to define their own strategies, at the same time as costs for fuel and fleet maintenance rose sharply.

Export to foreign ports by direct landings from fishing vessels or with the help of cargo ships (transshipment) became common. Increasingly, foreign interests were able to engage directly in fishing activity through joint-ventures and from 2000 to 2003 in auction of quotas. By several accounts the old control and enforcement structure, with control of landings in Russian ports as an important element, were not able to adapt to new realities. Also the institutional context changed rapidly with a number of changes in the legislative and administrative structure. This process still continues, with several major shifts in key elements of quota allocation and administrative structure in recent years.

**International waters**

Consistent with UNCLOS, both Norway and Russia have established exclusive economic zones (EEZ)s 200 nautical miles off shore. UNCLOS strengthened coastal states' rights to fisheries management and diminished the importance of distant water fishing fleets. Global catch of whitefish was affected as many of the species live on or close to the continental shelf.

Although important fishing grounds were within limits of national jurisdiction, unregulated fishing continued to be a problem in areas not included in the EEZs. As the US established fishery jurisdiction over a 200 nautical miles zone in the eastern parts of the Bering Sea, fishing activity shifted towards international waters in the Central Bering Sea, known as the "Donut Hole". The fisheries in the "Donut Hole" peaked in the early 1990s and then collapsed. In the Barents Sea, unregulated fishing on a smaller scale took place in the area dubbed as the "Loop Hole". This was reduced in the late 1990s after an agreement with Iceland. As of 2007, unregulated fishing in the "Loop Hole" is almost non-existent and the "Donut Hole" is closed. One characteristic of IUU fishing discussed in this report is that a large share of IUU activities takes place within national EEZs.

**Fishing vessels and transshippers**

Another characteristic of the IUU activities described in this report is the diversity of the participants (See box 2). Norwegian and Russian fishing vessels, as well as vessels from neighboring countries such as Japan, China and EU countries participate, along with of flag of convenience (FOC) vessels. Fishing vessels can either go to port to deliver their catch or make transshipments at sea. Transshippers, cargo ships who take on board catch from fishing vessels at sea, are a special challenge for control authorities as they do not operate under the same regulations as fishing boats and often unload in other countries than the flag state of the fishing vessel, making quota control difficult. They will often have a mix of catch from several fishing vessels aboard, making control even more challenging. FOC-registered vessels have played an important role as transshippers and some are known to change names and nationality frequently to avoid recognition.

**IUU fishing and control regimes**

Typical IUU activities include overfishing by taking more catch than the legal quota. Such illegal catch can be landed in the vessel's home country, typically including falsifying documents and collaborating with buyers to hide the violation; it can also be transferred to a transshipper or landed directly in another country with weaker landing control. IUU activities also include foreign vessels overfishing their quota or fishing without quota at all, and landing the illegal fish in their home country. Other examples of IUU fishing are fishing in closed areas, with illegal gear, targeting wrong species or violating rules of maximum allowed bycatch. IUU activities often involve violations against tax and customs laws.

Within the national EEZs, Russian and Norwegian fisheries regulations differ in several ways, but a common feature is that all fishing companies or vessels obtain quotas set by the national authorities on an annual basis. Fishers are obliged to register catch and landings and report the progress of the fishing activity through daily catch reports and log books. Several types of vessel monitoring systems (VSM) are mandatory for most vessels, such as satellite tracking. The vessels are subjects to random controls at sea and when landing in port, as well as document controls.

In Russia, the Federal State Committee for Fisheries was in 2004 transformed into a Federal Fisheries Agency under the Ministry of Agriculture as part of a wider institutional reform. Responsibilities for enforcement were transferred to Rosselkhoznadzor, the Federal Service for Veterinary and Phytosanitary Surveillance, another agency under the Ministry of Agriculture. The Federal State Committee for Fisheries was reestablished in 2007, and control of vessels in ports and quota control were returned to its jurisdiction. Since 1988, control at sea in the Russian EEZ has been the responsibility of the border organs of the Federal Security Service, which is directly subordinate to the President of the Russian Federation.

In Norway, the Ministry of Fisheries is responsible for fisheries management, with the Directorate of Fisheries as its operative agency. The Directorate of Fisheries is responsible for enforcement, together with the Coast Guard and the regional Sales Organizations. The Coast Guard is constitutionally subordinated to the Ministry of Defense whereas the Sales Organizations are cooperatively owned by the Norwegian fishers. In both Norway and Russia, other governmental agencies − such as tax and customs authorities − are also involved in the enforcement efforts.

**Ecological effects of IUU fishing**

High levels of illegal fishing pose significant threats to the fishery, the marine ecosystem, fishing communities and food supply. In most cases, IUU fishing leads to overfishing. In a worst case scenario, IUU fishing might lead to a rapid and unexpected collapse of the stock due to overfishing similar to the collapse of the North American cod stocks and the Alaska pollock stocks in the Central Bering Sea in the early 1990s. Overfishing can reduce the size of the stock and corrupt its age structure, for instance by reducing the number of adult fish, so that the longer term viability of the stock is threatened. Stocks with a lower average age face greater risk of recruitment failure. The impacts can be more severe, if the IUU activity continues over several years.

Since reliable catch data is a key element in stock assessments, high levels of IUU fishing will lead to uncertainty of stock size, age structure and other important data. With incomplete catch data scientists may underestimate fish mortality and overestimate population numbers. This leads to uncertainty concerning total allowable catch (TAC) advice and possibly wrong decisions on TAC size and other regulations. IUU fishing will

often weaken stakeholder's commitment to recovery plans for stocks, as individuals engaged in IUU activities can be seen as "free riders" gaining the profit of often unpopular measures. IUU fishing can likewise weaken support for precautionary and ecosystem-based approaches to fisheries management.

Climate change is already felt in the Arctic, and the consequences for fish stocks are unknown. IUU fishing creates unnecessary additional stress on fish stocks already facing growing pressure from the effects of climate change. The challenges facing the scientists predicting the outcome of climate change for fish stocks is made even more difficult by the uncertainties posed by unknown levels of IUU fishing.

**Box 2. Examples of Illegal, Unreported and Unregulated (IUU) Fishing in the Barents Sea and the Russian Far East**

**July 2006**: Two Spanish trawlers − "Arosa Nouve" and "Arosa Doce" − fishing in the Barents Sea were inspected by Norwegian Coast Guard in the Fishery Protection Zone surrounding Svalbard. The trawlers were reported to hold large amounts of cod fillets, although they had only reported headed and gutted cod to Norwegian authorities. The unreported boxes of filleted cod were hid aboard under boxes with headed and gutted cod. A third trawler from the same company – "Arosa Quince" – had been arrested by the Coast Guard some days earlier on similar suspicions. After being unloaded by Norwegian police in a Norwegian port, the total unreported catch was found to be 600 tonnes of cod. The Spanish trawler company accepted confiscation and fines from Norwegian authorities equal to €2 million (US$3 million).

**April 2006**: Four Russian fishing vessels, "BATM Bazhenvosk", "TR Rustika" , "TR Slavyanka" and "BATM Atlantic princess" unloaded catch in South Korean ports. The catch included Alaska pollock roe. Reported catch in daily vessel reports for the four vessels amounted to 5,446 tonnes combined. South Korean import figures showed a combined catch of 7,865 tonnes from the four vessels, indicating severe falsification of daily vessel reports of catches from Russian EEZ.

**March 2005:** Russian Coast Guard inspected the Chinese cargo vessel "Kai Yuan" in the Bering Sea. It was found that fish products transferred to the cargo ship from three Chinese fishing vessels were registered as "round" (i.e. unprocessed,) Alaska pollock, but in fact were fillets. The volume of illegally caught fish needed to produces this volume of fillets were an estimated 3,000 tonnes.

**February 2003**: Staff at the a Norwegian fish processing plant in the county of Troms were found to be participating in fraud with daily catch reports and landing reports concerning a number of Norwegian coastal vessels. The fraud involved a set of "double accounts" for fish (mainly cod) and money transfers. The processing firm and four vessel owners were punished with combined fines and confiscation equal to €680,000 (US$1 million).

*Source: Russian and Norwegian media reports.*

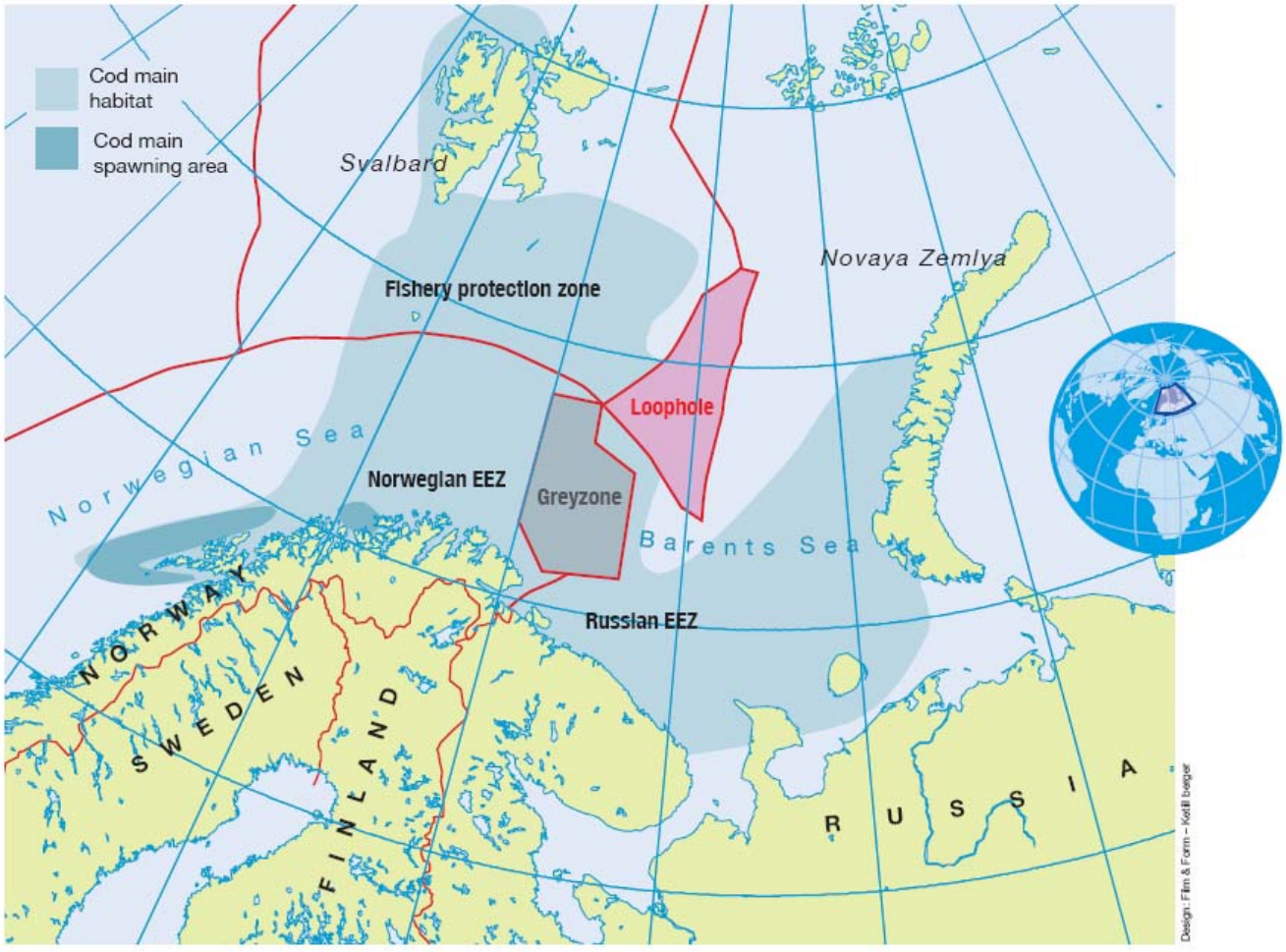
# Section 2 – IUU fishing of cod in the Barents Sea

The Northeast Arctic stock is one of several stocks of Atlantic cod (*Gadus morhua)* in the North Atlantic. It has supported rich fisheries for centuries. Other stocks of Atlantic cod are found off the coasts of North America, Greenland, Iceland and the Faroe Islands as well as in the North Sea and the Baltic Sea. Following the collapse of the North American cod stocks in the early 1990s, the Northeast Arctic cod is now by far the largest remaining stock, and supplies more than half the global catch of cod (see figure 2.1).

**The Barents Sea**

The Barents Sea is adjoined to the northeastern part of the Atlantic Ocean, and is defined by the Scandinavian and Russian landmasses to the south, the Svalbard and Franz Josef's Land archipelagos to the north, Novaya Zemlya to the east, and the Atlantic Ocean to the west. The Barents Sea is, to a large extent, covered by Norway's and Russia's 200 nautical miles EEZs, but also encompasses areas not covered by national jurisdiction as well as disputed areas. A boundary disagreement has led to a compromise; the Barents Sea contains a so-called "Grey Zone" between Russia and Norway. Norway has declared a 200 nautical miles Fishery Protection Zone around the Svalbard archipelago. Norwegian jurisdiction in this area is disputed.

**Map 1 The Barents Sea.**

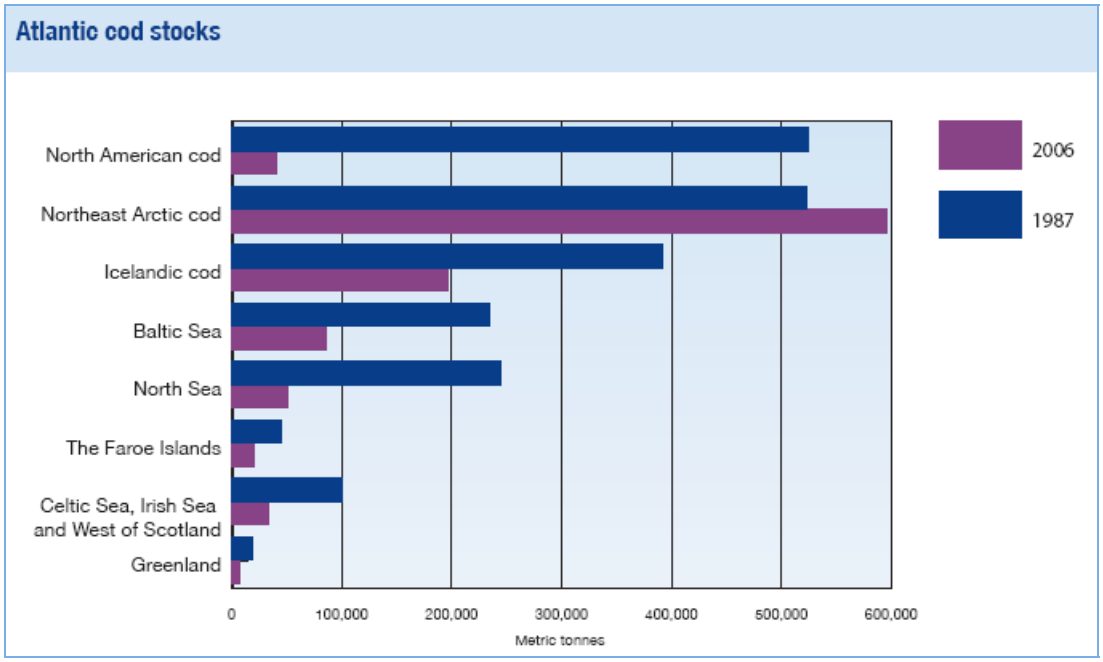


Apart from cod and other Gadidae species (see below), other important commercial species in the Barents Sea include northern shrimp (*Pandalus borealis*), redfish (*Sebastes marinus* and *S. mentella*) and Greenland halibut (*Reinhardtius hippoglossoides*). Capelin (*Mallotus villosus*) is a key species in the Barents Sea, and the stock has for a number of years supported important fisheries, but there is currently (2008) no commercial fishing. Atlantic herring (*Clupea harengus*) from the Atlanto-Scandian stock and blue whiting (*Micromesistius poutassou*) use the Barents Sea as forage area in parts of their life cycle.

**Northeast Arctic cod**

Just after World War II, stocks of Northeast Arctic cod measured 1.1 million tonnes of spawning stock biomass; today, it stands around 600,000 tonnes.[6] In spite of this decline, Northeast Arctic cod still supports a fishery worth more than €800 million (US$1.2 billion) in landed fish annually.[7] (See figure 2.2) Stocks have improved since 2000 and they have remained above the precautionary level for spawning stock size at 460,000 tonnes. In its 2007 assessment, the International Council for the Exploration of the Seas (ICES) classified the stock as having full reproductive capacity, but still being at risk of being harvested unsustainably. Due to the unreported catches, ICES defines the stock as overfished according to its highest possible yield.[8]

**Figure 2.1 Stocks of Atlantic cod (*Gadus morhua*). Catch data 1987 and 2006. Northeast Arctic cod figures 2006 include estimated IUU fishing.**




*Source: FAO, ICES. © Film & Form / Ketill Berger*

The habitat ranges from shallow coastal waters down to marine depths of more than 500 meters. Mature fish usually stay near the bottom. Adult cod primarily consume capelin, but also feed on sand eels, whiting, haddock, young cod and squid. Adults migrate long distances to their breeding grounds, of which the most important are off the Norwegian Lofoten Islands. The spawning season is from February to April. The free-floating eggs are carried by Atlantic currents along the Norwegian coast to shallow banks in the Barents Sea. During July to September, the young cod move to the seabed, where their diet changes to small benthic

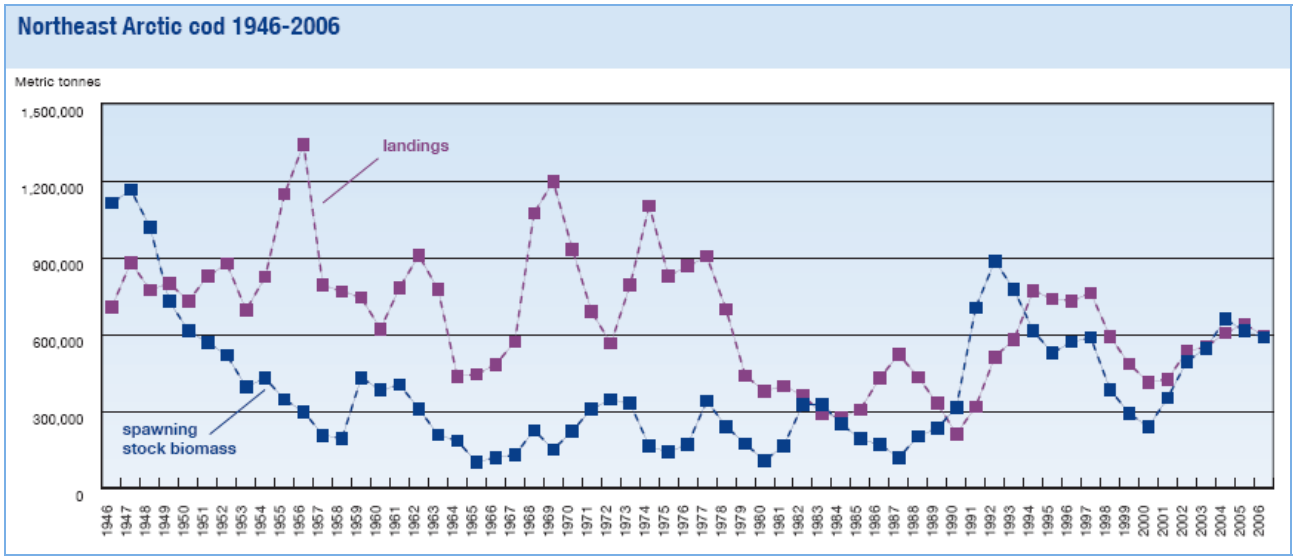
[6] In this report, weight measurements are given in metric tonnes. A metric tonne equals 1,000 kg or 2,204.6 lbs.
[7] The landings of Norwegian and Russian cod in northern Norway made up 258,000 tonnes or some 55 per cent of TAC in 2006, with a value of € 440 million (US$ 696 mill.)
[8] ICES 2007.

crustaceans, such as small crabs. Juvenile cod takes part in migration patterns covering most of the Barents Sea.

**The Barents Sea cod fishery**

The structure of the Norwegian and the Russian fishing fleets are quite different. The Norwegian cod fishery is dominated by small and medium sized vessels (up to 28 meters/90 feet), categorized as coastal vessels. Two-thirds of cod quotas are allocated to coastal vessels, while one third is allocated to trawlers and longliners above 90 feet. In the Russian fisheries, smaller vessels make up only a fraction of the total fishing effort and most of the catch is done by trawlers. Trawlers in both nations use bottom trawls. Norwegian coastal vessels use hook and line, bottom net, longline or Danish seine. Overcapacity has led to a number of reforms in the Norwegian coastal fleet.[9] A recent WWF report also shows a continuing problem of overcapacity in the Russian Barents Sea fishing fleet.[10]

**Figure 2.2 Northeast Arctic cod (*Gadus morhua*), landings and spawning stock biomass 1946-2006.**




*Source: ICES 2007, table 3.4.1.1. © Film & Form / Ketill Berger*

Historically, catches have ranged from an all time high of 1.3 million tonnes in 1956 to a low of 212,000 tonnes in 1990. The fishing effort with smaller vessels along the Norwegian coast are concentrated in seasons, with the fisheries off the Lofoten Islands in winter/early spring and the fisheries off the northern county of Finnmark in late spring as the most important seasonal fisheries. The trawler fleet is less affected by seasons, and operates in large areas of the Barents Sea, following spawning and feeding migration and the resulting stock concentrations. Apart from cod, Barents Sea fishers also catch two other related species − haddock (*Melanogrammus aeglefinus*) and saithe (*Pollachius virens*) − with the same vessels as in the cod fisheries and mostly with the same gear. In particular the haddock fisheries are closely integrated with the cod fisheries, with the two species often caught together.

**The Joint Norwegian-Russian Fisheries Commission**

The cod stock habitat is shared between Norway's and Russia's EEZ (and international waters) and the two countries share fishery management duties. Norway and Russia allow vessels from both nations to fish in each other's EEZ. The fishing activity is higher in western parts of the Barents Sea, i.e. the Norwegian EEZ, than in the eastern part. This has been considered being in both nations interest, as cod in eastern parts of the

[9] Hersoug 2005. For a brief overview of Norwegian fleet structure see pp. 20-23.
[10] WWF-Russia 2008.

Barents Sea on average are younger. Shifting the catch effort westwards, targeting older and larger fish is desirable both for the individual fishers and for the general management goals.

The Joint Norwegian-Russian Fisheries Commission (JNRFC) manages the trans-boundary fisheries, sets TAC for each nation and third countries (EU, Iceland, the Faroe Islands and Greenland) and manages joint control efforts and scientific cooperation. Stock assessments and TAC advice are provided by ICES' Arctic Fisheries Working Group (AFWG). AFWG gathers and evaluates information from leading research institutions including the Polar Research Institute of Marine Fisheries and Oceanography (PINRO) in Murmansk, Russia and the Institute of Marine Research (IMR) in Bergen, Norway.

JNRFC's stated objective is to promote sustainable exploitation of the cod stock and provide reasonable stability for the fishing industry. During the 2004 session, a harvest control rule was adopted.[11] Besides TAC, JNRFC also establishes other regulatory measures to ensure sustainable and rational management of resources. These include defining criteria for closure of areas for fishing due to high densities of juvenile fish or the use of sorting grids in trawl fisheries. A permanent subcommittee works out fishery management and control details, including protocols to exchange information and use of inspectors at sea. A memorandum on control cooperation was signed in 2000.

**Estimates of IUU landings – Norwegian vessels**

Several estimates exists of IUU fishing from Norwegian, Russian and third country vessels in the Barents Sea. IUU fishing in the Norwegian fleet has since the 1990s periodically been subject to national concern, including media coverage and several court cases against fishers and exporters.

Due to the relative high importance of the coastal fishing fleet in Norway, the overall structure of the fleet is characterized by a large number of small and medium sized vessels. The number of landings is therefore very high – exceeding 200,000 port calls annually. The control task is considerable, given also the high number of fishing communities scattered along the coast. On the other hand, all cod catches from Norwegian vessels are landed in Norway. This eliminates the challenges of controlling landings abroad and to transshippers.

Recent Norwegian estimates made on behalf of the Norwegian Auditing General set the volume of IUU landings from Norwegian vessels at between 3-10 per cent of TAC.[12] Those IUU estimates are based on extrapolation of findings of unreported catch at landing controls. They would imply illegal landings between 7,000-22,000 tonnes in 2005. In a questionnaire, a sample of Norwegian fishermen was asked about their estimate of illegal landings. The answers fluctuated between zero and 25 per cent compared to legal catch, with an average of 4 per cent illegal landings. In an interview survey, experienced control personnel stated 5-10 per cent as a reasonable estimate for Norwegian vessels.

**Estimates of IUU landings – Russian vessels**

Russian vessels fishing in the Barents Sea lands a considerable amount of their catch in Norway, EU ports or transfers their catch to transshippers. This enables IUU activities. There is a lack of consensus on the level of overfishing of Russian quotas. In a 2007 joint memorandum between the Office of the Auditor General of Norway and the Audit Chamber of the Russian Federation, the two parties agreed that there is a "considerable" overfishing of the TAC for cod in the Barents Sea.[13] However, they do not agree on figures.

[11] The rule aims at keeping fish mortality stable over a three year period and to have quotas vary by no more than +/- 10 per cent annually. However, if the spawning stock biomass drops below the precautionary limit or if fishing mortality exceeds the associated biomass limit, quotas will drop further based on a mathematical formula.
[12] Office of the Auditor General of Norway 2007: 36-39.
[13] Office of the Auditor General of Norway/Audit Chamber of the Russian Federation 2007 (Joint Memorandum).

Russian authorities have estimated overfishing of Russian quotas at maximum 20,000-26,000 tonnes for 2005. This estimate is based on average daily catches and total number of days at sea for the whole fleet, official reports from port states and estimates of load capacity for observed transport vessels.[14]

The most detailed and transparent estimates are prepared by the Norwegian Directorate of Fisheries. These are based on detailed studies of individual transshipments from the Barents Sea via the Norwegian EEZ and estimates of average load on different types of vessel. Information from the Norwegian Coast guard, other surveillance data, known documents and control reports are included in the analysis which for 2005 concludes with an overfishing of Russian quotas with 101,300 tonnes.[15] This estimated overfishing of legal Russian TAC of almost 50 per cent would have a monetary value of €225 million (US$350 million).16 (See table 2.1. for a summary of estimates by the Norwegian Directorate of Fisheries 2002-2007.) According to the Norwegian Fisheries Directorate, the numbers are conservative, as they have used careful variables in the methodology.[17]

A WWF report based on available data on Russian catch figures supports the assumption of widespread IUU fishing in the Russian Barents Sea fishing fleet.[18] The WWF report uses several methods to estimate the level of IUU fishing, including 2004 data on catch per unit for individual vessels. Up to three times higher catch rate was reported in the Norwegian EEZ and Svalbard Fishery Protection zone as compared to the Russian EEZ, where the control efforts at sea were weaker. This indicates opportunistic behavior from officers on many vessels and severe under-reporting of catch in Russian EEZ. The report also uses comparisons of catch per unit over several years, as well as comparisons of reported catch on vessels with PINRO observers on board and vessels without observers, which all indicate considerable IUU fishing by Russian vessels in 2004.

**IUU landings – third countries**

Third countries such as Spain, other EU countries, Greenland, Iceland and the Faroe Islands have fishing rights in the Barents Sea. Their cod catches in the Barents Sea in 2005 are estimated to between 59,000 tonnes and 66,000 tonnes, as compared to a reported catch of 57,200 tonnes.[19]

[14] Audit Chamber of the Russian Federation 2007.
[15] Norwegian Directorate of Fisheries 2007.
[16] Estimate based on average prize obtained by Norwegian fishers 2005.
[17] Two Norwegian research institutions have used the same data available and analyzed 2005 independently. One of the research institutions also analyzed 2004 data. The results set the figures for illegal Russian fishing higher than the estimate from the Norwegian Fisheries Directorate analysis. Office of the Auditor General Norway 2007: 42-44.
[18] WWF-Russia and WWF Barents Sea Program 2005.
[19] Office of the Auditor General Norway 2007: 44-45.

**Table 2.1 Estimates from the Norwegian Directorate of Fisheries of landings by Russian vessels of cod and haddock from the Barents Sea.**

| Estimates of overfishing of quotas by Russian vessels (metric tonnes) | | | | | | |
|---|---|---|---|---|---|---|
| | Fished cod | Quota cod | Overfished cod | Fished haddock | Quota haddock | Overfished haddock |
| *2002* | 280,000 | 190,000 | 90,000 | | | |
| *2003* | 300,000 | 191,000 | 109,000 | | | |
| *2004* | 292,000 | 212,600 | 79,400 | | | |
| *2005* | 315,000 | 213,700 | 101,300 | 87,600 | 51,300 | 36,300 |
| *2006* | 287,813 | 207,700 | 80,000 | 68,137 | 53,560 | 14,500 |
| *2007* | 227,316 | 187,500 | 40,000 | 84,966 | 64,250 | 21000 |

*Source: Norwegian Directorate of Fisheries 2007-2008. © Film & Form / Ketill Berger*

**Estimates of discards**

Discard of cod is illegal in Norway and Russia, yet it remains a significant problem and an aspect of IUU fishing that need to be rectified. Fishers are tempted to discard smaller, young fish because they are of lower economic value than larger fish. Discards of cod from Norwegian vessels in 2000 has been estimated to 10,000-30,000 tonnes. The Norwegian Directorate of Fisheries believes that discards from Norwegian vessels have been reduced in 2006 and 2007. PINRO have estimated that the Russian trawl fleet on average discarded 2 per cent of the total catch between 1993 and 2002, but reached levels of 25 per cent in 1998 when the TAC was high.[20] Recent estimates set the level of annual discards from Russian vessels to between 3,000-14,000 tonnes annually. The Norwegian Auditor General estimates total cod discards from Norwegian, Russian and third country vessels in the Barents Sea to 20,000-60,000 tonnes in 2005.[21]

**Trading and consumption of cod**

Cod is consumed in a number of markets; most important are the EU, North America, the Caribbean, Brazil and some African countries such as Nigeria. Fresh and frozen products (including fillets and value added products) are most important in North-America and northern Europe, whereas dried and salted products dominate consumption in southern Europe, the Caribbean and Brazil. Cod is an integrated part of staple diets and traditional cuisine in many countries.[22] Global catch of Atlantic cod is estimated to 713,000 tonnes, IUU fishing not included, in 2008, as compared to 2 million tonnes in 1987.[23] As the total global supply of cod has been reduced, consumption has partly been shifted to other sources of whitefish, including Alaska pollock, pacific cod, hoki (*Macruronus novaezelandiae*) and several species of hake (*Merluccius Merluccius*, *M. hubbsi* and others) as well as aquaculture species. Consumers who still prefer Atlantic cod have become increasingly more dependent on the Barents Sea for supply.

Main export markets for Norwegian cod (2006) are Portugal, Brazil, Italy, UK, Denmark, China, France and Spain.[24] Denmark and China are mainly intermediate countries where fish is processed and to a large extent re-exported for consumption elsewhere. With some exceptions, Russian cod has the same end destination. Norwegian cod can be exported fresh, frozen or salted whereas most Russian cod exports are frozen at sea.

[20] Accounts of Norwegian and Russian surveys in Spiridonov and Nikoleva 2005: 38-39 and Office of the Auditor General of Norway 2007: 45-48.
[21] Office of the Auditor General Norway 2007: 48.
[22] For historical background, and the current use of cod in traditional food in various countries, see Kurlansky 1997 and 2002.
[23] 2008 estimates: Norwegian Seafood Council in email to authors. 1987 catch data: FAO and ICES, see table 2.1.
[24] Norwegian Seafood Council 2007.

Frozen products from both countries can be exported both as fillets and as unprocessed fish. In the 1990s, large volumes of cod were landed fresh from Russian vessels to Norway for processing and re-export. This landing pattern changed after 2000, with EU ports taking the bulk of Russian landings. In 2007, the Netherlands was the most important country for landings of Russian cod.[25]

Illegal cod can enter the "normal" supply chains from the point of landing. Regardless of which port the illegal cod from the Barents Sea is landed in, it might be re-exported to any EU country, or overseas to China or elsewhere. Little is known about whether specific sectors of the processing industry are more prone to use illegal cod than others. It is therefore reasonable to presume that illegal cod could be used either deliberately or unintentionally by any processer or retailer without sufficient demands for traceability and documentation. Consumers buying their favorite *bacalhau* in Portugal or Brazil, "*fish and chips*" in the UK or frozen fillets in Germany could all be unintentionally supporting IUU activities.

[25] Norwegian Directorate of Fisheries 2008.

**Map 2 Landings and transportation of cod from the Barents Sea.**


*Source: Norwegian Coast Guard and WWF. © Film & Form / Ketill Berger*

**Measures taken**

A number of measures have recently been taken to stop IUU fishing in the Barents Sea:

- **Ban on transshipment vessels flying flags of convenience.** Russian and Norwegian fishing vessels were in 2004 banned from delivering catches to transport vessels flying flags of convenience (FOC) by the JNRFC. In 2007, the Norwegian Directorate of Fisheries reported that FOC transshippers no longer operated in the Barents Sea.

- **NEAFC port control initiative**

  To close European ports to landings of frozen fish, not been verified as legal by the Flag State of the vessel, NEAFC members agreed to direct vessel inspections in designated ports all over Europe. A joint initiative by Norway and Russia was instrumental for the achievement. The procedures, which came into effect 1 May 2007, provide for prior notification of landings of frozen fish that will include a declaration by the master of the vessel. Before the landings can be authorized by the port state, the flag state of the landing vessel must exercise its responsibilities by verifying the information provided in the declaration. In particular, the flag state must confirm that the fishing vessel had sufficient quota to allow for the catch. Without the confirmation, no authorization can be given by the port state. Without authorization no landing can occur. This provides the means for Contracting Parties to control landings of illegally caught fish from the whole NEAFC Convention Area, including cod from the Barents Sea.[26]

- **Seafood industry initiatives − AIPCE**

  Several individual seafood processers have taken steps to make sure that they do not purchase products which originate from IUU fishing. The European Fish Processors and Export/Import Association (AIPCE), is a trade organization within the European Union. In 2006, this organization launched a new initiative concerning Barents Sea cod aimed at establishing strong and standardized measures across individual companies. It includes a letter of warranty to be signed at every stage of the supply chain from landing to final consumption. The letter provided by the AIPCE is to be signed by the party who provides the fish, committing this party to a set of principles, including a demand to oblige to national and international legislation concerning IUU fishing. AIPCE states that breaching of the principles may lead to delisting as supplier to AIPCE members.

- **Bilateral port control agreements**

  Norway has entered into bilateral agreements with a number of countries to enhance port control of fish landings. In addition to EU countries such agreements have been made with the Faroe Islands, Russia, Canada, Greenland and Morocco.

**Results from recent initiatives**

By several accounts, IUU fishing for the Barents Sea in 2006 and 2007 show a significant positive trend. According to the Norwegian Directorate of Fisheries estimates, overfishing of quota by Russian fishing vessels were down to 40,000 tonnes of cod and 21,000 tonnes of haddock in 2007, as compared with 101,000 tonnes of cod and 36,000 tonnes of haddock in 2005. The positive trend was already seen the year before. According

[26] Under the NEAFC agreement, the flag state must also confirm that the vessel was authorized to fish and that the area of catch has been verified by a Vessel Monitoring System. The control measures also include new obligations and benchmarks in regards to inspections carried out by the port state. Under the new procedures a limited number of ports for each Contracting Party have been designated for landings of frozen fish by foreign vessels. See http://www.neafc.org

to the Norwegian Directorate of Fisheries, the new NEAFC port regime from May 2007 provides more data on landings, reducing the level of insecurity in the estimates.[27] Also the JNRFC acted on preliminary signals of significant lower levels of IUU fishing in the Barents Sea in its decision on TAC for 2008.

Norwegian industry sources unanimously reported increased demand for Barents Sea cod in EU markets during 2007. They ascribed this to the perceived disappearance of large volumes of "black" fish in the markets.[28] The market price of cod rose steadily, consistent with the perceived increase in demand for legal fish.[29] Another indication of a functioning control regime is that Russian landings of cod in Norway and Russia have increased during 2007, possibly indicating that increased control in EU ports has made it less profitable for opportunistic companies to land their fish there.[30]

[27] Norwegian Directorate of Fisheries 2008.
[28] *Fiskaren* 22.10.2007.
[29] Monthly average price for cod at landing in Norwegian ports was up 21 per cent from March 2005 to March 2007. Source: The Norwegian Fishermen's Sales Organization (www.rafisklaget.no). This was an indication of increased demand, but cannot be explained solely by lack of IUU fish in the markets, as also changes in supply from other nations will inflict on global price.
[30] Norwegian Directorate of Fisheries 2008.

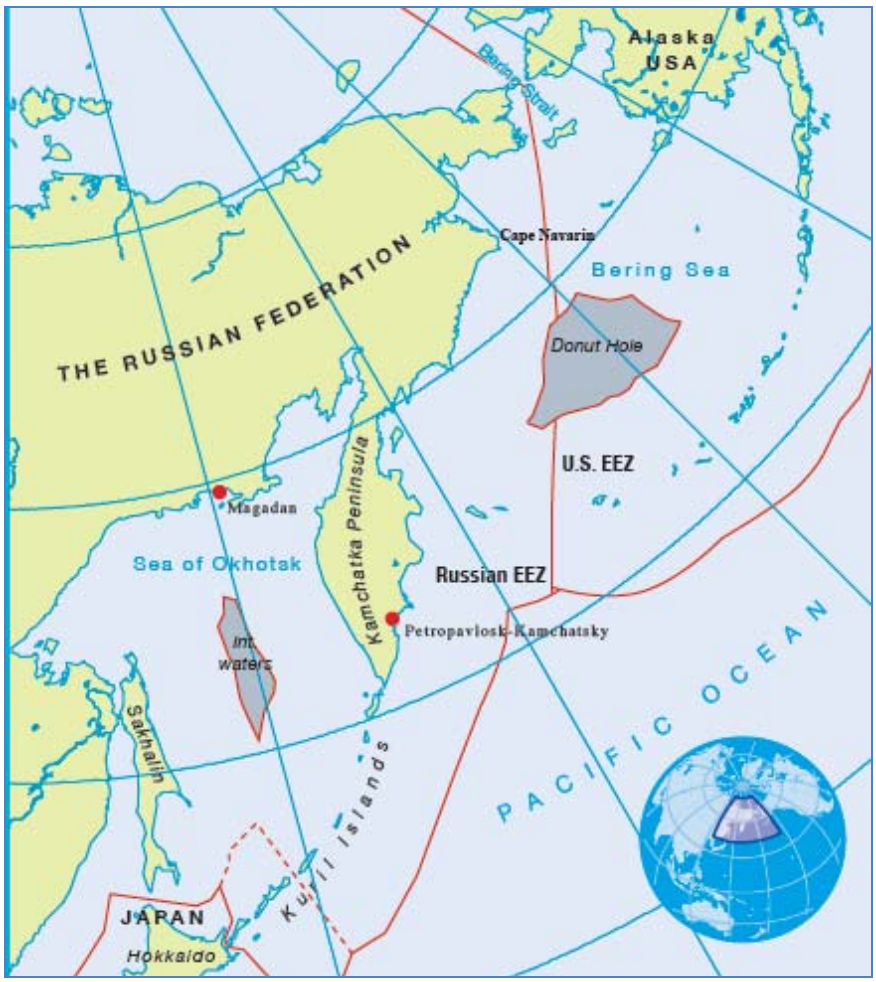
# Section 3 − The Western Bering Sea and the Sea of Okhotsk

Alaska pollock (*Theragra chalcogramma)*, also known as walleye pollock, supports the second largest fishery in the world after the Peruvian anchovy.[31] Products are consumed all over the world, most notably in the Asian Pacific region, North America and Europe. Alaska pollock fisheries make up an important part of total Russian and US seafood production in the Pacific region. Main fishing areas for the Russian fisheries are in the western parts of the Bering Sea and in the Sea of Okhotsk.

**The Western Bering Sea and the Sea of Okhotsk**

The Western Bering Sea is defined by the Commander Islands in the south and the Bering Strait in the north. For the purpose of this report, the eastern extent of the area is defined by the border of Russia's EEZ. Outside of the Russian EEZ lies partly the US EEZ and partly international waters, known as the "Donut hole". The Sea of Okhotsk lies west of the Kamchatka peninsula and the Kuril Islands, partially enclosed by the peninsula and the Russian mainland. With the exception of an area of international waters in the middle, the whole Sea of Okhotsk is included within Russia's EEZ.

**Map 3 The Russian Far East, with the Sea of Okhotsk and the Bering Sea.**




*© Film & Form / Ketill Berger*

[31] FAO 2007: Figure 6, page 11.

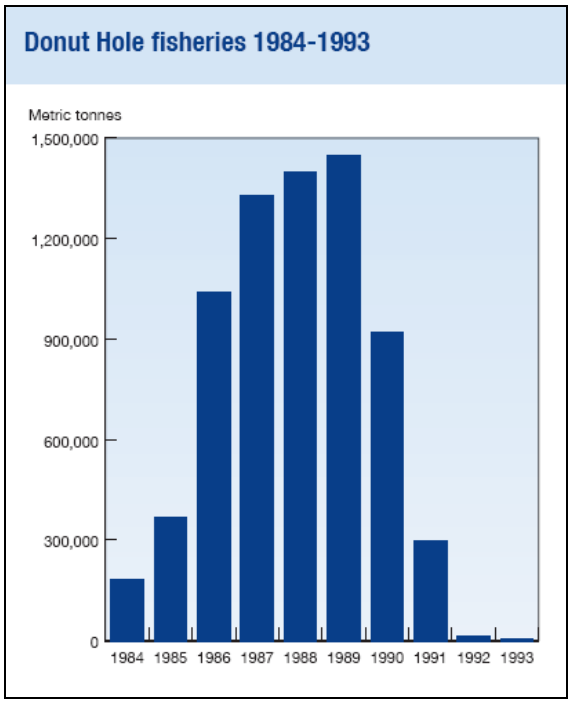
Both the Bering Sea and the Sea of Okhotsk are highly productive, and support a diversified fishery. Besides Alaska pollock, other commercial species include Pacific cod (*Gadus macrocephalus*), safron cod (*Eleginus gracilis*), pacific herring (*Clupea pallisii*) as well as several species of salmon, redfish, halibut, flounder, squid, crab and shrimp. The Sea of Okhotsk accounts for 50-60 per cent of the commercial catch in the Russian Federation, compared to 20 per cent for the Western Bering Sea.

**Alaska pollock**

Alaska pollock are schooling, midwater to bottom-dwelling fish, living anywhere between shallow shore waters to sea depths of 1000 meters. Most occur between 100-300 meters depth. Generally, the fish move inshore during summer and offshore during winter, occupying greater depths during the colder months. Spawning occurs at different seasons depending upon location. Juveniles feed on plankton near the surface at night and descend during the day. Older fish consume copepods, shrimp, euphausiids, and fish. Alaska pollock are an important prey for a wide range of piscivorous fishes and marine mammals

The population is made up of several stocks. The Russian Federation recognizes separate stocks in the Bering Sea, Sea of Okhotsk, and in the Sea of Japan. Seasonal migrations occur as fish move from deeper winter waters to spawn in shallow areas (90-140 meters) along the coast. After spring spawning they return in summer to foraging areas along the outer-shelf.

**Figure 3.1 Alaska pollock (*Theragra chalcogramma*) catch in international waters in the Central Bering Sea ("the Donut Hole") 1984-1995.**

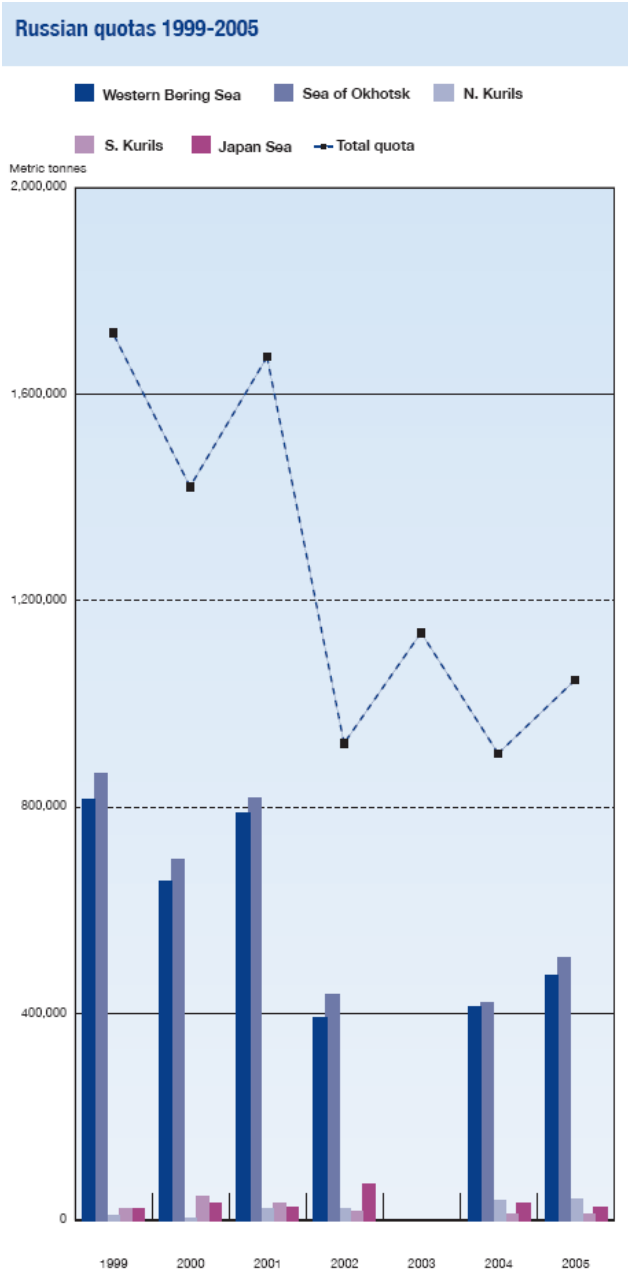



*Source: See appendix 2. © Film & Form / Ketill Berger*

**"Donut Hole" fisheries**

During the 1980s, an international fishery developed in the Central Bering Sea outside the EEZs of Russia and USA in an area referred to as the "Donut Hole". In the peak 1989 season, vessels from the United States, Russia, Japan, China, Poland, Korea, Spain and other nations officially caught about 1,400,000 tonnes of pollock from these international waters (see figure 3.1.). The fishery collapsed in 1992 and fishing activities was subsequently closed under The Convention on the Conservation and Management of Pollock Resources in the Central Bering Sea (1994). A committee meets each year to discuss the fishery. However a moratorium has been in place since 1992. The "Donut Hole" fishery has yet to recover after 15 years.

**Figure 3.2 Alaska pollock (*Theragra chalcogramma*) quotas 1999-2005.**




*Source: Pacific Rim Fisheries. 2003 data lacking.*



### Alaska pollock fisheries in the Russian Far East

Alaska pollock catch in the Russian Far East have declined dramatically from their levels in the 1980s. In the Western Bering Sea the largest catch occurred in 1988, when Russian fishers landed almost 1.3 million tonnes. Since then, these catches have decreased to 473,000 tonnes in 2005; about 30 per cent of the 1988 maximum catch. The average catch of Western Bering Sea Alaska Pollock in 2001-2004 was 368,000 tonnes. Catches of Alaska pollock in the Sea of Okhotsk have also been reduced.[32]

Industrial Russian fishing for Alaska pollock began in the 1960s, mostly in the eastern parts of the Bering Sea. After the US claim for extended fishery management jurisdiction in the Eastern Bering Sea, Russian fishers and fishers from other nationalities moved west to the “Donut Hole” in the Central Bering Sea and into the Western Bering Sea. With the closure of the “Donut Hole” in 1992, fishing effort shifted to Russia’s EEZ. The northern shelf off Cape Navarin experienced increased fishing activity from 1996 to 1999, with annual catch ranging between 596,000-753,000 tonnes. The catches subsequently declined to less than 400,000 tonnes in 2000.[33] The southwestern Bering Sea fisheries amounted to 200,000-300,000 tonnes in the 1970s and 1980s, but the catch experienced a reduced trend after 1995.[34]

The Russian Alaska pollock fishery uses pelagic trawls, bottom seines, Danish seines, and longlines. Pelagic trawls produce moderate levels of by-catch of other species. They capture a wide range of fish from 10-65 cm, though the most valuable fish are 35-41 cm. Three and four year olds dominate the catch, but there are also a high number of juveniles in the average catches. As a result, the modern fishery is characterized by a high degree of waste and by-catch as fishers discard undersized, damaged or unmarketable fish. With Danish seines, larger fish dominate the catch, usually 55-65 cm in size. Bottom nets select fish four to six years old (40-50 cm) and longlines those between 50-60 cm.[35]

[32] Balykin 2006. For catch figures 1980-1993, Vaisman 2000, table 6.
[33] ACIA 2005: 749-750.
[34] Balykin 2006.
[35] Balykin 2006.

**International cooperation**

No international RFMO manages Alaska pollock stocks across the entire North Pacific. There is a lack of an institutional framework for North Pacific nations to engage in cooperation on Port State controls, vessel Black Lists, or other actions to limit IUU fishing. A number of international cooperation bodies do however exist. In addition to the convention on the Central Bering Sea already mentioned, existing agreements in the fishery sector include The Convention for the Conservation of Anadromous Stocks in the North Pacific, which is the basic instrument for the North Pacific Anadromous Fish Commission (NPAFC). This treaty is limited in scope to a number of salmon stocks in international waters. It is therefore not relevant for Alaska pollock fisheries, but the commission has become a forum for exchange of information and ideas about IUU fishing in the North Pacific.

The US-Russia Intergovernmental Consultative Committee (ICC) (1988) is a bilateral agreement to discuss fishery issues of mutual concern. The ICC promotes joint scientific research and fishery ventures and encourages cooperation to combat IUU fishing. Other existing bodies include the Asia-Pacific Economic Cooperation (APEC), which in 2005 decided to undertake action to manage living resources sustainably, including efforts to stop IUU fishing.[36] Also the Pacific Rim Fisheries Conference, held in alternating countries, is of interest.

**Trade in Alaska pollock**

Total global catch of Alaska pollock in recent years is estimated to 2.8 million tonnes, with Russian supply at 30-50 per cent. The Russian fishing industry supplies seafood products to buyers from all over the world, but mostly to Pacific Asia, North America and the EU. According to industry sources in the Primorye region, about 80 per cent of total Russian Alaska pollock production in 2005 was exported. Pollock is sold as frozen (unprocessed or fillets) or as *surimi* (fish paste). In addition to this, there is a marked for Alaska pollock roe. In the global marked, China is the largest buyer of unprocessed Alaska pollock. Alaska pollock fillet is consumed in the US and in EU, where Germany is the largest European consumer of Alaska pollock.[37] Japan and the Republic of Korea (South Korea) are the main consumers of surimi and roe.

**China's emergence as major seafood processer**

In the 1990s, China emerged as a major seafood processor. This greatly expanded the global marked for frozen, unprocessed fish and affected the demand and global trade patterns for both Alaska pollock and Atlantic cod. The Chinese processing industry is mainly located in the regions of the northeastern port cities of Dalian and Qindou. China exports to traditional markets for frozen whitefish in the US and Europe, and has become the main supplier of Atlantic cod and Alaska pollock to the world's largest seafood consumer, EU. By 2006, Chinese processing industry supplied 58 per cent of EU import of Alaska pollock fillets and 42 per cent of cod fillets.[38] Total Chinese export of fillets reached 715,000 tonnes in 2005.[39]

Russia is a key supplier to China. Besides Peruvian export of fishmeal, Russia is the largest exporter of seafood to China, with frozen pollock and cod as the main products. Total Russian seafood exports to China exceeded USD 1 billion in 2005.[40] Some of the trade goes via South Korea, with Korean brokers as intermediaries for Chinese seafood companies.

[36] http://www.apec.org/apec/apec_groups/som_committee_on_economic/working_groups/fisheries.html
[37] AIPCE study 2007, figures 6.1-6.3.
[38] AIPCE 2007.
[39] Glitnir 2007.
[40] Ibid.

**Estimates and impact of IUU fishing**

The extent of IUU fishing in the Western Bering Sea and in the Sea of Okhotsk has not been as well documented as the IUU fishing in the Barents Sea. Indications of widespread IUU fishing in the 1990s have been reported by several sources.[41] IUU fishing of Alaska pollock in the Russian Far East makes up part of the larger IUU fishing operations in the area. A recent analysis sets IUU figures in the salmon industry to 40-60 per cent of legal TAC and comparative figures within the crab industry to 43 per cent or more.[42] The presence of high IUU activity in other sectors of the Russian Far East fish industry makes the assertion of high levels of IUU fishing of pollock plausible.

Estimates of levels of Alaska pollock IUU fishing can be made by comparing import data from market countries with national TAC. This method applies more easily to the Alaska pollock fisheries in the Sea of Okhotsk, since pollock roe is an important product from this region and the number of importing countries for this product category is limited. The level of roe yield per kilogram fish under normal circumstances is known. Total production of Alaska pollock roe reached 46,000 tonnes in 2005, and this level of production is believed to not be possible without considerable overfishing of quotas.[43]

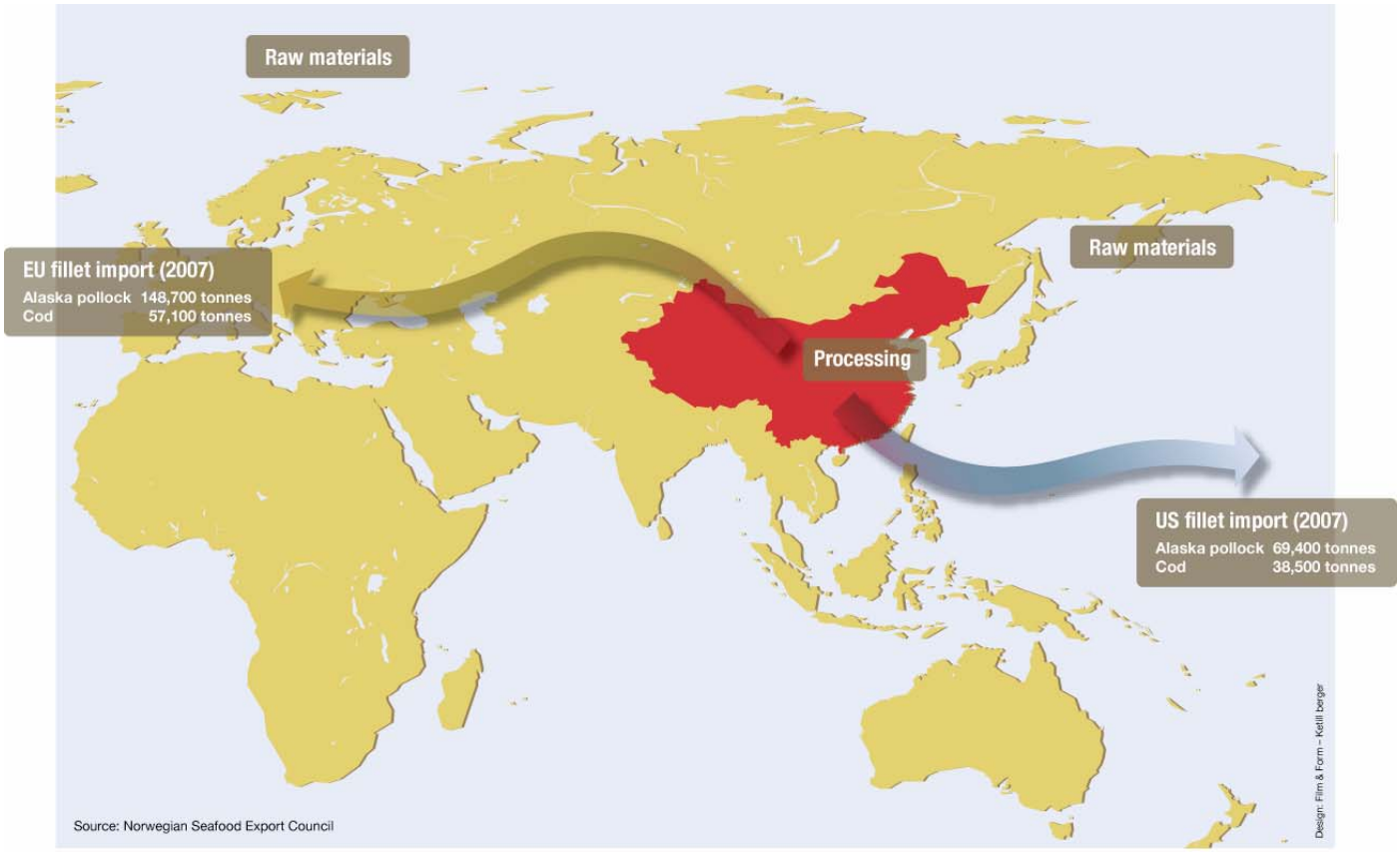
The overfishing of quotas to obtain roe lead to discards of juvenile and male fish. According to an estimate from the Kamchatka Fisheries and Oceanography Research Institute (KamchatNIRO) the TAC in the Sea of Okhotsk was overfished by 33 per cent or 166,000 tonnes in 2005.[44]

IUU fishing is believed to be high also in the Western Bering Sea, where the catch is mostly sold as frozen products or as surimi. Isolated cases where import data have been studied by the authorities show massive overfishing by individual vessels landing in South Korea. For the first seven months of 2006, Russian vessels made 246 calls at ports in South Korea. The difference between daily reports from the Russian vessels and Korean statistics was 29,500 tonnes, giving an average volume of illegal fish at 120 tonnes per call.[45] Several cases where Russian and foreign fishing vessels have been controlled at sea bare witness of widespread IUU fishing (see box 2.)

Overfishing associated with IUU activities is seen as a threat to the regional fish industry. One industry source estimates direct economic losses of IUU fishing in Sea of Okhotsk in 2005 to €46 million (US$72 million) in value of IUU landings alone, including tax losses. Potential economic loss due to discards is estimated to €216 million (US$340 million). In addition to this comes indirect economic loss, including downward pressure on prices due to large inflow of illegal products in markets.[46] (See table 3.1. for selected economic impacts of IUU fishing).

[41] Fadeev and Wespestad 2001. Vaisman 2000.
[42] Clark 2007.
[43] Glotov 2005.
[44] *Vesti-Petropavlovsk-Kamchatki* No 47, November 2007.
[45] Ibid.
[46] Estimates by Dmitry Glotov, President of the Association of Primorye Fish Industry Companies, in Glotov 2005.

**Map 4 China's key role in the global trade of whitefish.**




*Source: Norwegian Seafood Export Council and WWF. © Film & Form / Ketill Berger*

The long term effect of overfishing on stocks is not known. Earlier experience with total collapse of the Alaska pollock stock in the Central Bering Sea shows that overfishing can have extremely grave consequences. Lack of knowledge about consequences of climate change for the marine ecosystems in the Bering Sea and Sea of Okhotsk adds to the uncertainty.

**Recent initiatives**

Several initiative are recently taken, which can address the IUU challenges in the Russian Far East. Such initiatives include:

- **MSC initiatives.** In 2007 the Russian Alaska Pollock Fishing Association announced a decision to conduct a preliminary assessment of the industry to comply with environmental standards set by MSC. Association members catch about 70 per cent of the Russian Alaska pollock catch. There is also a growing interest for MSC certification in other northern Pacific countries. Both Japan and China have many MSC-certified seafood processors, including 24 MSC-certified processors of Bering Sea Alaska pollock. In partnership with independent certification groups such as the Marine Stewardship Council (MSC), private companies are developing best market practices to monitor their own industry and eliminate IUU fishing products from the marketplace.

- **New Russian fisheries legislation.** In a meeting of Russia's State Council Presidium in August 2007, President Vladimir Putin called for reforms in the Russian fishing sector. He pointed to weaknesses in the current state of control in Russian EEZ.[47] New legislation from 2008 will change several aspects of Russian fisheries management, including quota allocation and control systems. All catch from within the Russian Federations EEZ will be subject to custom procedures and several measures are taken to strengthen sanctions against companies found guilty in illegal fishing. The new law includes measures important to reduce IUU fishing such as the new approach that allows data from fisheries monitoring system to be considered as evidences in court. Violators can be deprived of fishing rights, and all fishing gear and vessel can be confiscated.

[47] *Kommersant* online 1.9.2007.

**Table 3.1 Selected economic impacts of IUU fishing.**

| PARAMETER | INDICATORS | IMPACT |
|---|---|---|
| **Contribution of fishing to GDP/GNP** | Value added; value of landings | IUU fishing will reduce the contribution of EEZ or high seas fisheries to the national economy and lead to a loss of potential resource rent. |
| **Employment** | Employment in the fishing, fish processing and related sectors | IUU fishing will reduce the potential employment that local and locally based fleets may make to employment creation and the potential for employment creation. This is likely to be a major factor only in respect of EEZ IUU fishing. |
| **Export revenues** | Annual export earnings | IUU fishing by reducing local landings and non payment of access dues will reduce actual and potential export earnings. This will, of course have potentially serious implications for surveillance activities, where these are supported wholly or partly by export revenues (or port revenues, see below). |
| **Port revenues** | Transshipment fees; port dues; vessel maintenance; bunkering | IUU fishing will reduce the potential for local landings and value added. |
| **Service revenues and taxes from legitimate operations** | Licence fees, revenue of companies providing VMS, observer etc facilities, exchequer revenue from company taxes. | IUU fishing will reduce the resource which in turn will reduce the other revenues that would accrue from companies providing legitimate fishing services. This includes company taxes |
| **Destruction of ecosystems** | Reduction in catches and biodiversity of coastal areas | Loss of value from coastal areas e.g. inshore prawn fishing areas and from mangrove areas that might be damaged by IUU fishing. Reduction in income for coastal fishing communities. |
| **Food security** | Availability of fish for local consumption (food and protein balance sheets) | The reduction in fish availability on local markets may reduce protein availability and national food security. This may increase the risk of malnutrition in some communities. |

*Source: Marine Resource Assessment Group 2005, table 8, pp. 56-57.*

# Section 4 – Conclusions and recommendations

In preparing this report, WWF used available assessments describing the extent of IUU fishing in the Arctic. In the Barents Sea, IUU fishing appears to have been greatly reduced in 2006 and 2007. This result is encouraging. Norwegian and Russian fish industry has already harvested some gains in the 2008 TAC being set higher on the basis of an assumption of decreased IUU fishing. Law-abiding fishermen and exporting companies have also experienced strong demand and increased prizes, a trend they ascribe to the absence of large volumes of “black” Barents Sea cod in the market. There is however a risk that the results are not permanently won, as IUU fishing in the Barents Sea can take new shapes and products from IUU fishing can find new ways to the market.

By several measures IUU fishing activities continue on a massive level in the Russian Far East. In the Bering Sea and Sea of Okhotsk, estimates of IUU fishing range from 20-60 per cent of the reported catch. Anecdotal accounts suggest that these rates could be much higher in both areas.

This report reveals that IUU fishing in arctic waters is not a regional issue but rather is global in nature. The seafood industry is a global commodity trading business with complex supply chains. Combative efforts should be directed to every step of the supply chain, including harvesting, transportation, storage, distribution, processing and marketing. This requires international cooperation among governments, businesses, organizations and seafood consumers.

Governments need to lift the issue to the top political agenda. Efforts must be determinate and long term in perspective. Short term campaigns without support from top level officials are less likely to provide results. Focus on transparency, documentation and traceability throughout the whole supply chain is the best way to avoid products originating from IUU fishing to enter the markets. Without a market for products derived from IUU fishing, the incentive for IUU fishing will be gone.

Authorities should impose substantial sanctions on individuals or companies involved in IUU fishing or trading in products derived from such activities. All levels of the supply chain should be subject to stiff fines and penalties including imprisonment in serious cases. Punitive measures could also include public identification and blacklisting, either by governments, multinational organizations or individual companies or groups of companies.

- **Coordination, information sharing and transparency.** Efforts to fight IUU fishing need to be better coordinated on several levels. Better communication and information sharing is needed between different national control authorities (such as fisheries agencies, police and customs and tax agencies) and between countries. Scientific stock assessments, TACs and individual vessel quotas should be available for the general public.

- **High seas and FOC transshipment.** Transshipments on the high seas of illegal catch from coastal waters or EEZs are a significant factor for transportation of undocumented fish. Also it can be transshipped to FOC vessels. Until both these practices are made illegal under international law, it is difficult to maintain a fair and sustainable allocation system because unregulated fishers can operate legally outside any RFMO-based system. A ban on high seas transshipments and transshipments to FOC vessels should be implemented through RFMOs and coastal states' national legislation.

- **Institutional leadership gap in the Pacific.** Government and business can gain from joint advocacy for a stronger institutional framework for regulation in the North Pacific region, based on models from the NEAFC area and elsewhere. No international RFMO manages Alaska pollock stocks across the entire North Pacific. In the absence of a strong RFMO, North Pacific nations will be less likely to enforce strong Port State controls, maintain vessel Black Lists, or take other actions to limit IUU fishing.

- **Control at sea in the Barents Sea and Russian Far East.** States need to recognize that it is in their best interest to meet obligations under UN Law of the Seas to manage their EEZs and stop IUU fishing. This should be a moral obligation and also one of self interest, since IUU fishing undermines any efforts to maintain sustainable marine ecosystems. The Norwegian government should keep up its efforts to control fishing activity in its areas of jurisdiction. The Russian Federation should strengthen its control over the Russian EEZ with more control vessels at sea. Both nations should make full use of new technological possibilities.

- **Port control in Norway and Russia.** Too meet the recent trend in the Barents Sea with more landings in Norwegian and Russian ports, port control in both countries' Barents Sea ports should be strengthened. Resources should be allocated to control authorities and police to make them able to audit landings as well as traders and processing firms. Public prosecutors should be trained to meet the need to bring cases for the courts. New legislation strengthening Russian customs control of export of fish from Russia's EEZ can be effective against IUU fishing in both the Barents Sea and in the Russian Far East.

- **Bilateral and regional port control cooperation.** Countries such as EU members, USA and Japan, which are main consumers of seafood products from the Barents Sea and the Russian Far East, should make sure that the products they import are not a result of IUU fishing. Countries importing fish from the Barents Sea or the Russian Far East for re-export to end consumers in other markets, such as China and South Korea, should facilitate a development for its trading and processing industry towards supporting a reliable traceability and documentation scheme. Bilateral agreements on port control can be used as supplements to regional agreements. Norway's agreements on port control with countries such as Morocco can serve as an illustration.

- **Global port state agreement.** Illegal cod fishing in the Barents has diminished in large part due to effective port state control through NEAFC. International efforts now underway to extend this best practice in fisheries management to a broader, global port state agreement must be supported. The key desired outcome is that only registered and compliant ports can be involved in legitimate and sustainable seafood trading.

- **IUU fishing as a transnational crime problem.** Governments need to start dealing with IUU fishing in the same way they approach cross-border crime issues such as drug trafficking, illegal immigration and trafficking in persons. Best practices in responding to those threats (such as communication, coordination and information sharing) should be applied to responding to IUU fishing. Levels of penalties against participants in IUU fishing activities and criminal networks should be substantial enough to act as deterrents. All vessels, companies and individuals convicted of IUU activities should be barred from benefitting from public aid.

- **Mandatory traceability system.** A regime of exchanging trustworthy documentation connected to the actual flow – and trade – of fish and fish products should be established, including mandatory compliance checks on legal documentation all along the value chain. With this focus, products derived from IUU fishing can be isolated from the regular market. A new mandatory system for traceability and a provision for buyers of fish and fish products to ensure and prove that their fish and fish products come from legitimate sources should be established.

- **Certification and market-based schemes.** Along with their suppliers seafood companies have developed and implemented voluntary, market-based schemes to remove IUU fish from the supply chain. Important best market practices include eco-labeling certifiable products, catch and trade documentation schemes, maintaining a fish transaction data base, publishing lists of good and bad entities, setting corporate standards and audit procedures and partnering with the MSC or other independent organizations to maintain credibility. The European frozen fish trade organization AIPCE standards could be used as a model for other seafood businesses.

- **Fiscal policy and quota allocation.** Governments should avoid fiscal policies and quota allocation mechanisms that might give incentives for IUU fishing. Governments should consider how overcapacity and economic inefficiency can lead to IUU activities and design their policies as to avoid such outcomes.

- **Demand for certified seafood.** Both consumers and retailers should be more proactive in requesting confirmation that fish can be traced through the value chain. When dining at restaurants, customers should be conscientious about asking for information about the origin of seafood on the menu. Like supermarkets, restaurants can potentially increase business and at the same time demonstrate social responsibility by promoting the fact that they serve only certified fish.

- **Precautionary stock management.** In fisheries with indications of IUU activities, more precautionary management measures must be adopted. IUU estimates must be included in stock assessments and when deciding TAC and other management measures.

# Glossary of terms

| | |
|---|---|
| **bacalhau** | Salted and dried cod. Literally means “cod” in Portuguese. Important ingredient in Portuguese and Brazilian food. |
| **the Barents region** | Northern parts of Norway, Sweden and Finland and northwestern parts of Russia, or in a more narrow sense – the Barents Sea and the territories bordering on it. |
| **coastal state** | State that border ocean areas, with sovereign rights under the United Nations Convention on the Law of the Sea. |
| **Danish seine** | A large, funnel-shaped fishnet with long wings and very long ropes set out on the sea bed and hauled to a vessel in the open sea. |
| **exclusive economic zone** | The UNCLOS defines the exclusive economic zone as a zone beyond and adjacent to the territorial sea in which a coastal state has sovereign rights for the purpose of exploring and exploiting, conserving and managing the natural resources. The outer limit of the exclusive economic zone shall not exceed 200 nautical miles from the baselines from which the breadth of the territorial sea is measured. |
| **flag of convenience:** | A term applied to ships registered in certain small countries by owners who are not nationals of those countries. Such owners often choose to register abroad in order to avoid the financial charges, survey requirements etc. imposed by their own administrations. |
| **flag state** | State that register fishing vessels and authorize vessels to fly their flags. |
| **nautical mile** | A nautical mile equals 1,852 meters. |
| **port state:** | State to whose ports fishing or transport vessels come to discharge catch or cargo. |
| **Russian Far East** | Eastern parts of the Russian Federation, between Siberia and the Pacific Ocean. For the purpose of this report defined as the regions bordering on the Pacific and waters adjoined to the Pacific (the administrative units of Primorsky, Khaborovsk, Kamchatka, Magadan, Sakhalin, Koryak and Chukotka). |
| **spawning stock biomass** | The total weight of fish in a specific stock that are old enough to spawn. Indication for medium and long term viability of the stock. |
| **surimi** | Fish paste produced by mincing, steaming and then shaping the flesh of fish. The resulting product has the texture as if it was a whole natural product. |
| **third countries** | For the purpose of this report, countries which are not direct parties to an bilateral or multilateral agreement. In the Barents Sea, Norway and Russia manage the fisheries on a bilateral basis. Other countries with fishing rights in the area are termed third countries. |
| **transshippers** | Vessels used to transport cargo off loaded from one ship or other means of conveyance to another. For the purpose of this report, cargo vessels engaged in shipment of frozen fish from fishing vessels at sea to one or several ports. |

| | |
|---|---|
| **trawl** | Towed net consisting of a cone-shaped body, closed by a bag or codend and extended at the opening by wings. It can be used on the bottom or in midwater (pelagic). |
| **total allowable catch** | Total catch allowed for a resource in a specific period (usually a year), allocated between a number of stakeholders. |
| **whitefish** | Term used by the fish industry for a number of fish species utilized as food for human consumption. There is no full consensus on the topic, but the term normally include Alaska pollock, Atlantic and Pacific cod, saithe, haddock, hoki and various species of redfish and hake as the most important wild catch species. May also include aquaculture freshwater species. |

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# Appendix 1

**Northeast Arctic cod. Catch by country in the Barents Sea 1961-2006.** (All figures in metric tonnes)

**Table 3.4.1.2** North-East Arctic COD. Nominal catch (t) by countries
(Sub-area I and Divisions IIa and IIb combined, data provided by Working Group members.)

| Year | Faroe Islands | France | German Dem.Rep. | Fed.Rep. Germany | Norway | Poland | United Kingdom | Russia[2] | | Others | Total all countries |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1961 | 3 934 | 13 755 | 3 921 | 8 129 | 268 377 | - | 158 113 | 325 780 | | 1 212 | 783 221 |
| 1962 | 3 109 | 20 482 | 1 532 | 6 503 | 225 615 | - | 175 020 | 476 760 | | 245 | 909 266 |
| 1963 | - | 18 318 | 129 | 4 223 | 205 056 | 108 | 129 779 | 417 964 | | - | 775 577 |
| 1964 | - | 8 634 | 297 | 3 202 | 149 878 | - | 94 549 | 180 550 | | 585 | 437 695 |
| 1965 | - | 526 | 91 | 3 670 | 197 085 | - | 89 962 | 152 780 | | 816 | 444 930 |
| 1966 | - | 2 967 | 228 | 4 284 | 203 792 | - | 103 012 | 169 300 | | 121 | 483 704 |
| 1967 | - | 664 | 45 | 3 632 | 218 910 | - | 87 008 | 262 340 | | 6 | 572 605 |
| 1968 | - | - | 225 | 1 073 | 255 611 | - | 140 387 | 676 758 | | - | 1 074 084 |
| 1969 | 29 374 | - | 5 907 | 5 543 | 305 241 | 7 856 | 231 066 | 612 215 | | 133 | 1 197 226 |
| 1970 | 26 265 | 44 245 | 12 413 | 9 451 | 377 606 | 5 153 | 181 481 | 276 632 | | - | 933 246 |
| 1971 | 5 877 | 34 772 | 4 998 | 9 726 | 407 044 | 1 512 | 80 102 | 144 802 | | 215 | 689 048 |
| 1972 | 1 393 | 8 915 | 1 300 | 3 405 | 394 181 | 892 | 58 382 | 96 653 | | 166 | 565 287 |
| 1973 | 1 916 | 17 028 | 4 684 | 16 751 | 285 184 | 843 | 78 808 | 387 196 | | 276 | 792 686 |
| 1974 | 5 717 | 46 028 | 4 860 | 78 507 | 287 276 | 9 898 | 90 894 | 540 801 | | 38 453 | 1 102 434 |
| 1975 | 11 309 | 28 734 | 9 981 | 30 037 | 277 099 | 7 435 | 101 843 | 343 580 | | 19 368 | 829 377 |
| 1976 | 11 511 | 20 941 | 8 946 | 24 369 | 344 502 | 6 986 | 89 061 | 343 057 | | 18 090 | 867 463 |
| 1977 | 9 167 | 15 414 | 3 463 | 12 763 | 388 982 | 1 084 | 86 781 | 369 876 | | 17 771 | 905 301 |
| 1978 | 9 092 | 9 394 | 3 029 | 5 434 | 363 088 | 566 | 35 449 | 267 138 | | 5 525 | 698 715 |
| 1979 | 6 320 | 3 046 | 547 | 2 513 | 294 821 | 15 | 17 991 | 105 846 | | 9 439 | 440 538 |
| 1980 | 9 981 | 1 705 | 233 | 1 921 | 232 242 | 3 | 10 366 | 115 194 | | 8 789 | 380 434 |
| | | | | | | **Spain** | | | | | |
| 1981 | 12 825 | 3 106 | 298 | 2 228 | 277 818 | 14 500 | 5 262 | 83 000 | | - | 399 037 |
| 1982 | 11 998 | 761 | 302 | 1 717 | 287 525 | 14 515 | 6 601 | 40 311 | | - | 363 730 |
| 1983 | 11 106 | 126 | 473 | 1 243 | 234 000 | 14 229 | 5 840 | 22 975 | | - | 289 992 |
| 1984 | 10 674 | 11 | 686 | 1 010 | 230 743 | 8 608 | 3 663 | 22 256 | | - | 277 651 |
| 1985 | 13 418 | 23 | 1 019 | 4 395 | 211 065 | 7 846 | 3 335 | 62 489 | | 4 330 | 307 920 |
| 1986 | 18 667 | 591 | 1 543 | 10 092 | 232 096 | 5 497 | 7 581 | 150 541 | | 3 505 | 430 113 |
| 1987 | 15 036 | 1 | 986 | 7 035 | 268 004 | 16 223 | 10 957 | 202 314 | | 2 515 | 523 071 |
| 1988 | 15 329 | 2 551 | 605 | 2 803 | 223 412 | 10 905 | 8 107 | 169 365 | | 1 862 | 434 939 |
| 1989 | 15 625 | 3 231 | 326 | 3 291 | 158 684 | 7 802 | 7 056 | 134 593 | | 1 273 | 332 481 |
| 1990 | 9 584 | 592 | 169 | 1 437 | 88 737 | 7 950 | 3 412 | 74 609 | | 510 | 187 000 |
| 1991 | 8 981 | 975 | **Greenland** | 2 613 | 126 226 | 3 677 | 3 981 | 119 427 | [3] | 3 278 | 269 158 |
| 1992 | 11 663 | 2 | 3 337 | 3 911 | 168 460 | 6 217 | 6 120 | 182 315 | | **Iceland** | 1 209 | 383 234 |
| 1993 | 17 435 | 3 572 | 5 389 | 5 887 | 221 051 | 8 800 | 11 336 | 244 860 | | 9 374 | 3 907 | 531 611 |
| 1994 | 22 826 | 1 962 | 6 882 | 8 283 | 318 395 | 14 929 | 15 579 | 291 925 | | 36 737 | 28 568 | 746 086 |
| 1995 | 22 262 | 4 912 | 7 462 | 7 428 | 319 987 | 15 505 | 16 329 | 296 158 | | 34 214 | 15 742 | 739 999 |
| 1996 | 17 758 | 5 352 | 6 529 | 8 326 | 319 158 | 15 871 | 16 061 | 305 317 | | 23 005 | 14 851 | 732 228 |
| 1997 | 20 076 | 5 353 | 6 426 | 6 680 | 357 825 | 17 130 | 18 066 | 313 344 | | 4 200 | 13 303 | 762 403 |
| 1998 | 14 290 | 1 197 | 6 388 | 3 841 | 284 647 | 14 212 | 14 294 | 244 115 | | 1 423 | 8 217 | 592 624 |
| 1999 | 13 700 | 2 137 | 4 093 | 3 019 | 223 390 | 8 994 | 11 315 | 210 379 | | 1 985 | 5 898 | 484 910 |
| 2000 | 13 350 | 2 621 | 5 787 | 3 513 | 192 860 | 8 695 | 9 165 | 166 202 | | 7 562 | 5 115 | 414 870 |
| 2001 | 12 500 | 2 681 | 5 727 | 4 524 | 188 431 | 9 196 | 8 698 | 183 572 | | 5 917 | 5 225 | 426 471 |
| 2002 | 15 693 | 2 934 | 6 419 | 4 517 | 202 559 | 8 414 | 8 977 | 184 072 | | 5 975 | 5 484 | 445 045 |
| 2003 | 19 427 | 2 921 | 7 026 | 4 732 | 191 977 | 7 924 | 8 711 | 182 160 | | 5 963 | 6 149 | 436 990 |
| 2004 | 19 226 | 3 621 | 8 196 | 6 187 | 212 117 | 11 285 | 14 004 | 201 525 | | 7 201 | 6 082 | 489 445 |
| 2005 | 16 273 | 3 491 | 8 135 | 5 848 | 207 825 | 9 349 | 10 744 | 200 077 | | 5 874 | 7 660 | 475 276 |
| 2006 [1] | 16 480 | 3 834 | 8 164 | 3 769 | 201 185 | 9 219 | 10 594 | 203 775 | | 5 915 | 6 261 | 469 197 |

[1] Provisional figures.
[2] USSR prior to 1991.
[3] Includes Baltic countries.

*Source: ICES 2007, table 3.4.1.2.*

# Appendix 2

**Historical catch of Alaska pollock in the Western, Central and Eastern Bering Sea 1977-2004.** (All figures in metric tonnes)

| Year | Olyotorskiy-Karagin (W of 170E) | Navarin Region (E of 170E) | Donut Hole | Bogoslof | Aleutian Region | Eastern Bering Sea | Total Bering Sea |
|---|---|---|---|---|---|---|---|
| 1977 | 265,000 | | | | 7,625 | 978,370 | 1,250,995 |
| 1978 | 417,000 | | | | 6,282 | 979,431 | 1,402,713 |
| 1979 | 546,000 | | | | 9,504 | 935,714 | 1,491,218 |
| 1980 | 825,000 | | | | 58,156 | 958,280 | 1,841,436 |
| 1981 | 1,133,000 | | | | 55,516 | 973,502 | 2,162,018 |
| 1982 | 976,000 | | | | 57,978 | 955,964 | 1,989,942 |
| 1983 | 1,006,000 | | | | 59,026 | 981,450 | 2,046,476 |
| 1984 | 252,000 | 503,000 | 181,200 | | 81,834 | 1,092,055 | 2,110,089 |
| 1985 | 134,000 | 488,000 | 363,400 | | 58,730 | 1,139,676 | 2,183,806 |
| 1986 | 297,000 | 570,000 | 1,039,800 | | 46,641 | 1,141,993 | 3,095,434 |
| 1987 | 349,000 | 463,000 | 1,326,300 | 377,436 | 28,720 | 859,416 | 3,403,872 |
| 1988 | 475,000 | 852,000 | 1,395,900 | 87,813 | 30,000 | 1,228,721 | 4,069,434 |
| 1989 | 345,000 | 684,000 | 1,447,600 | 36,073 | 15,531 | 1,229,600 | 3,757,804 |
| 1990 | 582,000 | 232,000 | 917,400 | 151,672 | 79,025 | 1,455,193 | 3,417,290 |
| 1991 | 326,000 | 178,000 | 293,400 | 264,760 | 78,649 | 1,217,301 | 2,358,110 |
| 1992 | 282,000 | 315,000 | 10,000 | 160 | 48,745 | 1,164,440 | 1,820,345 |
| 1993 | 288,000 | 389,000 | 1,957 | 885 | 54,074 | 1,198,790 | 1,932,706 |
| 1994 | 204,000 | 288,900 | NA | 556 | 53,224 | 1,197,224 | 1,743,904 |
| 1995 | 79,000 | 427,300 | Trace | 264 | 60,184 | 1,169,614 | 1,736,362 |
| 1996 | 34,000 | 753,000 | Trace | 389 | 26,597 | 1,102,579 | 1,916,565 |
| 1997 | 30,000 | 735,000 | Trace | 163 | 24,721 | 1,036,789 | 1,826,673 |
| 1998 | 25,000 | 719,000 | Trace | 8 | 22,053 | 1,058,288 | 1,824,349 |
| 1999 | 46,000 | 639,000 | Trace | 1 | 965 | 889,561 | 1,575,527 |
| 2000 | 15,000 | 507,000 | Trace | 29 | 1,174 | 1,019,067 | 1,542,270 |
| 2001 | 25,000 | 526,000 | 0 | 61 | 788 | 1,247,305 | 1,799,154 |
| 2002 | 8,000 | 370,000 | 0 | 22 | 1,134 | 1,331,416 | 1,710,572 |
| 2003 | 14,600 | 411,200 | 0 | 24 | 1,653 | 1,491,356 | 1,918,833 |
| 2004 | 6,200 | 424,500 | 0 | 0 | 1,150 | 1,493,394 | 1,925,244 |
| 2005 | 4,400 | 446,800 | 0 | 0 | 1,622 | 1,483,398 | 1,936,220 |
| 2006* | | 211,000 | 0 | 0 | 1,599 | 1,097,872 | |

* US data through 19 August 2006: Russian Federation data through 15 August, 2006

**Sources of Data**

U.S. Data, 1979-1992 from Pollock stock assessment document at 7th Annual Conference
1993-2006 data from web site: www.fakr.noaa.gov
Navarin Data, 1994-2001 (from Russian pollock stock assessment document presented by the Russian Party at the 6th annual conference in Poland)
Navarin Data, 1984-1993 (from The Aleutian Basin Pollock Stock in 2001 written by TINRO and presented at 6th annual conference)

*Source: Report of the Eleventh Annual Conference of the Parties to the Conservation and Management of Pollock Resources in the Central Bering Sea. Supporting Information from the United States Delegation. Attachment 3, page 1. September 5-8 2006. Warsaw.*

# Appendix 3

**Blacklists/lists of IUU vessels**

- **CCAMLR:**
  The Convention on the Conservation of Antarctic Marine Living Resources (CCAMLR) IUU list:
  http://www.ccamlr.org/pu/e/sc/fish-monit/iuu-vess.htm

- **IATTC:**
  The Inter-American Tropical Tuna Commission (IATTC) IUU list:
  http://www.iattc.org/vesselregister/IUUENG.html

- **ICATT:**
  The International Commission for the Conservation of Atlantic Tunas IUU list: http://www.iccat.int/IUU.htm

- **IOTC:**
  The Indian Ocean Tuna Commission (IOTC) IUU list: http://www.iotc.org/English/iuu/search.php

- **NAFO:**
  The Northwest Atlantic Fisheries Organization (NAFO) IUU list:
  http://www.nafo.int/about/frames/about.html

- **NEAFC:**
  The Northeast Atlantic Fisheries Commission (NEAFC) black lists:
  - http://www.neafc.org/measures/iuu-a-list.htm
  - http://www.neafc.org/measures/iuu-b.htm

- **Norway:**
  Norwegian blacklist: http://fiskeridirektoratet.no/fiskeridir/english/norwegian_black_list

# Appendix 4

**AIPEC-CEPs Letter of warranty to be signed by suppliers of fish to AIPCE-CEP members.**

***Гарантийное письмо*/Letter of Warranty**

***Документ, подтверждающий происхождение вылова*/**

**(Fish capture traceability document)**

***Заявление Поставщика*:**

*Четыре нижеследующих заявления должны быть подтверждены собственником рыболовного судна или руководителем компании – собственника судна.*

The following four statements are to be testified by the owner of the fishing vessel or a senior executive officer of the company which owns the fishing vessel.

*Название судна*/Vessel name: _____
*Позывной судна*/Vessel number: _____

1. *Я подтверждаю, что по имеющейся у меня информации, все сырье, поставленное с этого судна, полностью соответствует требованиям национального законодательства и международного права в области вылова, перегрузки и выгрузки рыбы.*

   I hereby confirm that to the best of my knowledge, all materials supplied by this vessel conform fully to national and international regulation[1] governing the capture, transshipment and landing of fish.

2. *Я осознаю, что обязан постоянно следить за изменениями законодательства, которое регулирует вопросы, связанные с ведением моего бизнеса, и обеспечивать полное соответствие этого бизнеса новым нормам или изменениям в существующих нормах.*

   I understand that I have a responsibility to maintain an up to date state of knowledge regarding the legislation which affects the operation of my business and to ensure that this business remains fully compliant in the event of the introduction of new regulations or any changes to existing regulations.

3. *Доказательства соответствия законодательству будут для проверки представителю компании-покупателя, членам AIPCE или уполномоченным ими аудиторам. Я понимаю, что отказ от подписания данной декларации или отказ от предоставления доказательств легального происхождения приведет к исключению из числа поставщиков сырья для рыбообрабатывающих предприятий-членов AIPCE.*

   Evidence of legal compliance will be made available to representatives of the primary purchasing company, members of AIPCE or their nominated auditors for inspection purposes. I understand that failure to sign this declaration or to produce sufficient assurance of legality will lead to delisting as a supplier of fish raw materials to primary processing businesses supplying AIPCE members.

4. *Я понимаю, что AIPCE требует того, что все рыбное сырье, должно добываться и выгружаться в соответствии с соответствующим национальным законодательством и нормами международного права, регулирующими эти виды деятельности, и любое разбирательство по подозрению в нарушении таких норм, или привлечения к ответственности в связи с нарушением этих правил органами, обеспечивающими соблюдение исполнения, должно сообщаться первому покупателю. Сокрытие информации о любом имеющемся разбирательстве по поводу нарушения действующих норм приведет к исключению из списка поставщиков членам AIPCE.*

   I understand that AIPCE requires all fish raw materials to be captured and landed in accordance with the relevant national and international legislation governing these practices and any allegation or conviction of a breach of these regulations by an enforcement authority must be communicated to the primary purchasing company. Failure to disclose any on-going investigation into a regulatory breach will lead to delisting as a supplier of raw materials which are to be purchased by AIPCE members.

5. *Я разрешаю властям предоставлять выше упомянутую информацию по запросам покупателей.*
I accept that the Authorities disclose the information above-mentioned to the buyer upon request.

***Подпись*/Signature:**
*От имени компании (указать название)*[2]/
Signed on behalf of (state company)[2] _____
*Имя*/ *Должность*/
Name: _____ Position: _____

*Подпись*/ *Дата*/
Signature: _____ Date: _____

***Примечания*/Notes**
[1] *Здесь представлен примерный перечень законодательной базы в отношении некоторых объектов регулирования, которую используют члены AIPCE для оценки соблюдения продавцом требований законодательства. Оценка членами AIPCE (или уполномоченными ими аудиторами) соблюдения законодательства будет включать эти позиции, но не обязательно ограничена ими.*
The following is an outline and examples of the regulatory framework considered by AIPCE members as satisfaction of the catcher's obligation for legal compliance. The assessment of legal compliance by AIPCE members or their nominated auditors will be inclusive of, but not limited to these factors.

a) *Национальное законодательство (государство флага рыболовного судна)*/ National Legislation (for the flag nation of the catching vessel)

- *Соблюдение законно установленного ОДУ или выделенной квоты*/ Compliance with legislative TAC or quota allocation
- *Ограничение усилия (например, дней в море)* /
  Effort limitation (e.g. days at sea)
- *Полное и достоверное документирование и документирование операций по выгрузке*/ Full and accurate record keeping and landing documentation
- *Использование системы слежения, основанной на GPS или системе «черный ящик»*/ Use of GPS or 'blue box' vessel monitoring systems
- *Соблюдение мер технического регулирования природоохранного назначения*/ Compliance with legislative technical conservation measures
  - *Размер ячеи, комбинация ячеи разных размеров и конструкция сети*/ Mesh sizes, mesh size combinations and net configuration
  - *Состав улова*/ Catch composition
  - *Технологии минимизации прилова, такие как* BACOMA/
    By-catch minimisation technologies such as BACOMA
  - *Размерный ряд выгружаемой на берег рыбы*/ Landing sizes
  - *Соблюдение ограничений по районам вылова и зонам, закрытым для рыболовства*/ Observance of restricted areas and no take zones
- *Правил, применяемых в отношении перегрузок продукции в море*/ Regulations governing the practice of transshipment of product whilst at sea.

b) *Международные нормы*/ International Legislation

- *Особые условия, предусмотренные в двусторонних договорах о сотрудничестве в области рыболовства между прибрежными государствами и другими странами, которые устанавливают общие правила доступа судов в воды этих государств* / The specific conditions laid down in bilateral fisheries agreements between the catching nation and other countries which establish the general framework for the access of fleets to the waters of these countries;
- *Конвенция ООН по морскому праву 1982 г.*/ The 1982 UN Convention on the Law of the Sea;
- *Соглашение о содействии соблюдению международных мер по сохранению и управлению рыболовными судами в открытом море (ФАО) 1993 г.* / The 1993 FAO Agreement to promote Compliance with International Conservation and Management Measures by Fishing Vessels on the High Seas;
- *Соглашение об осуществлении положений Конвенции ООН по морскому праву от 10 декабря 1982 г., которые касаются сохранения трансграничных рыбных запасов и запасов далеко мигрирующих рыб и управления ими* / The 1995 UN Agreement for the Implementation of the Provisions of the 1982 UN Convention on the Law of the Sea, relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks.

[2] *Лицо, подписавшее документ, должно иметь статус руководителя, имеющего соответствующие права и обязанности в отношении судна-поставщика или компании, в собственности которой находится это судно* /

The signatory of this document must be an executive officer with legal responsibility and accountability for the supplying vessel or the company which owns that vessel.

| | |
|---|---|
| *ИНСТРУКЦИИ ПО ОСУЩЕСТВЛЕНИЮ КОНТРОЛЯ*/<br>**CONTROL INSTRUCTIONS** | |
| *УЧЕТ ПРОМЫСЛОВЫХ ОПЕРАЦИЙ*/<br>**DOCUMENTATION OF FISHERY** | |
| *Все импортеры / поставщики*[1] *должны соблюдать изложенные ниже правила*:<br>All importers / suppliers[1] must act according to the below points: | |
| 1. *Товары* / Goods | *Любая партия трески или пикши, например б/г потрошеная, охлажденная, морская заморозка и продукт, соответствующий стандарту IQF*/ Every delivery of cod and haddock, for example, h&g, interleaved, blocks and IQF products coming from Russian vessels. |
| 2. *Требования – Рыболовные и транспортные суда*/ Demands - Fishing & transport vessels | 1.*Вся рыба должна быть выловлена легально в соответствии с осведомленностью поставщика и в пределах юридически установленных квот* / All fish must be caught legally according to the supplier's knowledge and under legal given quotas<br><br>2.*Информация об улове*[2] *должна быть зафиксирована и предоставлена российским властям* / Documentation of catch[2] must be recorded and reported to the Russian authorities.<br><br>3.*Перегрузка в море допускается только с рыболовного судна на транспорт под национальным флагом. Удобные флаги не приемлемы* / Transshipment at sea only accepted when fishing and transport vessel is sailing under national flag. Flag of convenience is not accepted.<br><br>4.*Судно и транспорт не должны находится в чёрном списке НЕАФК* (www.neafc.org), *НАФО* (http://www.nafo.int/ ) *или Норвежского директората по рыболовству* (http://www.fiskeridir.no/fiskeridir/english)/ The vessel and the transport vessel must not be black listed by NEAFC (www.neafc.org ), NAFO (http://www.nafo.int/ ) or the Norwegian Directory of Fishery (http://www.fiskeridir.no/fiskeridir/english ). |
| 3. *Регистрация в портах ЕС/ЕФТА и/или порту Российской Федерации*/ EU / EFTA port registration and/or Russian port | *Вся рыба должна пройти через одобренный ЕС/ЕФТА для импорта и портового контроля порт или российский порт в сопровождении официальных документов с отметками уполномоченных органов. Что касается портов ЕС, то поставщик должен предоставить документы, подтверждающие его намерение осуществить выгрузку в порту, который прошел аттестацию Европейской Комиссии в рамках «Отчета о пограничной инспекции» без существенных замечаний.*<br><br>*Вышеизложенное рассматривается как минимально необходимые требования, при этом предпочтение отдается выгрузкам в портах, которые сопровождаются передачей информации властям Норвегии. Более подробно см. Соглашение о намерениях* (http://www.dep.no/fkd/english/news/news/047041-070142/dok- |

| | |
|---|---|
| | bn.html)<br><br>All fish has to pass through EU/EFTA port approved for import and fishery control or a Russian port followed by officially approved and stamped documentation. With regard to EU ports the supplier must provide a documentation that the ports where they plan to discharge have been subject to a "Border Inspection Report" carried out by the European Commission and that the inspection has been passed without any major remarks.<br><br>The above is considered a minimum requirement as it is preferred that all landings take place in ports which exchange data with the Norwegian authorities. Please see Memorandum of Understanding http://www.dep.no/fkd/english/news/news/047041-070142/dok-bn.html |
| 4. *Контрольная документация* / Control documentation | *Поставщик должен иметь возможность представить по требованию отчет, проверенный независимым экспертом (назначенным бухгалтером или законным представителем), который будет свидетельствовать о том, что по данным учета поставщика, бухгалтерским документам, деловой переписке и ситуации в целом покупатель[3] не получил рыбу, выловленную сверх квоты.*<br><br>On demand the supplier must be able to present a third party audited report from either the supplier's public accountant o attorney at law stating that the buyer[3] according to the supplier's files, bookkeeping, business routines and the circumstances in general has not received fish exceeding the quota.<br>In connection with spot checks, the supplier must also be able to confirm that according to the supplier's knowledge the fishing vessel/ship owners have not exceeded their quota. Furthermore the origin and the legality of the fish provided by the supplier to the buyer is proved in the following way:<br><br>1. *Информация по инвойсу, накладной, сертификату соответствия:*<br>- *имя и позывные рыболовного судна, транспортного судна и порта выгрузки*<br>- *дата вылова, объем перегрузки, район вылова, дата выгрузки в порту.*<br>Information on invoice, packing lists, health certificate stating:<br>- name and registration number of fishing vessel, transport vessel and of port of discharging<br>- date of catch, total transshipped quantity, catching area, date of discharge to port.<br>-<br>2. *Декларация поставщика о том, что вылов пойман в пределах квоты данного судна удостоверяется:*<br>- *«Гарантийным письмом», выдаваемым импортеру соответствующей партии. Гарантийное письмо подписывается судовладельцем и направляется первому покупателю/импортеру[4];* |

| | |
|---|---|
| | - *копией коносамента, сертификата соответствия и грузовой декларации.*<br>-<br>Declaration from the supplier that the catch is legally caught within the given quota for the specific vessel documented by:<br>- "Letter of Warranty" given to the importer relating to the specific catch. The Letter of Warranty is signed by the vessel owner and addressed to the first buyer/importer[4]<br>- Copy of Bill of Lading, Health Certificate and Cargo Manifest<br>-<br>3. *В соответствии с законодательством ЕС, о заходе судна должно быть заявлено властям за 72 часа до захода. В российских и/или норвежских портах (не порты ЕС) применяются правила, установленные национальным законодательством.*<br>In accordance with EU legislation the arrival of the vessel must be reported to the authorities 72 hours before arrival. For Russian and/or Norwegian (not EU) ports the legislation of these countries applies. |
| 5. *Контрольные процедуры (импортер) /* Control procedure (importer) | *Удостовериться, что траулеры и транспортные суда не включены в черные списки. Отчет в Норвежский директорат рыболовства должен быть проверен поставщиком Импортер будет выборочно проверять информацию, предоставленную в Норвежский директорат рыболовства*<br>Check that trawlers and transport vessels are not on the black lists<br>The report to the Norwegian Directory of Fishery will be checked by the supplier<br>The importer will randomly check given information with the Norwegian Directory of Fishery |
| 6. *Покупка продукции глубокой переработки/* Purchase of finished products | 1. *Полуфабрикаты для дальнейшей переработки. Переработчик[5] несет ответственность за предоставление указанной выше информации в отношении сырья покупателю или назначенному покупателем аудитору.*<br>Semi-prepared products for further processing.<br>The processor[5] is responsible for presenting the above information on the raw material to the buyer or the buyer's nominated auditor.<br><br>2.*Китай:*<br>*В случае если продукция произведена в Китае, то документация проверяется представителем покупателя в Китае.*<br>China:<br>In case of production in China the documentation is checked by the buyer's representation in China. |

Приложение / Appendix

1. *«Поставщик» - это компания, выступающая в качестве продавца замороженных продуктов переработки или частичной переработки рыбных материалов, полученных из рыбы, пойманной в Баренцевом море судами, зарегистрированными в Российской Федерации (см. Раздел 1 Товары) для компаний – членов AIPCE.*
   'The supplier' is the company which is the vendor of processed or part processed frozen fish materials derived from fish caught in the Barents Sea by vessels registered to the Russian Federation( as described in section 1, Goods) to a business which is represented by AIPCE.

2. *«Улов» - это выгрузка на берег или перегрузка в море, происхождение которой можно проследить до выловившего его рыболовного судна.*
   'The catch' is landing or transshipment traceable to the individual fishing vessel.

3. *«Покупатель» - коммерческая компания, член Ассоциации, представленной на европейском уровне AIPCE.*
   'The buyer' is a commercial company member of an Association represented at European level by AIPCE.

4. *«Импортер» - это покупатель или компания, импортирующая сырье из рыбопродуктов, полученных из рыбы, пойманной в Баренцевом море судами, зарегистрированными в Российской Федерации (см. Раздел 1 Товары) от имени «покупателя» или для перепродажи «покупателю».*
   'The importer' is 'the buyer' or a business importing fish raw materials derived from fish caught in the Barents Sea by vessels registered to the Russian Federation (as described in Section 1, Goods) on behalf of or for the purpose of re-sale to 'the buyer'.

5. *«Переработчик» - это компания, осуществляющая первичную переработку замороженных рыбопродуктов, полученных из пойманной зарегистрированными в Российской Федерации судами в Баренцевом море (см. Раздел 1 Товары), в продукты глубокой переработки или полуфабрикаты, поставляемые «покупателю».*
   'The processor' is the company undertaking the primary conversion of frozen at sea fish raw materials derived from fish caught in the Barents Sea by vessels registered to the Russian Federation( as described in Section 1, Goods) into processed or part processed product as purchased by 'the buyer'.

Примечания:

| | |
|---|---|
| EFTA | European Free Trade Association / ЕФТА |
| AIPCE | Европейская группа переработчиков рыбы |
| IQF | International Quality Food |
| MSC | Marine Stewardship Council / Морской попечительский совет |

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