

HELCOM

Reinforcing oil spill response capacity in the Baltic



Helsinki Commission

Baltic Marine Environment Protection Commission

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HELCOM, reinforcing oil spill response capacity in the Baltic

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HELCOM

The Helsinki Commission (HELCOM), an intergovernmental organization of the nine Baltic Sea coastal countries and the European Community, works to protect the Baltic marine environment from all sources of pollution and to ensure the safety of navigation and efficient response to pollution from shipping in the region.

One of the major subsidiary working groups of the Helsinki Commission - the Response Group (HELCOM RESPONSE) develops measures to ensure swift national and international response to maritime pollution incidents in the Baltic Sea area. The Group prepares and tests international response

capabilities and emergency routines to respond to pollution incidents at sea, as well as co-ordinates aerial surveillance flights and usage of satellites in order to track deliberate pollution from ships.

HELCOM RESPONSE also co-ordinates implementation of a set of measures to further improve emergency capability and response capacity as agreed in the HELCOM Baltic Sea Action Plan, adopted at the HELCOM Ministerial Meeting on 15th of November 2007, in Krakow, Poland.

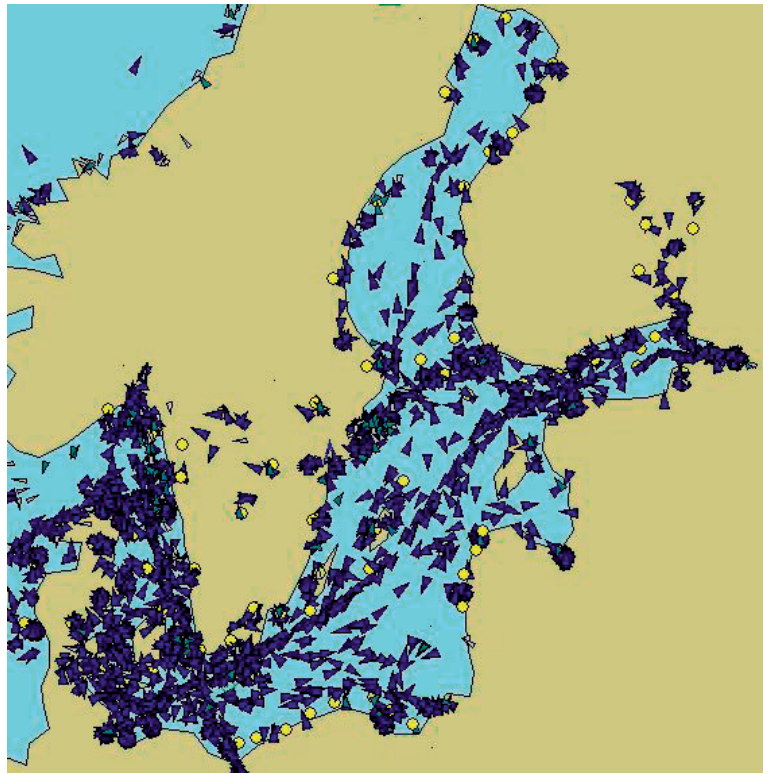


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Monitoring maritime traffic in the Baltic Sea

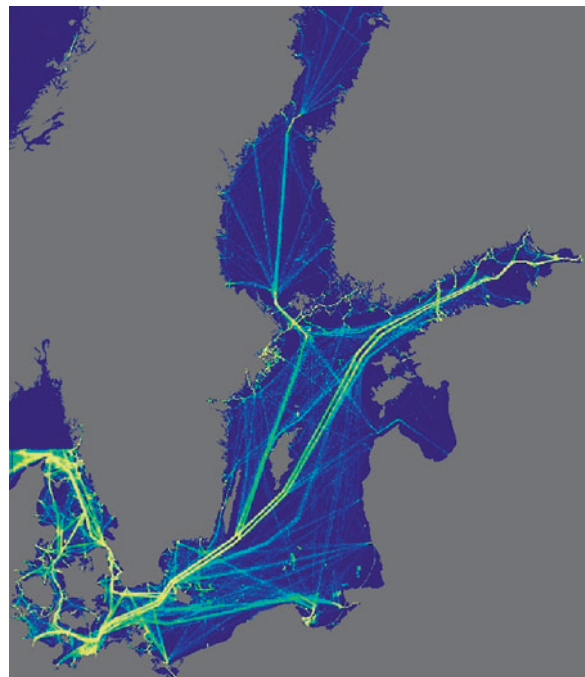
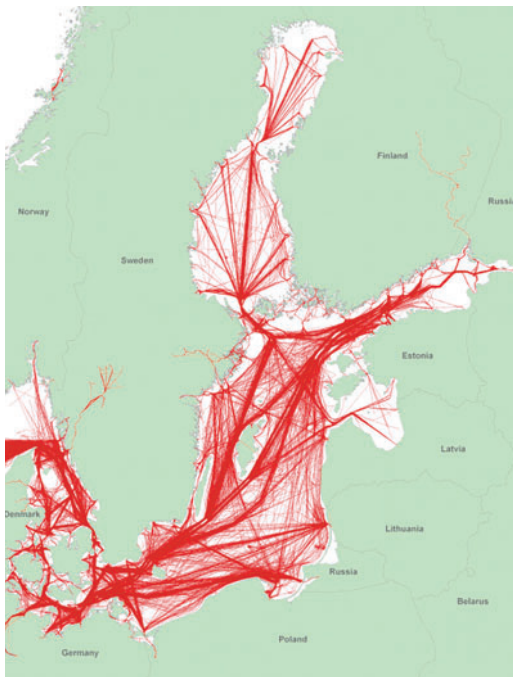
The issue of response to accidents at sea has a high priority within the Baltic Sea region. Very specific hydrographic, chemical and physical conditions make the Baltic Sea extremely sensitive to pollution. The sea's narrow straits and shallow waters, many of which are covered by ice for prolonged periods in winter, make navigation very challenging, and increase the risk of shipping accidents. Any large-scale oil spill could lead to an environmental catastrophe. The risk of such a spill occurring has increased substantially over the last decade, due to the rising number of cargo ships carrying large amounts of fuel, and the constantly increasing volumes of oil transported on the Baltic.

The Baltic Sea today is one of the busiest seas in the world, accounting for up to 15% of the world's cargo transportation. According to the HELCOM Automatic Identification System (AIS) for monitoring maritime traffic, there are about 2,000 ships in the Baltic marine area at any given moment and each month around 3,500-5,000 ships ply the waters of the Baltic Sea. In 2008, about 46% of these ships were cargo vessels, 14% were tankers and 11% were passenger vessels.

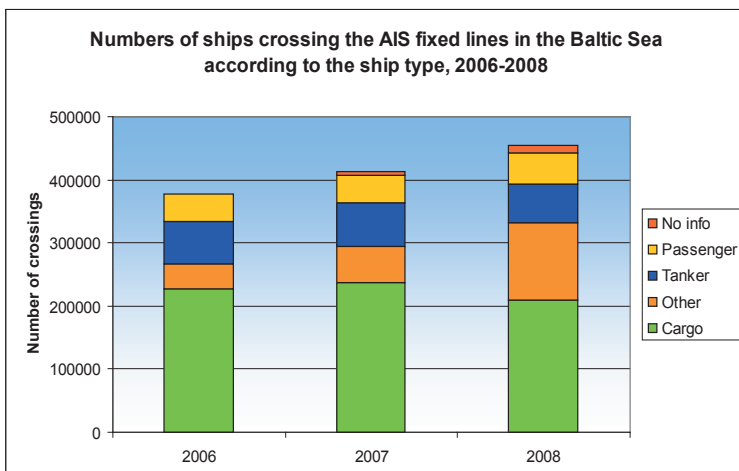


Snapshot of ship traffic in the Baltic Sea on 20 August 2008 (HELCOM AIS)





Traffic on the Baltic Sea during one week in 2008. The red lines are actual ship passages and the green-yellow lines on blue background represent data calculated on a grid, showing the areas of heavy traffic.



The transportation of oil and other potentially hazardous cargoes is growing steeply and steadily. By 2015, a 40% increase is expected in the amounts of oil being shipped on the Baltic, which in 2007 reached more than 170 million tonnes of oil. The use of much bigger tankers is also expected to increase – there will be more tankers in the Baltic carrying 100,000-150,000 tonnes of oil.

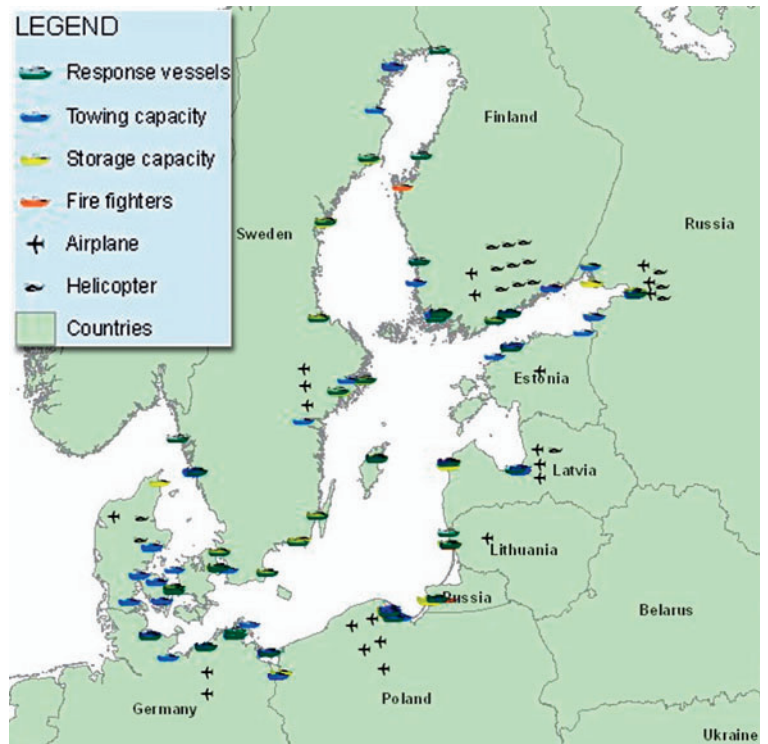
Reinforcing disaster response capacities

HELCOM countries maintain the ability to respond to pollution incidents threatening the marine environment of the Baltic Sea, including adequate equipment, ships and manpower prepared for operations in coastal waters as well as on the high sea.

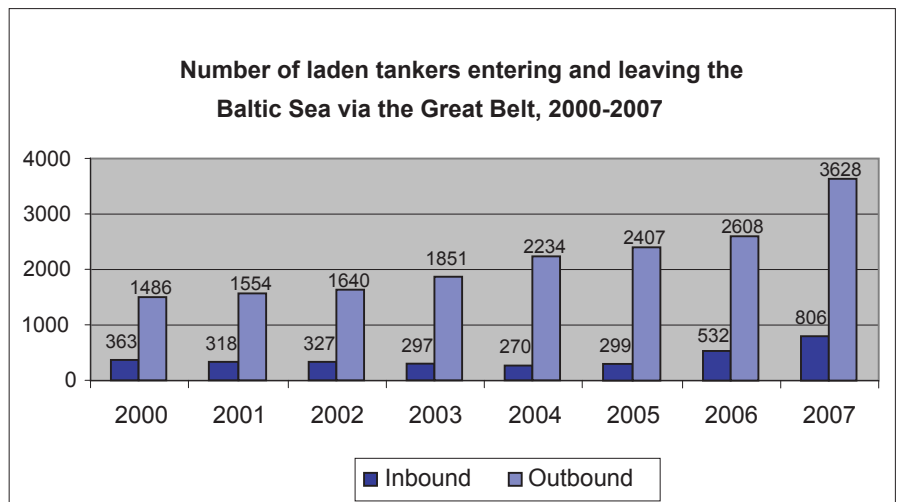
Principles, rules and operational procedures for joint, international response operations have been put in place, including reporting system on accidental spills, requesting and providing assistance as well as solving related financial aspects. These procedures are described in the HELCOM Response Manual, regularly updated by the Response Group. Additionally, bilateral and multilateral plans for a joint response to pollution have been drawn up.

A number of Recommendations in response field have been issued by HELCOM, e.g. concerning development of national ability to respond to spillages of oil and other harmful substances, ensuring adequate emergency capacity and enhancing sub-regional co-operation. For example, due to the sensitive ecological condition of the Baltic Sea area, HELCOM countries agreed that response to oil should take place by the use of mechanical means as far as possible. Response by using dispersants should be limited, sinking agents should not be used at all and absorbents only when appropriate.

The Baltic Sea coastal countries have substantial resources to effectively respond to pollution at sea in the region. Today, the HELCOM fleet has more than 45 oil-combating ships on standby located around the Baltic Sea. These vessels are able to reach any place in the region within several hours of being notified of an oil spill accident. Several more new vessels will be built in the coming years. Additionally, two oil spill recovery vessels are chartered by the European Maritime Safety Agency (EMSA) in the Baltic Sea to top-up the HELCOM response resources.



Response capacities in the Baltic Sea area

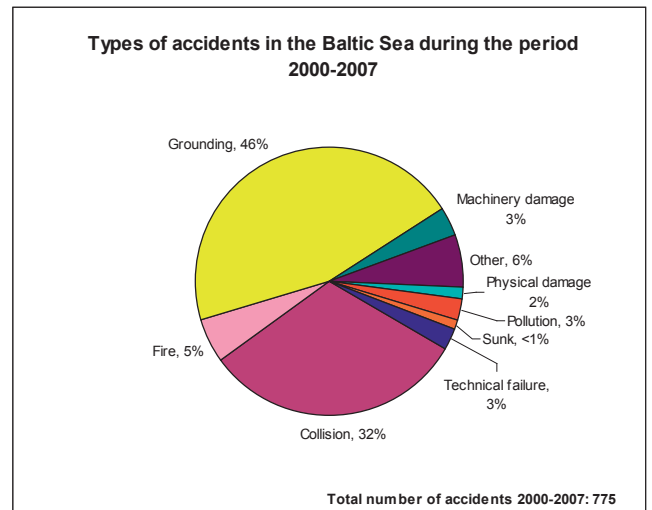


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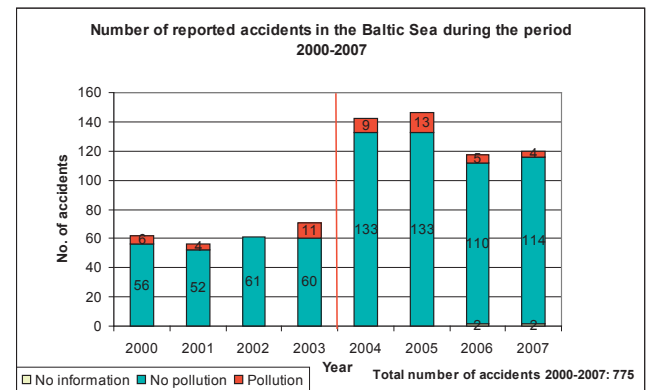
Evaluating risks of shipping accidents

The response system established under the HELCOM umbrella has proved to be efficient in tackling the recent major pollution accidents in the Baltic.

- 1990 "Volgoneft", 700-800 tonnes of waste oil
 - 5 countries and more than 20 ships involved in recovering the oil
 - nearly all oil recovered at sea
- 2001 "Baltic Carrier", 2,700 tonnes of oil
 - 3 countries involved
 - around 50% of oil recovered at sea
- 2003 "Fu Shan Hai", 1,200 tonnes of fuel oil
 - 3 countries involved
 - around 1,100 tonnes of oil recovered at sea



On an average there are about 120 accidents per year in the Baltic. Over the period 2000-2007, an average of 7% of all accidents resulted in some kind of pollution. Groundings are the most common type of accidents accounting for almost a half of all reported cases (46%) during the recent years. The areas where groundings occur most often are the Danish Straits, the Gulf of Finland, especially the Estonian coast, the Åland archipelago area, the Swedish coast of the Baltic Proper, and the sea ports.

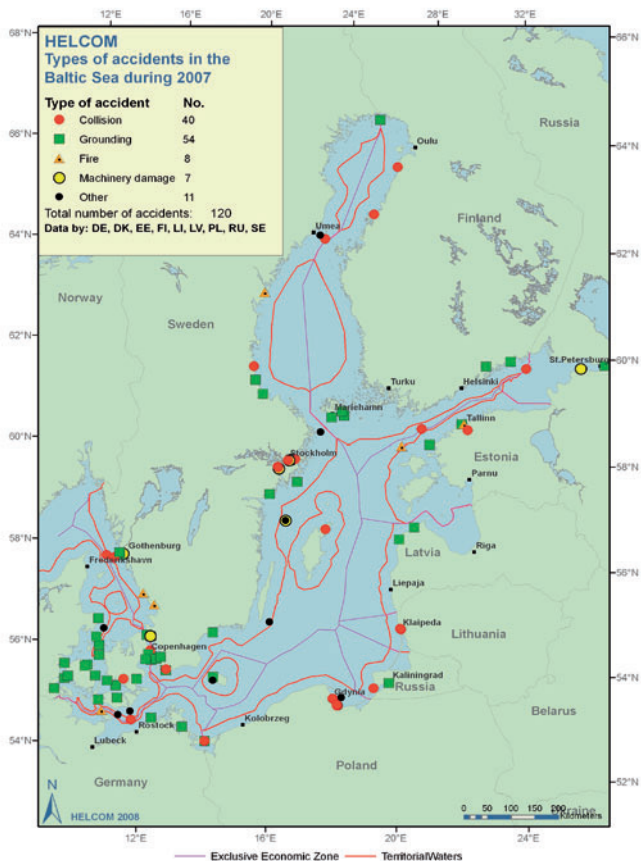


The German container vessel Janra hit a maritime marker in low visibility south of the Åland Islands and capsized on 23 December 2000

Amounting to 40 cases (33%) of all accidents in 2007 and 247 cases (31%) in 2000-2007, collisions became the second most frequent type of shipping accident in the Baltic. The number of reported collisions in 2007 has decreased over the last years. Ship to ship collisions accounted for 38% of all collision cases in 2007 and the rest of the cases were collisions with fixed and/or floating structures, e.g. piers, navigation signs etc.

The approaches to sea ports and the Danish Straits are the most risky areas for ships to collide. Some decrease in the number of collisions can be identified in the southwestern Baltic Sea, including the Danish Straits. In the Gulf of Finland the number of collisions has decreased dramatically compared to previous years. The launch of the HELCOM AIS in 2005, traffic separation schemes and ship reporting systems introduced in the Baltic, e.g. the Gulf of Finland Reporting System (GOFREP), have had a positive effect on the safety of navigation and might have contributed to the reduced number of collisions over the recent years.

There were 117 accidents involving tankers in 2000-2007. Since 2001, when the "Baltic Carrier" accident took place, only 3 of these tanker accidents have resulted in pollution by oil, in all three cases not exceeding one cubic metre.



Sergey Vlasov

Enhancing sub-regional co-operation

Substantial resources to respond to pollution at sea do exist in the Baltic Sea region. However, so far no comprehensive Baltic-wide analysis has been done to check whether the existing emergency and response capacities are sufficient to tackle major spills of oil or hazardous substances. Such analysis is required by the HELCOM Baltic Sea Action Plan and HELCOM Recommendation 28E/12 on sub-regional co-operation in response field and will be done for each sub-region of the Baltic within the BRISK Project (Sub-regional risk of spill of oil and hazardous substances in the Baltic Sea).

Based on the risk assessments, the BRISK Project will identify missing resources and will plan how HELCOM countries could jointly fill in the identified gaps. Additionally, BRISK will facilitate and speed up the process of developing and concluding sub-regional agreements between neighboring countries for joint response operations.

Through these activities the project will substantially and in a concrete way contribute to the development of an appropriate level of stand-by capacity in the whole Baltic Sea area.

Project partners include operational organizations from all the Baltic Sea countries. The Admiral Danish Fleet is acting as a lead partner.

BRISK will run for three years. It is co-financed by the European Union within the Baltic Sea



Region Programme 2007-2013. The total budget amounts to around EUR 3.3 million, with EUR 2.5 million to be allocated from the European Regional Development Fund.



Nikolay Vlasov, HELCOM

Testing readiness to respond to oil spills

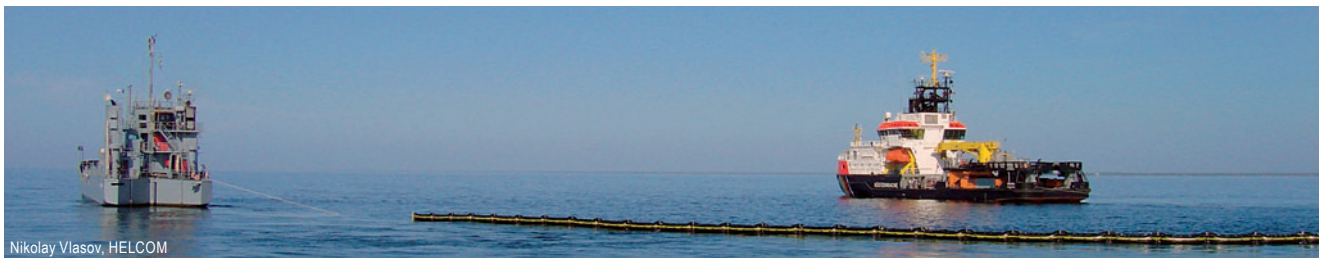
Even though a number of measures to improve the safety of navigation have been enforced in the Baltic, both initiated by HELCOM as well as the International Maritime Organization (IMO), the risk of accidents can never be totally eliminated. Therefore, running training exercises is a key to efficient response preparedness.

Several kinds of exercises are conducted under the HELCOM flag. The most famous ones are the international pollution response exercises BALEX DELTA, started in 1990, which test the alarm procedures and response capacity of the HELCOM Member States to jointly deal with a major oil spill. This operational exercise which involves up to 20 response vessels, as well as helicopters and aircrafts is the largest maritime emergency and counter-pollution drill of its kind in the Baltic Sea area and one of the largest worldwide.

The general objective of the BALEX DELTA is to ensure that every HELCOM country is able to lead a major response operation in its response area. BALEX DELTA exercises take place each year and are hosted by the Baltic Sea countries according to an agreed schedule.



Nikolay Vlasov, HELCOM



Nikolay Vlasov, HELCOM

Host country and the number of Contracting Parties involved in BALEX DELTA exercises since 2000

- 2000 Russia: 5 countries, 12 ships, 1 aircraft
- 2001 Denmark: 7 countries, 11 ships, 2 aircraft
- 2002 Latvia: 6 countries, 18 ships, 2 aircraft
- 2003 Finland: 5 countries, 16 ships
- 2004 Germany: 6 countries, 11 ships, 1 aircraft
- 2005 Sweden: 7 countries, 19 ships, 2 aircraft
- 2006 Poland: 7 countries and EMSA, 23 ships, 3 aircraft
- 2007 Estonia: 6 countries and EMSA, 17 ships, 1 helicopter
- 2008 Russia: 6 countries and EMSA, 18 ships, 2 helicopters



Nikolay Vlasov, HELCOM



Florian Friz

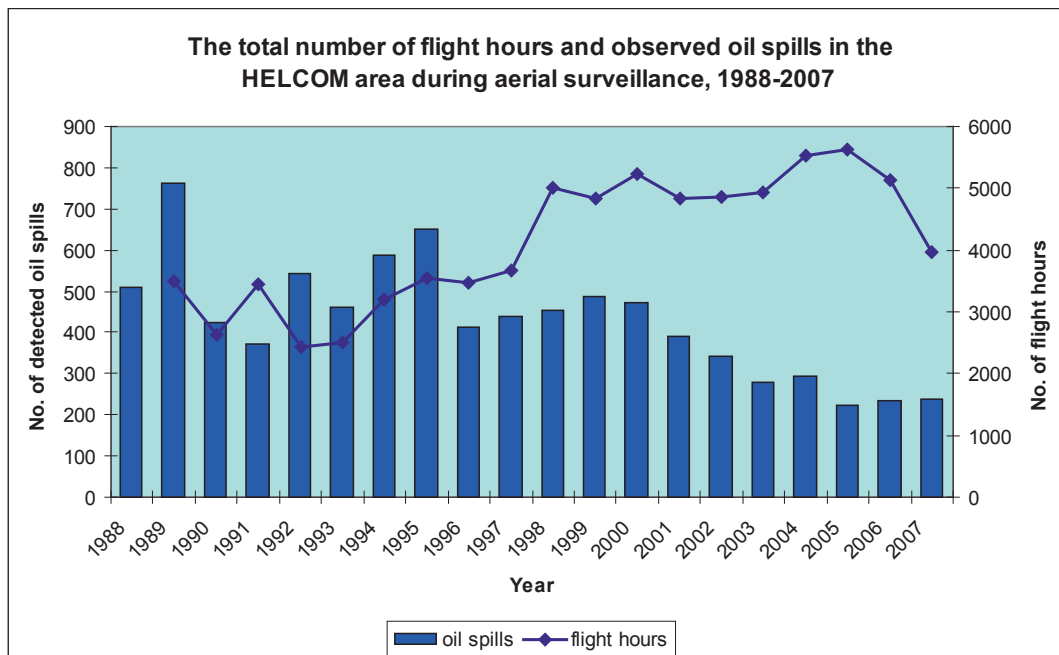
Detecting and prosecuting offenders of anti-pollution regulations

The Baltic Sea States place high priority on the violations of anti-pollution regulations, and on the conviction of any offenders. In order to prevent and detect any breach of discharge regulations, the HELCOM Member states conduct regular national surveillance in their waters, as well jointly undertake co-ordinated surveillance activities to monitor main shipping routes.

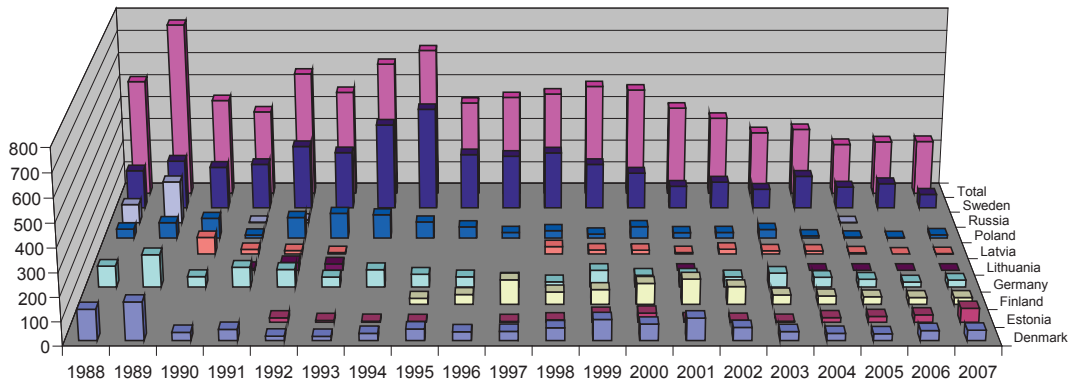
Regular aerial surveillance flights have contributed significantly to the decrease in

discharges because ships are aware that their illicit polluting activities can be detected. Today, the HELCOM aerial surveillance fleet comprises more than 25 aircrafts and helicopters, many of which are equipped with remote sensing equipment such as side-looking airborne radar (SLAR), infrared (IR) and ultraviolet (UV) cameras, photo and video equipment.

238 illicit oil spills were detected during a total of 3,969 hours of surveillance flights conducted by the coastal countries over the Baltic Sea during 2007. Despite the small increase, this is still one of the lowest numbers since 1999 when 488 discharges were detected during 4,883 flight hours.



Number of confirmed oil spills in HELCOM countries waters, 1988-2007



	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Denmark	129	159	34	46	18	17	30	48	36	38	53	87	68	93	54	37	30	28	41	43
Estonia					18	7	4	3		3	10	33	38	11	8	4	19	24	31	58
Finland									26	42	104	53	63	89	107	75	40	36	32	29
Germany	90	139	45	85	76	43	75	55	44	34	23	72	51	51	44	60	42	34	22	30
Lithuania				8	34	28									0		0	0	0	0
Latvia			73	20	15	6					33	18	17	6	21	14	13	5	0	2
Poland	40	69	88	14	92	110	104	72	50	25	33	18	51	24	25	39	10	5	3	15
Russia	82	184		3	13													2		
Sweden	168	212	184	197	278	250	375	445	241	234	249	197	158	98	117	84	143	94	110	61
Total	509	763	424	373	544	461	588	649	413	438	454	488	472	390	344	278	293	224	236	238



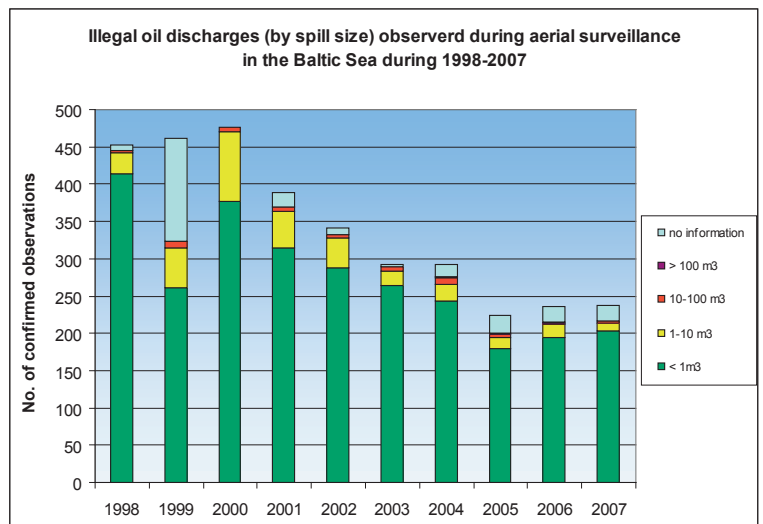
Swedish Coast Guard

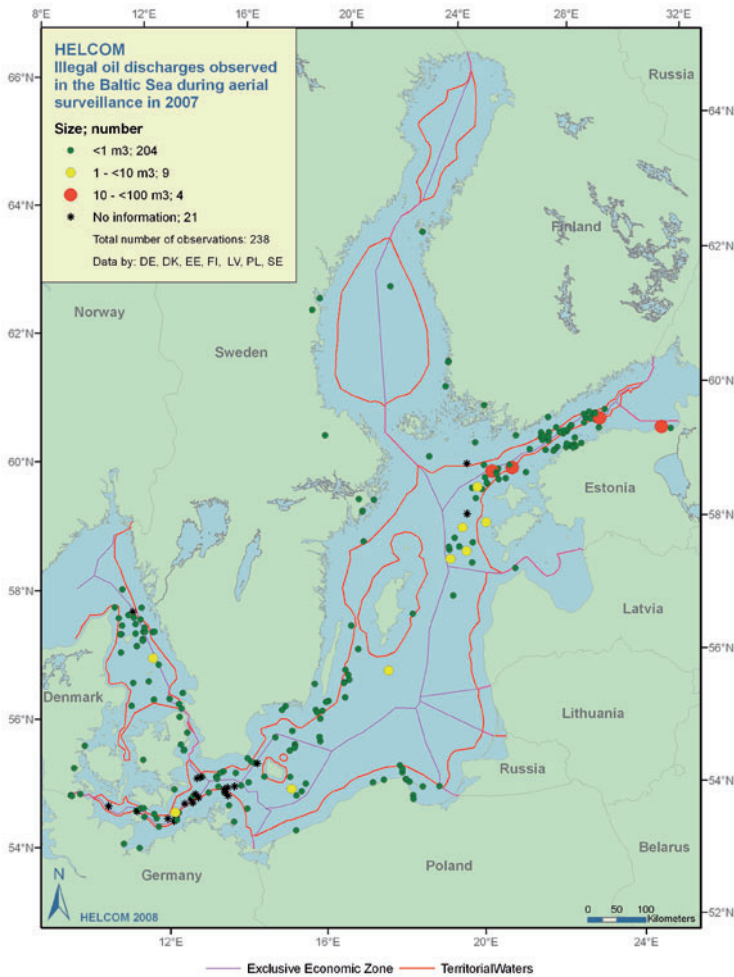
Photo of a detected oil spill

Most of the illegal oil discharges are detected along major shipping routes. Nowadays, majority of the spills are smaller than a cubic metre, or even less than 100 litres.

Additionally, the Baltic Sea is covered by satellite surveillance within the CleanSeaNet satellite service of EMSA as well as by national surveillance programmes. The satellite images are delivered in near real time to provide first indication of possible oil slicks to be checked by aircraft on a spot.

Altogether, EMSA provided 608 satellite scenes for the Baltic Sea countries in 2008, indicating 413 possible detections. 43% of the spill indications were checked and out of these 26% were confirmed to be oil.





SLAR

Two Co-ordinated Extended Pollution Control Operation (CEPCO) flights are arranged annually by HELCOM in the Baltic Sea: one in the north and one in the south. During CEPCO flights, several HELCOM countries jointly carry out continuous aerial surveillance activities for 24 hours or more along predetermined routes in areas where operational spills are likely. CEPCO

flights are also planned to support national aerial surveillance activities by detecting illegal discharges which would not be disclosed by routine national flights. This enables a realistic estimation of the total number of oil spills discharged into the Baltic Sea during one randomly selected day.

Host country and the number of detected oil spills during CEPCO flights since 2000

Year	CEPCO North			CEPCO South		
	Host country	Participating countries	No. of detected spills	Host country	Participating countries	No. of detected spills
2000	Finland	FI, LV, PL, SE	9	Poland / Sweden	EE, DE, LV, PL, SE	26
2001	Finland	EE, FI, LV, SE	3	Sweden	DK, FI, DE, LV, PL, SE	25
2002	Estonia	EE, FI, LV, SE	9	Denmark	DK, FI, DE, PL, SE	2
2003	Sweden	EE, FI, PL, SE	5	Poland	DK, EE, FI, LV, SE	23
2004	Finland	EE, FI, SE	5	Germany	FI, DE, LV, PL, SE	0
2005	Sweden	EE, FI, LV, SE	4	Sweden	EE, FI, LV, SE, DK	1
2007	Finland	FI, SE, LV, EE	3	Poland	DK, FI, SE, PL	26
2008	Estonia	EE, FI, LV, PL	7	Germany	EE, DK, SE, DE	11



Kaj Granholm, HELCOM

Operational needs for satellite images in the Baltic as well as programmes of joint aerial surveillance are co-ordinated by a special HELCOM working group.

While aerial and satellite surveillance on daily basis is used to detect illegal discharges of oil, it is also available to assist in case of any major accident.

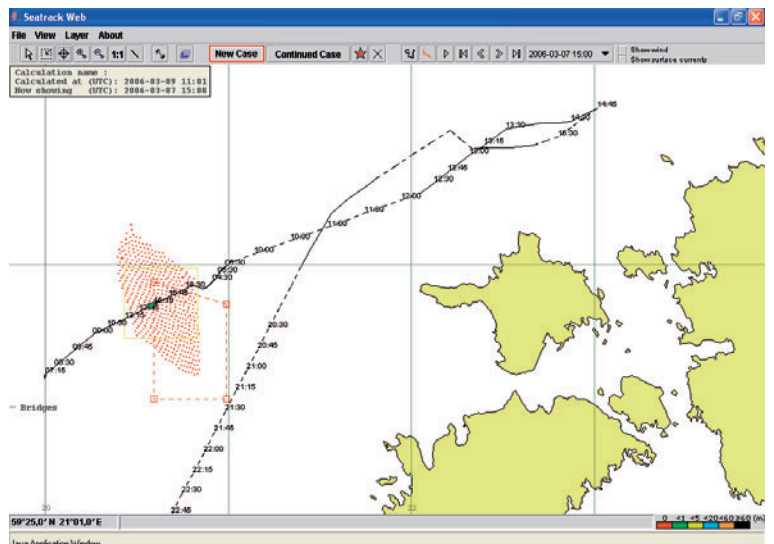
The Baltic Sea States are co-operating to investigate violations of anti-pollution regulations. This is particularly important when a ship violates the discharge regulations in the waters of one country, without calling at its port, and proceeds to a port in another country. In this situation one Baltic Sea country can request another to conduct a Port State Control upon the ship's arrival, to obtain necessary information and evidence of the suspected violation.

To enhance this co-operation, HELCOM countries have elaborated a Baltic Legal Manual specifying the requirements for obtaining a conviction in each Baltic Sea State and Guidelines on ensuring successful convictions of offenders of anti-pollution regulations at sea.

The Member States have also agreed to harmonize administrative fines by deciding on a minimum level, which is intended to be preventive - discouraging the master or other person in charge of a ship from violating the anti-pollution regulations. The minimum level will prevent fines varying greatly between the States, and will also help to avoid a situation in which it is cheaper to discharge illegally to the sea instead of delivering waste to port reception facilities.

In order to facilitate identification of ships suspected of illegally discharging oil into the sea, the Seatrack Web oil drift forecasting system (STW) has been developed within HELCOM. This tool in combination with the HELCOM AIS is used for the backtracking and forecasting simulation of detected oil spills, and matching the ship tracks with oil spill backtracking trajectory. STW/AIS has also been integrated with satellite information to increase the likelihood that polluters will be identified.

Snapshot from the HELCOM Seatrack Web showing an oil slick and its backtracking trajectory (in red) together with the route of a suspected ship





Establishing a mutual plan for places of refuge

Addressing the incidents at the earliest stage is a key objective of HELCOM work. The Helsinki Convention requires the Contracting Parties to draw up plans to accommodate ships in distress, in the waters under their jurisdiction, in order to ensure that these ships may immediately go to a place of refuge.

Moreover, HELCOM countries have agreed in the HELCOM Baltic Sea Action Plan to develop by 2009 and implement by 2010 a mutual plan for places of refuge in the Baltic Sea and investigate issues of liability and compensation related to such a plan.

With these provisions, the planning for places of refuge is no more to be regarded as a purely national issue, but a subject of strengthened regional co-operation for the benefit of the environment.

The mutual plan will specify circumstances under which a place of refuge could be granted to a ship in another country than the one where the ship first needed assistance. Those circumstances could be a lack of a shelter area suitable for a given ship in a vicinity of an accident area or unfavorable weather conditions, while a much quicker and safer solution, for both the ship and the environment, would be to grant a shelter in a neighboring country.

The mutual plan for places of refuge involves cross border liability and compensation questions, including how to address recovery of costs between HELCOM countries going beyond reimbursement schemes within the existing international conventions. Creation of satisfactory and harmonized legal regime for compensation of damage costs in the Baltic is critical and can be obtained by having the relevant compensation and liability conventions ratified by all Baltic Sea States.



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