

# Annual Marine Oil Pollution Report for the year 2019

- CleanSeaNet Satellite-Based Oil Spill Detection inside Icelandic Area of Interest and Other Pollution or Potential Pollution Related Information Reported by the Icelandic Coast Guard

## Abstract

In 2019, two possible oil spill cases reported by CleanSeaNet were assessed as linked to mineral oil. One of the cases was assessed as caused by a malfunctioning oily water separator and one by a hydraulic leak. Two cases could not be categorized as neither lookalikes nor mineral oil. Air assets did not investigate any CleanSeaNet alerts. A coast guard vessel investigated one suspect case where bilge water (mineral oil) had been discharged through a malfunctioning oily water separator. Patrol hours with fixed wing a/c decreased between years by 67% and with helicopters by 87%; however, EMSA deployed a MALE RPAS to Iceland for 4 months, which performed 521 hours of surveillance in the eastern half of the Icelandic EEZ. Surveillance assets did not report any marine oil pollution in 2019. Due to the sinking of m/s Blida in the environmentally sensitive area of Breidarfjordur, the Environment Agency requested additional satellite imagery through CECIS (Common Emergency Communication and Information System of the European Union). Following, the European Maritime Safety Agency allocated five satellite imagery acquisitions. No pollution was detected from the wreck.

## Contents

Abstract .....	1
Introduction.....	1
CleanSeaNet .....	2
Structure in Iceland .....	2
<b>Organizations with Access to the CSN-Service .....</b>	<b>3</b>
Clean Sea Net Statistical Information 2019.....	3
<b>Key Figures 2017-2019 .....</b>	<b>3</b>
<b>Overview of Possible Oil Spills 2019 .....</b>	<b>3</b>
List of feedback for CleanSeaNet detections inside Icelandic Exclusive Economic Zone.....	5
Other Notifications than CSN Related to Pollution or Potential Pollution.....	14
Aerial Surveillance .....	15
Marine Environmental Response Exercises .....	15
Annexes .....	16

## Introduction

As agreed by the Environment Agency and the Icelandic Coast Guard the latter shall annually by June 1st collect and disseminate to the Environment Agency statistical pollution control information. The Environment Agency will subsequently present the information at the annual Copenhagen Agreement meeting. This report summarizes notifications and observations as relates to pollution at sea, more specifically within the Icelandic Exclusive Economic Zone. Air and sea surface surveillance assets of the Icelandic Coast Guard report any pollution observed at sea to the Coast Guard operations centre. In addition, the Coast Guard operations centre receives pollution notifications through satellite services like the EMSA CleanSeaNet service, directly from the polluter, or from other third party. The Icelandic Coast Guard subsequently informs the Environment Agency.

## CleanSeaNet

CleanSeaNet (CSN) is a European satellite-based oil spill and vessel detection service. It assists participating States with following activities:

- identifying and tracing oil pollution on the sea surface
- monitoring accidental pollution during emergencies
- contributing to the identification of polluters

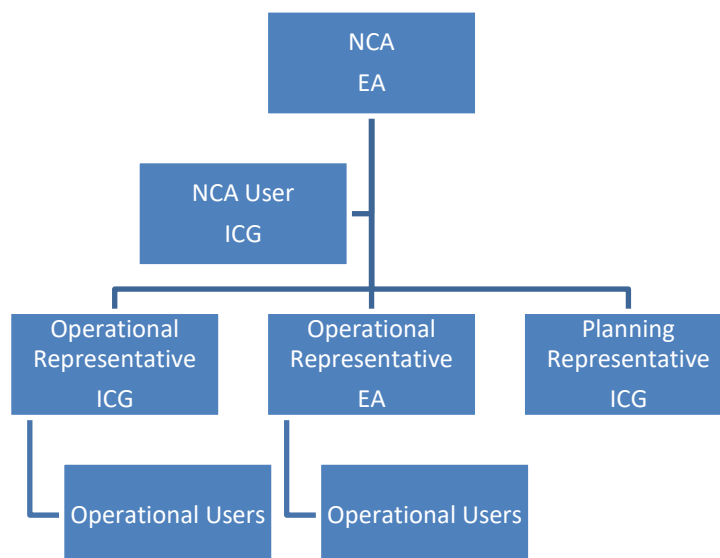
Iceland is a participating state through its membership of the European Free Trade Association (EFTA). The European Maritime Safety Agency (EMSA) is the provider of the CleanSeaNet Service and Iceland is contracting to the service through an agreement called „Conditions of use for receiving the EMSA Satellite Based Oil Spill and Vessel Detection Service CleanSeaNet“ (the conditions of use).

Iceland was set up for the service at the launching of the second generation of CleanSeaNet and successfully received the first Earth Observation Service (EOS) product on March 6<sup>th</sup> 2011.

## Structure in Iceland

The Environment Agency of Iceland is the National Competent Authority (NCA) of CleanSeaNet in Iceland. The NCA has the overall responsibility and by agreement,<sup>1</sup> the Icelandic Coast Guard carries out the daily operation of the system. A task of the Icelandic Coast Guard is to carry out surveillance of the sea around Iceland as well as to receive and disseminate notifications and information on any acute pollution of the sea.

All users shall comply with the conditions of use. The structure of users in the system is shown below; EA being the Environment Agency of Iceland; ICG being the Icelandic Coast Guard. The Icelandic Coast Guard NCA User administrates the web-based system and oversees the allocation of earth observation scenes carried out by EMSA.



<sup>1</sup> Samningur Umhverfisstofnunar og Landhelgisgæslu Íslands um samvinnu við eftirlit með mengun sjávar innan íslenskrar mengunarlögsögu.

## Organizations with Access to the CSN-Service

Organizations with access to the CSN-service in Iceland comprise the Environment Agency of Iceland, the Icelandic Coast Guard, the Transport Authority, the Institute of Earth Sciences of the University of Iceland, Police, and Customs.

## Clean Sea Net Statistical Information 2019

### Key Figures 2017-2019

2017	2018	2019
<ul style="list-style-type: none"> <li>• 44 (7 class A, 37 class B) possible oil spills in 26 occurrences/cases.</li> <li>• 0 cases assessed as linked to mineral oil.</li> <li>• No notifications/alerts were investigated by ICG air assets.</li> <li>• 11 cases assessed as linked to natural phenomena.</li> <li>• Assessed sources: new sea ice formation, weather patterns, current fronts, algae.</li> <li>• 12 cases assessed as linked to fishing activity.</li> <li>• Assessed sources: Mackerel, herring, capelin, mud/clay.</li> <li>• The cause could not be categorized/ specified in 3 cases.</li> </ul>	<ul style="list-style-type: none"> <li>• 48 (15 class A, 33 class B) possible oil spills in 32 occurrences/cases.</li> <li>• 1 case assessed as linked to mineral oil (hydraulic oil).</li> <li>• 3 cases investigated by ICG assets (2 by MSA, 1 by helo).</li> <li>• 16 cases assessed as lookalikes/natural phenomena like sea ice and current fronts.</li> <li>• 11 cases assessed as linked to fishing activity such as processing/capelin/liver + guts.</li> <li>• The cause could not be categorized/ specified in 4 cases.</li> </ul>	<ul style="list-style-type: none"> <li>• <b>74 (8 class A, 29 class B) possible oil spills in 37 occurrences/cases.</b></li> <li>• <b>2 cases assessed as linked to mineral oil of which one was caused by a malfunctioning oily water separator (case 5) and the other by a hydraulic leak (case 33).</b></li> <li>• <b>1 case was investigated by ICG assets (Coast guard vessel boarded the source vessel, case 5)</b></li> <li>• <b>33 cases assessed as lookalikes of which 13 were linked to natural phenomena, 10 to normal operation of ship (e.g. fisheries, cleaning of deck), 1 confirmed false positive, and 9 lookalikes not specified.</b></li> <li>• <b>The cause could not be categorized/ specified in 2 cases.</b></li> </ul>

Note: "Not categorized" cases are cases where no reasonable circumstances could be articulated about the cause. These cases could be lookalikes caused by e.g. algae bloom or leaking wrecks or they could be suspect cases linked to a possible polluter.

### Overview of Possible Oil Spills 2019

The main area of interest in this report is the Icelandic Exclusive Economic Zone. The area for which Iceland receives satellite imagery, analyses, and notifications for detection of possible oil-spills is considerably larger of size but is not included in this report. The report is intended for public use.

Red notification symbolizes possible oil spills of high likelihood (class A) and green symbolizes low likelihood (class B) as per Icelandic configuration.

Total detections of possible oil-spills (OS) inside the Icelandic EEZ numbered to 74 in 37 separate cases of which two were assessed to originate from mineral oil. 33 cases were assessed as lookalikes, and 2 cases could not be categorized. An Icelandic Coast Guard vessel investigated one case in 2019.

There were no cases in 2019 where the receiving organisations of the service disagreed to the CSN service analysis of possible oil spills, i.e. cases where oil spills or possible oil spills should have been detected by the service provider (so called false negatives). However, there was one so called false positive identified where the island of Grimsey was wrongly reported as a possible oil spill.

The numbered cases in figure 1-3 refer to the list of feedback.

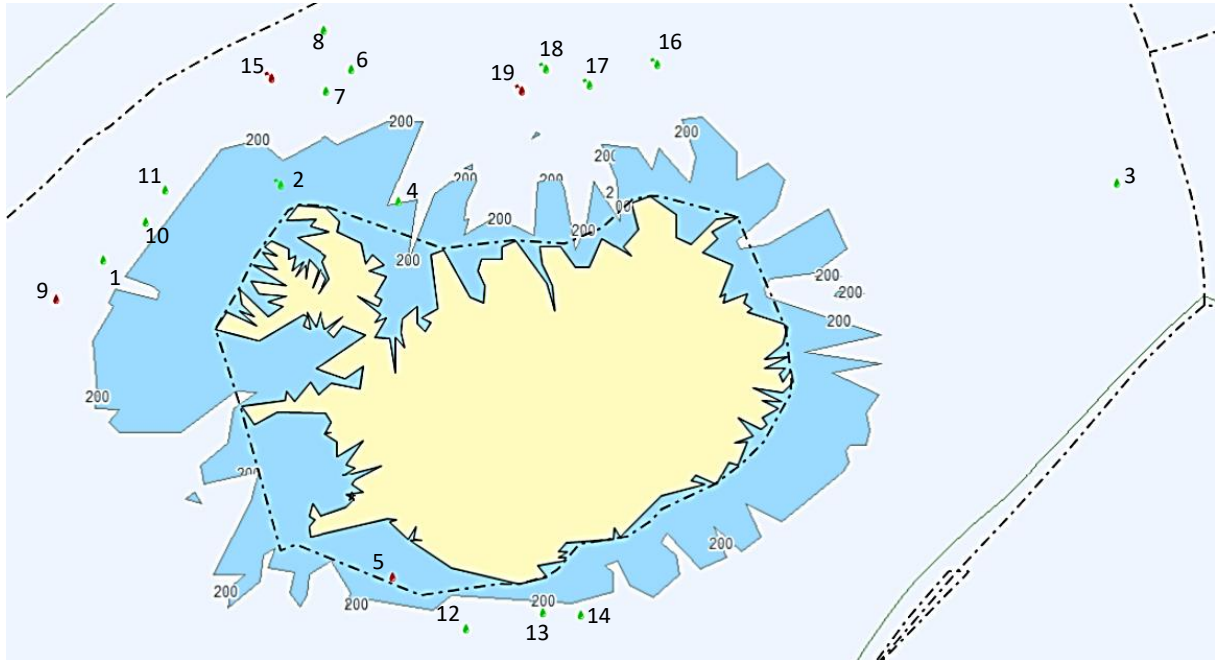


Figure 1: Possible oil spills detected in CleanSeaNet JAN-JUN 2019  
Reference: EMSA Earth Observation Services; SafeSeaNet Ecosystem GUI

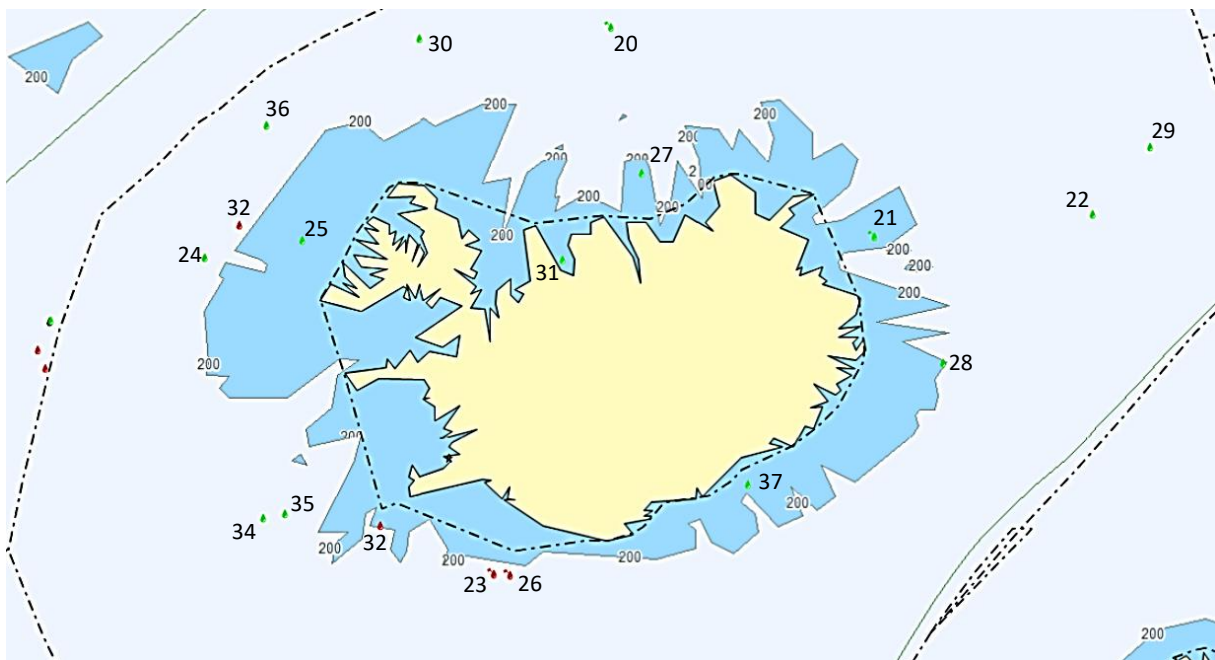


Figure 2: Possible oil spills detected in CleanSeaNet JUL-DEC 2019  
Reference: EMSA Earth Observation Services; SafeSeaNet Ecosystem GUI

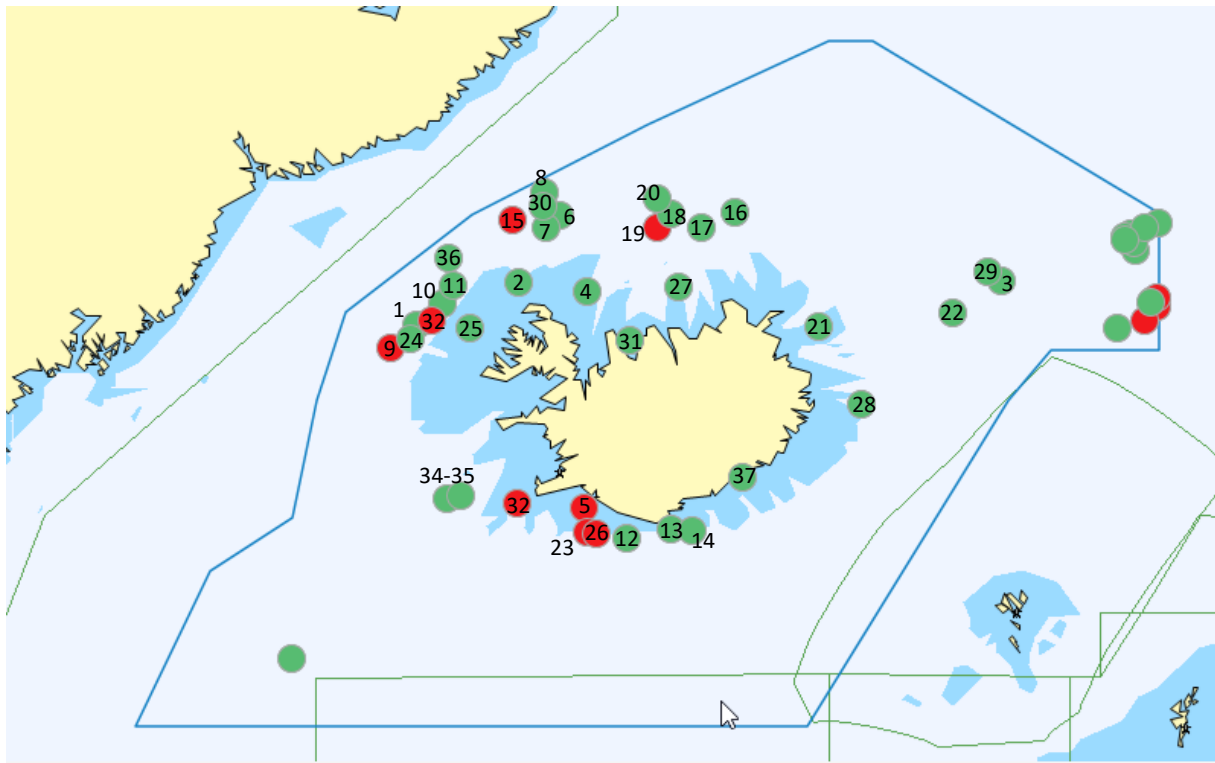
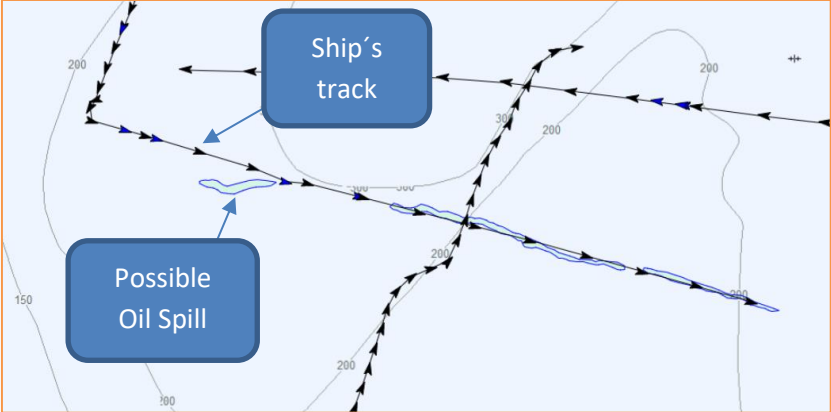


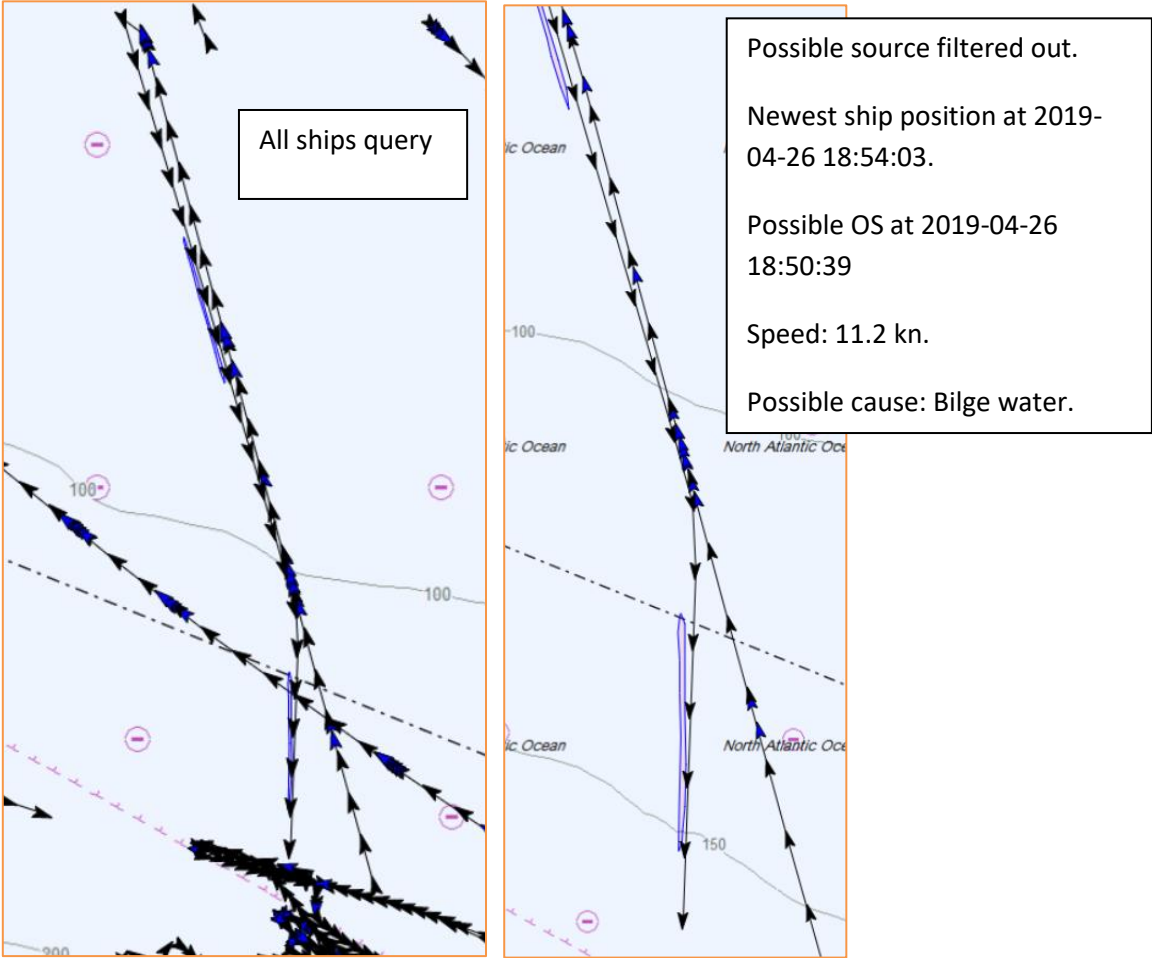
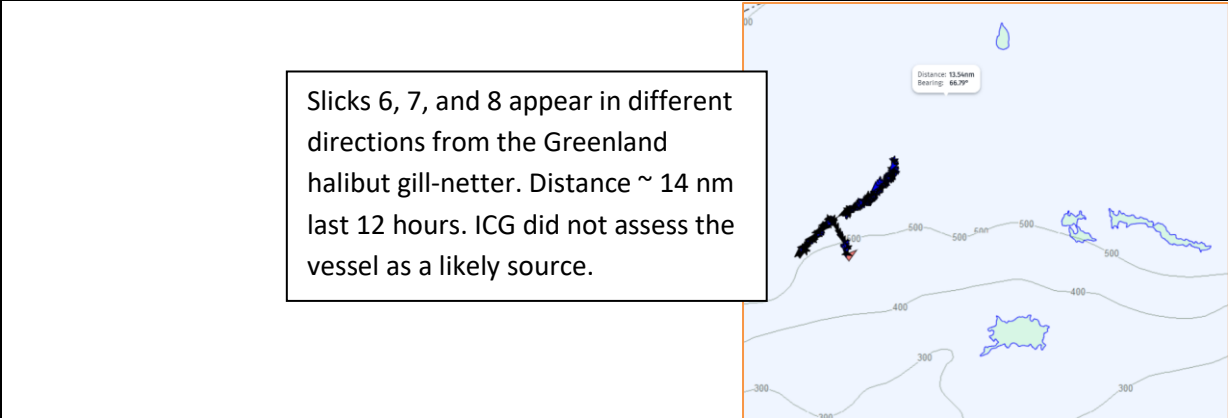
Figure 3: Overview of all detected possible oil spills within the Icelandic alert area. Only detections inside the EEZ are numbered and provided feedback to in this report. EMSA (2020)

**List of feedback for CleanSeaNet detections inside Icelandic Exclusive Economic Zone**

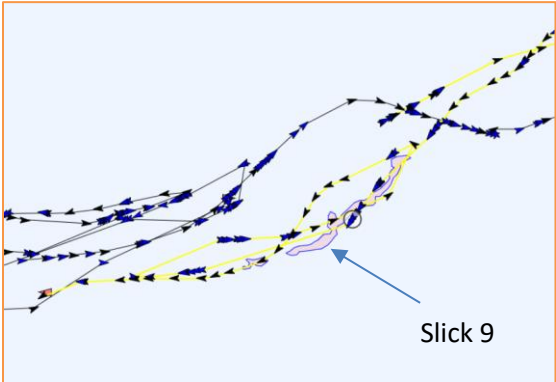
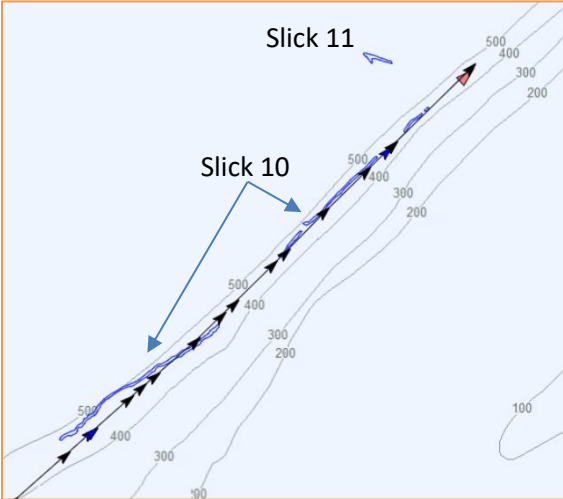
OS	Date/Time	Lat (Center)	Long (Center)	Area (nm2)	# of slicks	Class	
1	2019-02-02 08:27:25	66°02.65'N	026°40.48'W	0,13	2	B	Possible source: <i>Yes, several ships in vicinity.</i> Investigated: <i>Trawler contacted; Capelin shoal observed in position of possible OS.</i> Possible cause: <i>Natural Phenomenon (pelagic fish shoal)</i>
2	2019-02-28 07:57:44	66°37.38'N	023°18.17'W	0,07	1	B	Possible source: <i>No</i> Possible cause: <i>No</i>
3	2019-04-05 07:07:00	66°37.95'N	007°14.48'W	0,51	1	B	Possible source: <i>No</i> Possible cause: <i>No</i>
4	2019-04-	66°29.88'N	021°00.48'W	0,88	3	B	Possible source: <i>Yes</i>





	15 18:42:37						Investigated: <i>Trawler contacted; Crew had been cleaning the deck. Possible cause: Normal operation of ship.</i>
	 <p>The map displays a ship's track (black line with arrows) and a possible oil spill (blue shaded area). The track starts from the top left, moves south, then east, then south again, and finally east towards the right. The oil spill is located in the central part of the track. Bathymetry lines are shown at 150, 200, and 300 meters depth. A blue box labeled 'Ship's track' points to the black line, and another blue box labeled 'Possible Oil Spill' points to the blue shaded area.</p>						
5	2019-04-26 18:50:39	63°27.08'N	021°06.87'W	0,56	2	A	Possible source: <i>Yes</i> Investigated: <i>Coast guard vessel inspected the possible source at 23:11, 4 hours after the alert had been received.</i> Possible cause: <i>Bilge water (mineral oil) discharged through malfunctioning oily water separator.</i>

							 <p>Possible source filtered out.          Newest ship position at 2019-04-26 18:54:03.          Possible OS at 2019-04-26 18:50:39          Speed: 11.2 kn.          Possible cause: Bilge water.</p>
6	2019-04-30 19:07:28	67°28.58'N	021°54.93'W	9,31	2	B	Same as 8
7	2019-04-30 19:07:26	67°19.33'N	022°24.18'W	11,54	1	B	Same as 8
8	2019-04-30 19:07:33	67°46.22'N	022°26.53'W	1,79	1	B	Possible source: <i>No</i> Possible cause: <i>Natural phenomenon</i>
							 <p>Slicks 6, 7, and 8 appear in different directions from the Greenland halibut gill-netter. Distance ~ 14 nm last 12 hours. ICG did not assess the vessel as a likely source.</p>
9	2019-04-30 19:07:14	66°19.47'N	025°50.79'W	3,97	5	B	Possible source: <i>Yes</i> Investigated: <i>Trawler contacted, they had been cleaning the tween</i>

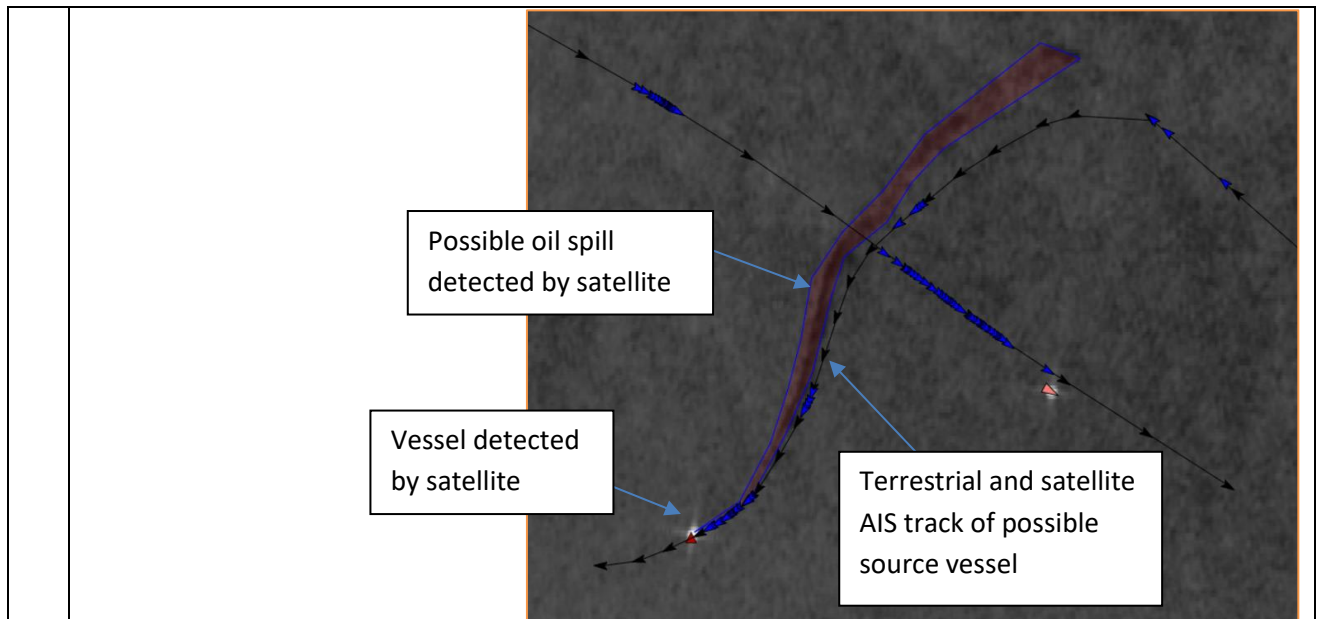


								deck. Possible cause: <i>Fisheries, normal operation of ship.</i>
								
10	2019-04-30 19:07:07	65°43.65'N	027°34.03'W	0,8	2	A	Possible source: Yes Investigated: No Possible cause: <i>Fishing activity</i>	
10 + 11								
11	2019-04-30 19:07:17	66°34.58'N	025°29.17'W	0,41	1	B	Possible source: No Possible cause: <i>Natural Phenomenon</i>	
12	2019-05-01 07:41:22	62°59.83'N	019°43.68'W	0,06	1	B	Possible source: No Possible cause: No	
13	2019-05-01 07:41:22	63°08.36'N	018°14.95'W	0,09	1	B	Possible source: No Possible cause: No	
14	2019-05-01 07:41:22	63°07.23'N	017°30.89'W	0,05	1	B	Possible source: No Possible cause: No	

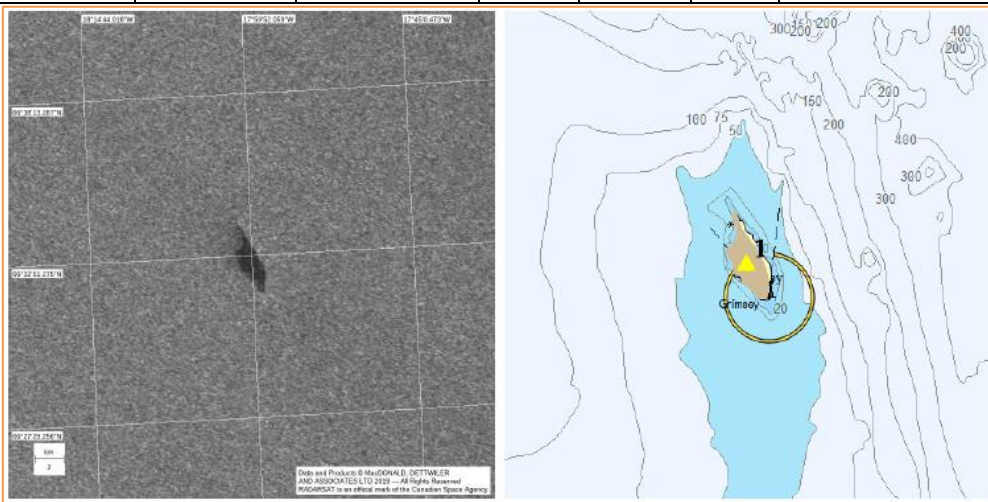
12 + 13 + 14							
15	2019-05-24 19:07:29	67°25.45'N	023°29.51'W	0,31	1	A	<p>Possible source: Yes                      Investigated: <i>ICG contacted the vessel (Greenland halibut gill-netter). They didn't see any oil or slicks in the ship's wake. The captain asked the crew about any knowledge of a possible cause, but nothing was reported. The coast guard surveillance aircraft was not available to investigate further.</i>                      Possible cause: No</p>
							
16	2019-06-02 18:42:50	67°30.95'N	016°06.92'W	2,05	10	B	<p>Possible source: No                      Investigated: <i>No – considered a lookalike</i>                      Possible cause: <i>Natural phenomenon</i></p>
17	2019-06-02 18:42:51	67°29.97'N	018°14.1'W	1,25	5	B	
18	2019-06-02 18:42:49	67°20.19'N	017°14.15'W	3,53	11	B	
19	2019-06-22 07:56:47	67°19.96'N	018°41.12'W	0,09	1	A	<p>Possible source: <i>No – no vessels in vicinity</i>                      Investigated: <i>No</i>                      Possible cause: <i>Lookalike – natural phenomenon</i></p>
20	2019-07-20 18:42:58	67°41.95'N	018°40.3'W	0,6	1	B	<p>Possible source: Yes                      Investigated: <i>Two trawlers (possible sources) contacted. None admitted to have discharged or lost any mineral oil or oil residues. One informed that it had discharged</i></p>

							<p><i>fish processing waste (entrails, guts, etc.)</i> Possible cause: <i>Lookalike – fish waste.</i></p>
21	2019-07-31 07:33:17	66°01.95'N	013°19.62'W	0,34	1	B	<p>Possible source: <i>No – no vessels in area</i> Investigated: <i>No – The Hermes 900 RPAS deployed by EMSA did a patrol flight in area but during the flight, the radar malfunctioned and could not be used for detection.</i> Possible cause: <i>Lookalike – small area and weak detection</i></p>
22	2019-08-10 18:17:50	66°12.75'N	008°51.67'W	0,47	1	B	<p>Possible source: <i>No</i> Investigated: <i>A pelagic trawler captain informed that a lot of mackerel was in that area.</i> Possible cause: <i>shoal of mackerel.</i></p>
23	2019-08-23 07:40:36	63°05.27'N	021°02.36'W	1,42	1	A	<p>Possible source: <i>Yes - Longliner as aligned with the possible oil spill.</i> Investigated: <i>Icelandic Coast Guard took contact to the vessel twice. Both the captain and the chief engineer stated that no oil or oil mixed water had been discharged. No other plausible explanations were found to the detection.</i> Possible cause: <i>Could not be</i></p>

							<i>determined – not specified.</i>
24	2019-09-24 08:13:58	65°51.08'N	026°53.63'W	0,31	3	B	Possible source: <i>Yes – freezer/factory trawlers</i> Possible cause: <i>Lookalike - Fisheries</i>
25	2019-09-24 08:13:54	65°59.86'N	024°54.54'W	0,36	1	B	Possible source: <i>No</i> Possible cause: <i>Lookalike</i>
26	2019-10-10 07:40:38	63°04.39'N	020°43.87'W	1,28	1	A	Possible source: <i>Yes</i> Investigated: <i>The coast guard talked to the factory trawler aligned and connected to the possible oil spill detection. The interviewee stated that nothing had been discharged from the vessel; however, they were processing fish, which could be a possible cause. Fishing for red fish and Atlantic argentine.</i> Possible cause: <i>Fish processing</i>



27	2019-11-04 08:04:47	66°32.75'N	018°00.42'W	1,36	1	B	Confirmed cause: <i>False positive detection of the island of Grimsey.</i>
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28	2019-11-07 07:07:09	64°57.26'N	011°54.34'W	1,08	1	B	Possible source: <i>Yes – three trawlers.</i> Investigated: <i>The coast guard contacted one of the vessels.</i> Possible cause: <i>Lookalike – fisheries. The detection was rather weak.</i>
29	2019-11-07 07:07:09	66°45.34'N	007°42.05'W	0,63	1	B	Possible source: <i>No</i> Possible cause: <i>Natural phenomenon</i>
30	2019-11-07 08:18:14	67°36.25'N	022°30.86'W	0,44	1	B	Possible source: <i>No</i> Possible cause: <i>Lookalike – Natural phenomenon</i>
31	2019-11-09 07:41:31	65°50.34'N	019°37.06'W	0,14	1	B	Possible source: <i>No</i> Possible cause: <i>Lookalike</i>
32	2019-11-	63°31.46'N	023°20.7'W	5,56	1	A	Possible source: <i>Yes</i>



	26 07:48:40						Investigated: <i>Trawler in position contacted.</i> Possible cause: <i>Fish oil and sludge.</i>
33	2019-11-26 19:08:00	66°07.03'N	026°11.07'W	0,99	1	A	Possible source: <i>Yes</i> Investigated: <i>The trawler aligned with detection was contacted. The trawler processing the fish. In addition, at around 1800 there was a hydraulic oil leak and a few liters of hydraulic oil was washed overboard.</i> Possible cause: <i>Hydraulic oil and fish sludge.</i>
34	2019-11-26 19:07:19	63°35.83'N	025°41.42'W	0,14	3	B	Possible source: <i>Yes</i> Investigated: <i>The pelagic trawler aligned with the detection was contacted. The vessel took the trawl around 1800 and pumped herring for around an hour.</i> Possible cause: <i>Fish oil</i>
35	2019-12-01 07:57:53	63°37.93'N	025°14.96'W	0,12	1	B	Possible source: <i>Yes</i> Investigated: <i>The pelagic trawler aligned with the detection was contacted. The vessel was pumping 200 ton of herring on board and</i>



							<i>was processing the fish. Possible cause: Fish oil</i>
36	2019-12-06 08:05:04	66°55.83'N	025°37.62'W	0,69	1	B	Possible source: <i>No</i> Possible cause: <i>Melting ice area from the nearby sea ice edge.</i>
37	2019-12-23 18:41:55	63°53.83'N	015°51.17'W	0,94	1	B	Possible source: <i>No – no vessels in vicinity</i> Possible cause: <i>Lookalike</i>
			<b>Total</b>	<b>54,3</b>	<b>74</b>		

## Other Notifications than CSN Related to Pollution or Potential Pollution

Date	Event (Reported Pollution; Maritime Incidents)
	<b>Reported Pollution</b>
29/4	Oil slick reported off Eney by pilot approaching BIRK. Port and Environment Authorities were informed.
30/7	A cyclist reported an oil slick in the port of Hafnarfjordur. Relevant authorities were following advised.
15/8	The captain of a trawler reported a considerable hydraulic leak. Estimated 20 litres leaked onto the deck and trawl of his vessel. The captain had observed that the coast guard was able to detect quite a-lot of oil slicks at sea.
21/10	The wreck of the oil tanker El Grillo in Seydisfjordur was observed leaking HFO during explosive ordnance disposal and inspection work performed by the coast guard. The wreck is located at 36 meters below the surface.

	<b>Maritime Incidents/Stranded/Sunk/</b>
16/2	M/s Stakkhamar stranded, Rif. Got loose by itself. No leak.
23/3	M/s Bjarnarnes stranded, Jökulfirðir. Leak in engine room.
4/4	M/s Særún stranded, Breiðarfjörður. Seawater leaked into vessel.
7/5	M/s Mars sank, Miðfjörður. Helmsman fell asleep.
18/6	M/s Blíða took on water, Breiðarfjörður.
10/7	M/s Hafdís stranded, Súgandafjörður.
18/7	S/y Karitas stranded, Hafnarfjörður.
4/8	M/s Tjúlla stranded, Garðsjó.
21/8	M/s Guðrún and M/s Natali collided. Guðrún took on water into hold.
9/9	M/s Frændi sank, Aðalvík. Estimated 250-300 litres of oil on board.
10/9	M/s Digranes stranded, Lánganes. Crew was asleep. Considerable amount of oil observed on scene. Estimated 600-700 litres of marine gas oil on-board.
1/10	A tugboat reported that a barge which it was towing had capsized during the night and that there was a risk of pollution from it. Estimated amounts were 200 litres of diesel, 50-60 litres of hydraulic oil and 30 litres of lubricants.
5/10	M/s Sædís capsizes, Rif.
5/11	M/s Blíða sank, Breiðarfjörður. Additional satellite images were requested by the Environmental Agency through CECIS to monitor the environmentally sensitive area. The European Maritime Safety Agency allocated 5 additional acquisitions. No leak was detected from the wreck.
8/11	M/s Guðrún TFOE stranded, Rifshafnartangi.
13/11	M/s Einar Guðnason stranded, Súgandfjörður. Took on water.
29/11	M/s Lágey stranded, Pistilfjörður. Full of oil, around 1000 litres.

## Aerial Surveillance

Icelandic Coast Guard maritime surveillance aircraft (MSA) and helicopters perform aerial surveillance inside of the Icelandic Exclusive Economic Zone. The MSA is of type “Dash 8, Q-300” and surveillance means include SLAR, search radar, EO/IR, and AIS receiver.

Surveillance is dedicated to pollution patrols but as well other law enforcement tasks and sea ice patrols. Patrol hours with fixed wing a/c decreased between years by 67% and with helicopters by 87%; however, EMSA deployed a MALE RPAS to Iceland for 4 months, which performed 521 hours of surveillance in the eastern half of the Icelandic EEZ. Surveillance assets did not report any marine oil pollution in 2019.

<b>Maritime surveillance [h]</b>			
	<b>Fixed wing</b>	<b>Helicopters</b>	<b>RPAS</b>
<b>2019</b>	51	17	521
<b>2018</b>	154	128	0
<b>2017</b>	94	96	0
<b>2016</b>	188	77	0

## Marine Environmental Response Exercises

As per directive on marine and coastal acute pollution response no. 1010/2012, the Environment Agency, the Icelandic Coast Guard, and Icelandic Transport Authority have made a contingency plan also addressing exercises. At least once a year an exercise between the agencies should be conducted.

16/2	Skimmer tested on ICGV THOR at Seydisfjordur.
7/5	Live Marine Environmental Response exercise conducted in Stakksfjordur and inside port area of

Reykjanes.

Target vessel was ICGV TYR. Scenario included grounding and leaking of 25 t. of marine gas oil. The coast guard through the National Emergency Line activated the unified command. ICGV THOR was sent to assist and clean-up. Fixed wing aircraft TF-SIF was scrambled. The Environment Agency took on the responsibility for the supervision of the response and appointed an incident commander. When the pollution source entered the harbour area of Reykjanes Port, the responsibility was transferred to the port authority.

Participating organisations: Icelandic Coast Guard (JRCC/MAS Iceland, ICGV THOR (on-scene coordinator), ICGV TYR, f/w TF-SIF), the Environment Agency, the Transport Authority, Faxaports, Reykjanes Port (tugboat Audunn), oil supplier Oliudreifing (also: provider of oil pollution response), and National Emergency Line. The University of Iceland, Sudurnes Hospital & Health Center, and Hafnarfjordur Port were also present.



## Annexes

None