

Annual Marine Oil Pollution Report 2018

- 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 2018, one possible oil spill case reported by CleanSeaNet was assessed as linked to mineral oil (hydraulic). Four cases could though not be categorized as either lookalikes or fishing activity. Icelandic Coast Guard air assets investigated three CleanSeaNet alerts in 2018. Patrol hours with fixed wing a/c increased between years by 64%.

During a maritime surveillance flight, a possible oil spill was detected 33 nm NE of Langanes. Possible cause could not be identified. The side looking airborne radar of the aircraft was out of order and no further investigation was feasible by the aircraft.

One additional image was requested due to a reported oil spill South of Hrisey in Eyjafjordur. The CSN service though did not detect the spill; however, the image detected another possible oil spill off shore.

Contents

Abstract	1
Introduction.....	1
CleanSeaNet	2
Structure in Iceland	2
Organizations with Access to the CSN-Service	3
Clean Sea Net Statistical Information 2018.....	3
Key Figures	3
Overview of Possible Oil Spills 2018	3
Feedback for possible oil spills inside Icelandic Exclusive Economic Zone in 2018	5
Other Notifications than CSN Related to Pollution or Potential Pollution.....	12
Aerial Surveillance	14
Exercises	14
Attachments	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 intention of this report is inter alia to serve this purpose. 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 operator 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).

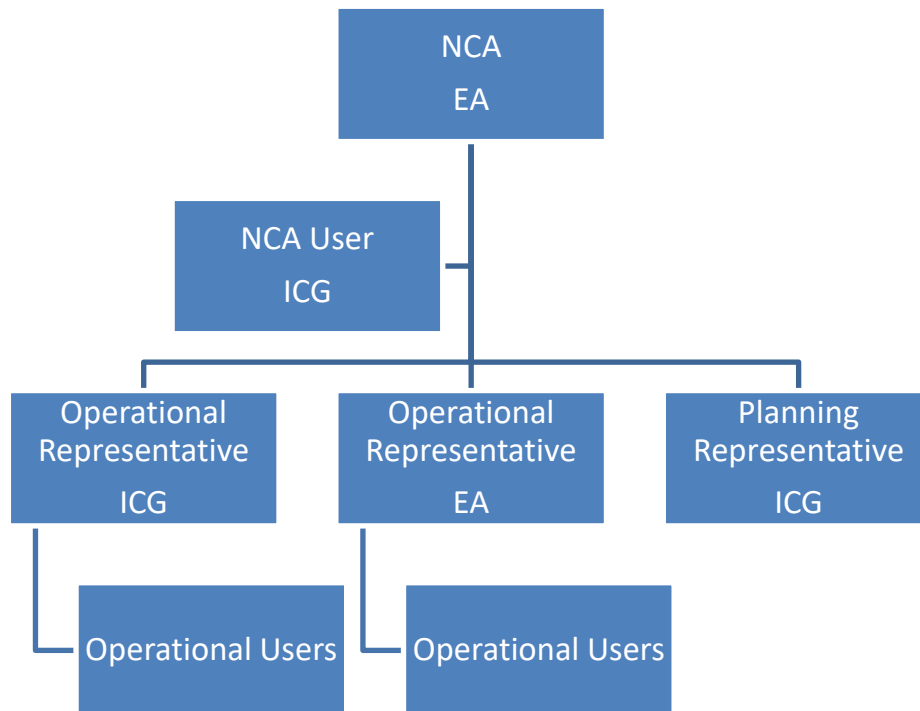
Iceland was set up for the service at the launching of the second generation of CleanSeaNet and successfully received the first Earth Observation Service (EOS) product on March 6th 2011.

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,¹ 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 EOS carried out by EMSA.

¹ 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 and the Institute of Earth Sciences of the University of Iceland.

Clean Sea Net Statistical Information 2018

Key Figures

2017	2018
<ul style="list-style-type: none"> • 44 (7 class A, 37 class B) possible oil spills in 26 occurrences/cases. • 0 cases assessed as linked to mineral oil. • No notifications/alerts were investigated by ICG air assets. • 11 cases assessed as linked to natural phenomena. • Assessed sources: new sea ice formation, weather patterns, current fronts, algae. • 12 cases assessed as linked to fishing activity. • Assessed sources: Mackerel, herring, capelin, mud/clay. • 3 cases were not categorized. 	<ul style="list-style-type: none"> • 48 (15 class A, 33 class B) possible oil spills in 32 occurrences/cases. • 1 case assessed as linked to mineral oil (hydraulic oil). • 3 cases investigated by ICG assets (2 by MSA, 1 by helo). • 16 cases assessed as lookalikes/natural phenomena like sea ice and current fronts. • 11 cases assessed as linked to fishing activity such as processing/capelin/liver + guts. • 4 cases were not categorized.

Overview of Possible Oil Spills 2018

The main area of interest in this report is the Icelandic Exclusive Economic Zone. The area of 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 of the Icelandic EEZ numbered to 48 in 32 separate cases of which one was assessed to originate from mineral oil. 4 cases could though not be categorized. Icelandic Coast Guard air assets investigated 3 alerts in 2018.

There were no cases in 2018 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). There was though one incident on the 5th of August where the image actually did include an actual oil spill. The spill could though not be distinguished from other areas without any spill inside the Fiord.

The numbers in figure 1 and 2 refer to the list of feedback.

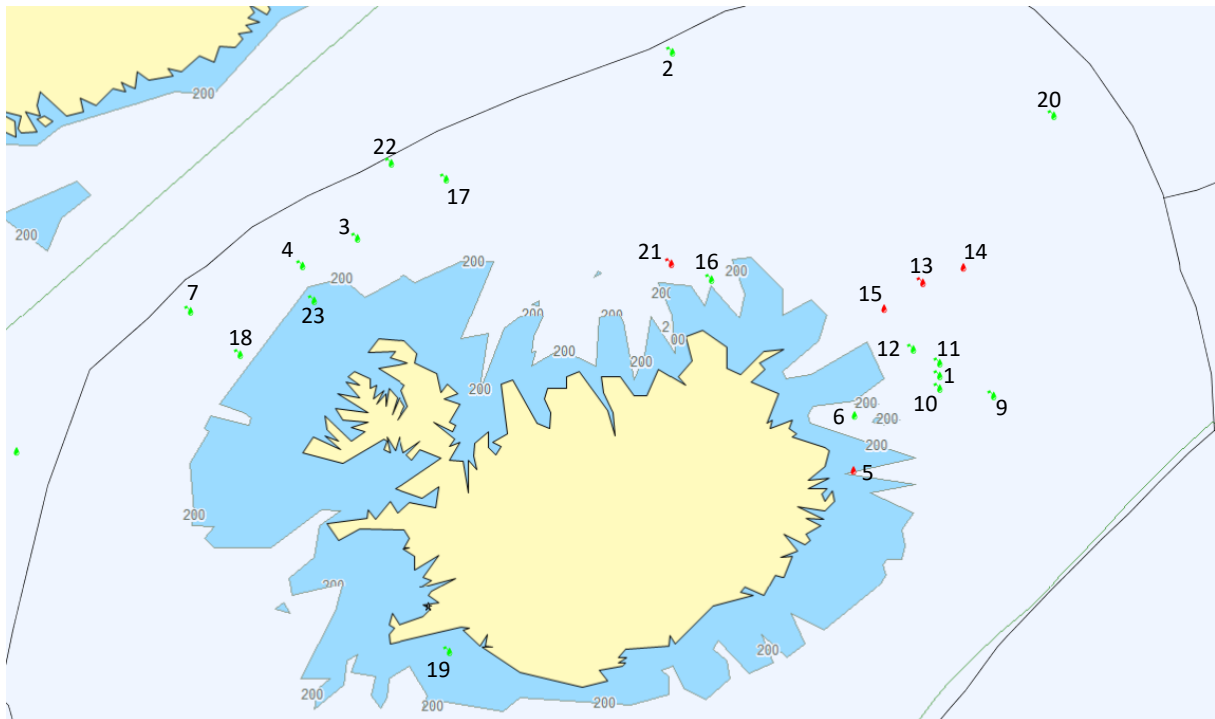


Figure 1: Possible oil spills detected in CleanSeaNet JAN-JUN 2018
Reference: EMSA Earth Observation Services – SEG

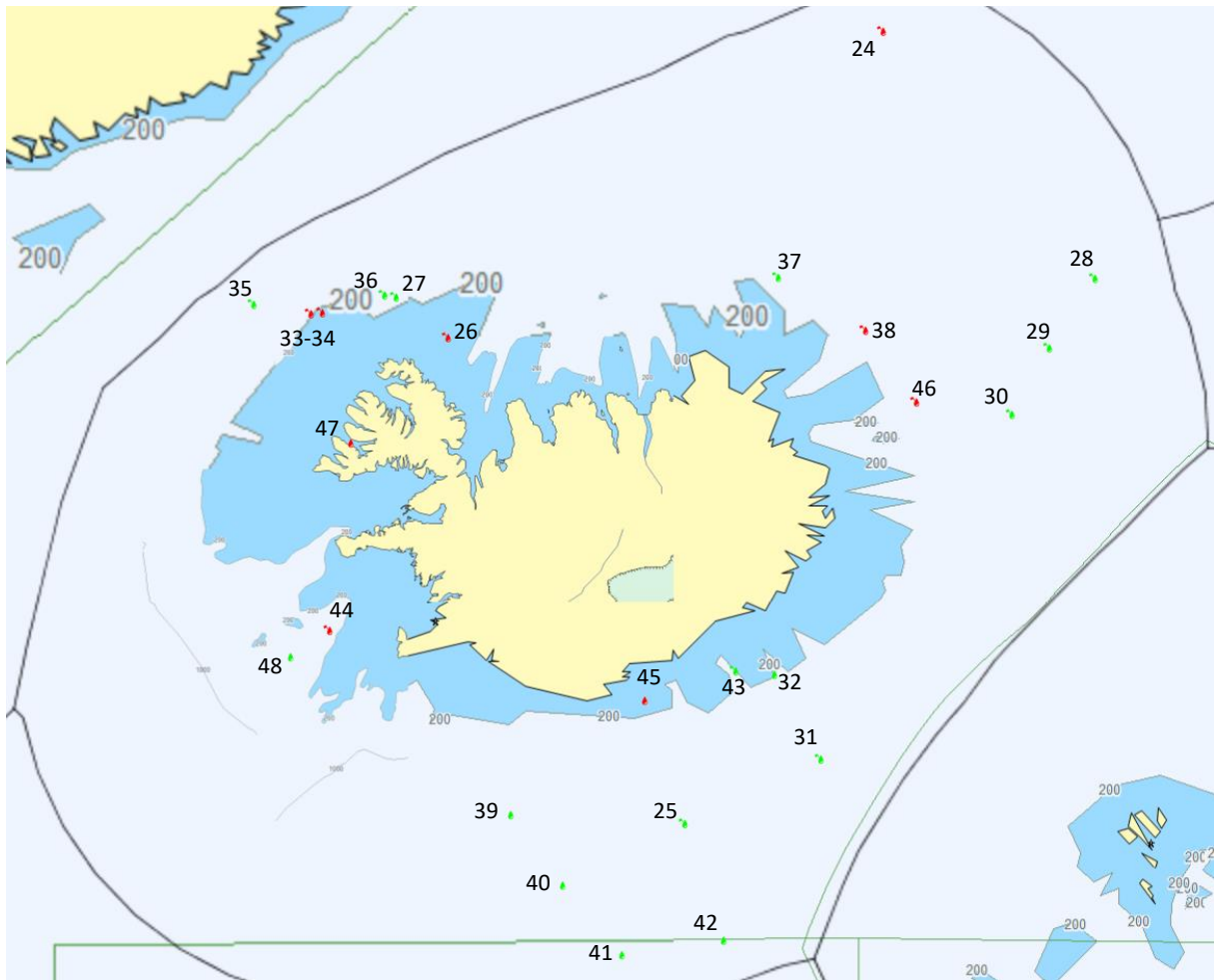


Figure 2: Possible oil spills detected in CleanSeaNet JUL-DEC 2018
Reference: EMSA Earth Observation Services – SEG

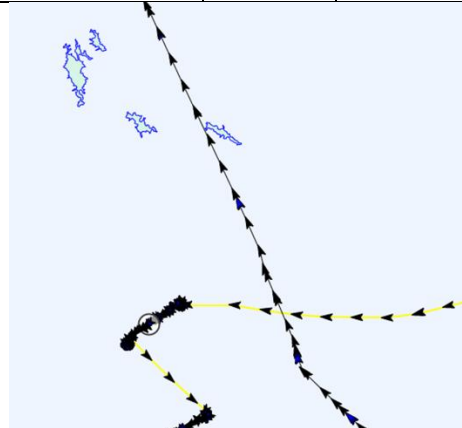
Feedback for possible oil spills inside Icelandic Exclusive Economic Zone in 2018

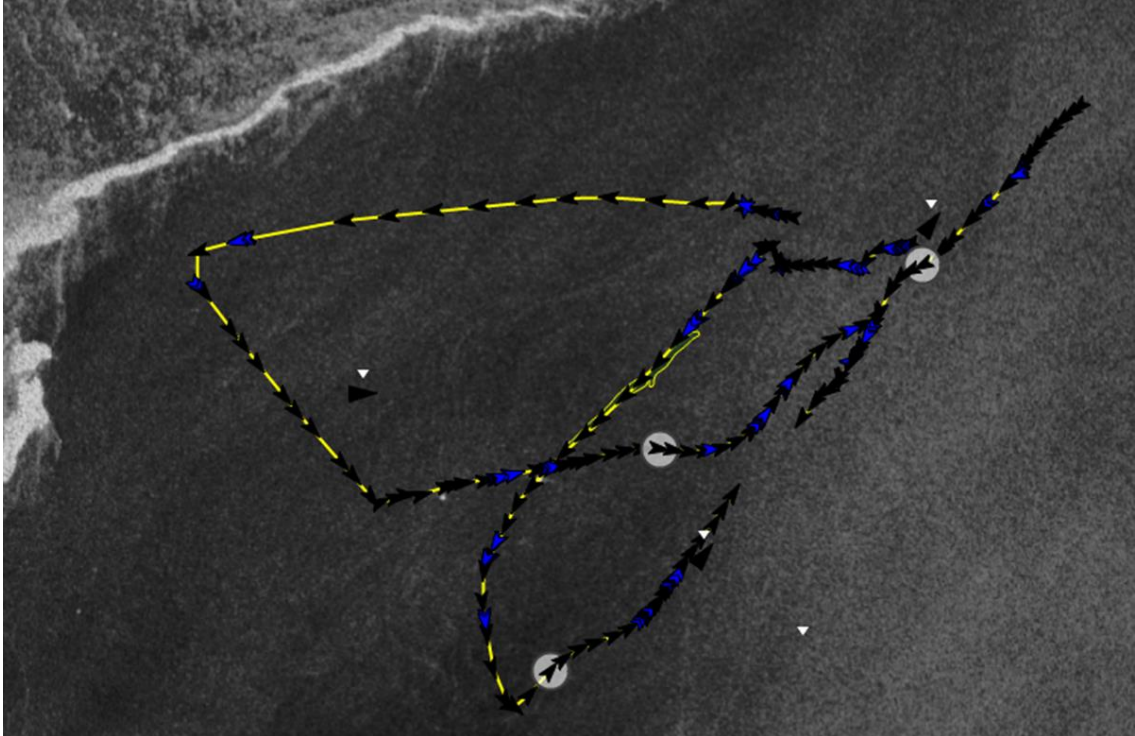
#	Oilspill ID	Time	Lat (Center)	Long (Center)	Width (nm)	# of slicks	Class	Comments and possible source
1	1801190008_1	2018-01-19 18:01:13	66°09'32"N	011°18'38"W	0.27	1	B	Possible source: Yes, contacted. Possible cause: capelin fisheries.
2	1802070006_1	2018-02-07 18:41:20	68°44'37"N	016°52'30"W	1.57	3	B	Possible source: No Possible cause: Weather conditions/natural phenomenon as assessed by ICG and Faculty of Earth Sciences, University of Iceland.
3	1802070006_2	2018-02-07 18:41:20	67°17'28"N	023°26'57"W	1.97	1	B	
4	1802070006_3	2018-02-07 18:41:20	67°04'14"N	024°34'51"W	4.33	2	B	

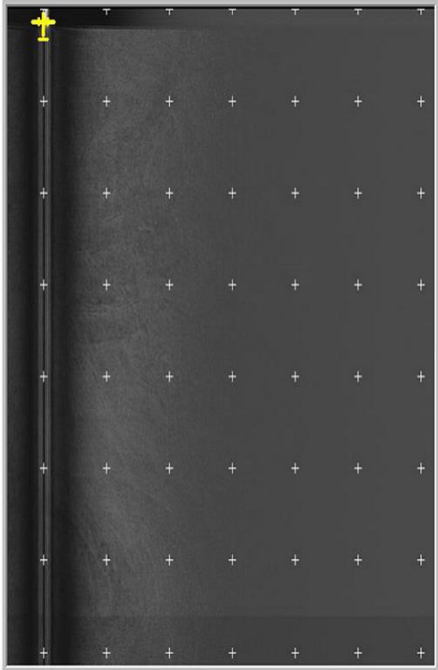
5	1802250000_1	2018-02-25 07:23:56	65°20'58"N	013°04'13"W	1.1	1	A	Possible source: No Possible cause: Weather conditions/natural phenomenon as assessed by ICG and Faculty of Earth Sciences, University of Iceland. Sentinel imagery frequented prior and post the occurrence.
6	1802280005_1	2018-02-28 18:17:35	65°49'12"N	013°03'59"W	0.09	4	B	Possible source: No Possible cause: Weather conditions/natural phenomenon as assessed by ICG and Faculty of Earth Sciences, University of Iceland. SAT imagery frequented prior and post the occurrence.
7	1804060029_1	2018-04-06 08:35:45	66°42'13"N	026°54'54"W	1.27	1	B	Possible source: no Possible cause: Natural phenomenon
8	1804200009_2	2018-04-20 18:41:33	63°00'51"N	020°11'36"W	4.16	1	A	Possible source: Yes Possible cause: Fishing activity



9	1805020003_1	2018-05-02 07:24:13	66°00'08"N	010°11'22"W	1.72	4	B	Possible source: no Possible cause: Natural phenomenon
10	1805020003_2	2018-05-02 07:24:15	66°03'39"N	011°18'04"W	0.92	7	B	
11	1805020003_3	2018-	66°15'59"N	011°18'13"W	1.17	1	B	

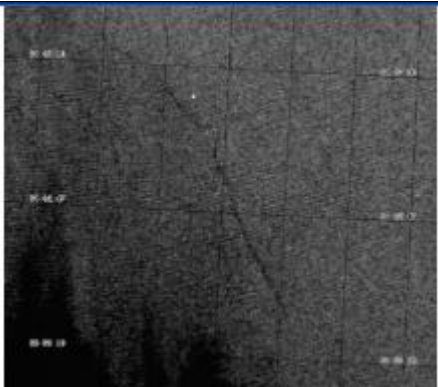
		05-02 07:24:11						
12	1805020003_4	2018-05-02 07:24:10	66°22'47"N	011°51'22"W	0.54	1	B	
13	1805080000_1	2018-05-08 07:24:42	66°55'41"N	011°40'15"W	0.77	6	A	Possible source: no Possible cause: natural phenomenon ICG and Faculty of Earth Sciences, University of Iceland, monitored the area post notification through SAT imagery. See attachment.
14	1805080000_2	2018-05-08 07:24:39	67°03'11"N	010°46'13"W	0.47	3	A	
15	1805080000_3	2018-05-08 07:24:48	66°42'15"N	012°26'44"W	0.13	6	A	
16	1805140006_1	2018-05-14 18:42:32	66°57'14"N	016°04'07"W	1.13	1	B	Possible source: no Possible cause: natural phenomenon See attachment
17	1806060022_1	2018-06-06 18:48:45	67°45'04"N	021°36'06"W	1.14	4	B	Possible source: yes Possible cause: Hydraulic oil The possible source informed that a leak of the hydraulic system on board might have caused the detection. App. 200-300 liters.
								

18	1806080015_2	2018-06-08 08:05:26	66°20'19"N	025°53'31"W	0.38	1	B	Possible source: yes Possible cause: Fishing activity. A fishing vessel west of Iceland reported a malfunctioning drainage hole from which fish liver and guts went overboard. On-site observation: Icelandic Coast Guard Maritime Surveillance Aircraft flew over position at 12:14 returning a clean SLAR picture.
								
19	1806080015_3	2018-06-08 08:06:02	63°43'33"N	021°30'59"W	0.47	1	B	Possible source: yes Possible cause: fishing activity. A fishing vessel south of Iceland reported a thin slick from fish oil related to the fishing activity of the vessel.
20	1806120016_1	2018-06-12 18:02:32	68°15'46"N	008°56'30"W	0.71	3	B	Possible source: no Possible cause: natural phenomenon

21	1806120025_1	2018-06-12 07:32:19	67°05'16"N	016°54'49"W	0.61	3	A	Possible source: no Possible cause: unknown Icelandic Coast Guard Maritime Surveillance Aircraft flew over at 15:22. SLAR taken at 1000 ft. covering 30 nm returned clean sea with no pollution.
								
22	1806250014_1	2018-06-25 08:13:09	67°53'10"N	022°43'53"W	0.55	1	B	Possible source: no Possible cause: natural phenomenon likely related to the sea ice in the vicinity.
23	1806260020_2	2018-06-26 08:06:00	66°47'22"N	024°20'35"W	0.54	1	B	Possible source: yes Possible cause: Fishing activity, processing of fish. Small leakage from stern tube also reported.
24	1807070000_1	2018-07-07 17:53:59	69°04'55"N	012°31'49"W	2.35	37	A	Possible source: no Possible cause: considered as a look alike. Natural phenomena.


25	1807240003_2	2018-07-24 18:50:15	62°11'33"N	016°42'40"W	0.09	15	B	Possible source: no Possible cause: The ICG Maritime Surveillance Aircraft performed a surveillance flight in area 6 hours before where a dead whale was observed in area. Other likely causes assessed are mackerel shoals or other natural phenomena.
26	1807240003_3	2018-07-24 18:51:32	66°38'57"N	021°42'01"W	0.07	2	A	Possible source: Yes. Identified fishing vessel. Possible cause: Fish oil. Investigation was not feasible.
27	1808050036_2	2018-08-05 18:51:39	66°59'09"N	022°47'27"W	0.04	2	B	Possible source: Yes. Trawler. The crew had been cleaning the lower deck an hour before the acquisition but no hydraulic oil residues had been observed.
28	1808120000_1	2018-08-12 07:24:39	67°08'35"N	007°59'39"W	0.34	2	B	Possible source: No. Possible cause: Lookalike.
29	1808120000_2	2018-08-12 07:24:50	66°33'46"N	008°57'20"W	2	1	B	
30	1808120000_3	2018-08-12 07:25:58	62°49'58"N	013°48'07"W	0.57	1	B	
31	1808120000_4	2018-08-12 07:25:01	65°59'45"N	009°44'41"W	0.27	1	B	
32	1808180004_2	2018-08-18 18:41:42	63°38'23"N	014°44'19"W	0.66	1	B	
33	1808240000_3	2018-08-24 08:13:32	66°51'01"N	024°37'14"W	0.07	3	A	Possible source: No. On-site observation: Natural phenomena. Coast guard helicopter was scrambled to investigate and observed current fronts and icebergs.
34	1808240000_4	2018-08-24 08:13:32	66°51'31"N	024°21'38"W	0.29	5	A	


35	1808240000_5	2018-08-24 08:13:28	66°59'30"N	023°02'08"W	0.02	4	B	
36	1808240000_6	2018-08-24 08:13:32	66°55'28"N	025°48'37"W	0.59	1	B	
37	1809050008_2	2018-09-05 07:24:51	67°08'39"N	014°41'34"W	0.21	2	B	Possible source: No. Possible cause: Lookalike.
38	1809050008_4	2018-09-05 07:24:55	66°42'30"N	012°50'55"W	0.15	1	A	Possible source: Yes. Longliner connected to detection. Possible cause: Fishing activity. Fish oil observed around vessel. No coast guard assets were available. MSA under maintenance.
39	1809100009_1	2018-09-10 18:49:55	61°01'22"N	015°49'10"W	0.13	1	B	Possible source: No. Possible cause: Lookalike.
40	1809100009_2	2018-09-10 18:49:56	60°52'17"N	017°58'17"W	0.05	1	B	
41	1809100009_3	2018-09-10 18:50:09	61°34'46"N	019°14'19"W	0.18	1	B	
42	1809100009_4	2018-09-10 18:50:22	62°17'34"N	020°19'32"W	0.17	1	B	
43	1809110010_1	2018-09-11 18:41:45	63°40'25"N	015°35'46"W	0.27	1	B	Possible source: No. Possible cause: Lookalike.
44	1809170006_2	2018-09-17 08:14:17	64°03'22"N	024°12'31"W	1.21	1	A	Possible source: Yes. Possible cause: Fishing activity. Vessel contacted but a likely cause was not identified. Length of possible spill was 8.56 nm and width 0.73 nm. Investigation: Investigation with air assets not feasible. Surveillance aircraft was under repair.

								
45	1811020001_1	2018-11-02 07:42:18	63°23'29"N	017°29'44"W	0.21	1	A	Possible sources: No. Ships traffic in vicinity contacted returning no clarification. Possible cause: No.
46	1811060000_2	2018-11-06 07:08:42	66°05'50"N	011°46'21"W	0.27	1	A	Possible source: Yes. Three fishing vessels. Possible cause: One trawler reported that they had been processing fish.
47	1811240010_3	2018-11-24 07:58:10	65°44'28"N	023°43'45"W	0.01	5	A	Possible source: Yes. Fish farm service boat. Possible cause: No likely cause identified, still dark and difficult to identify anything on sea surface from the boat.
48	1811240010_4	2018-11-24 07:58:43	63°48'15"N	025°00'11"W	0.01	7	B	Possible source: Yes. Trawler. Possible cause: Fishing activity. Processing of fish.

Other Notifications than CSN Related to Pollution or Potential Pollution

Date	Event
	Pollution
23/3	Oil slick reported in Port of Reykjavik. Reported by coast guard helicopter pilot.
7/6	Oil slick in Port of Reykjavik by the whale watching boats reported.
12/7	A vessel reports to have lost 50-70 ltrs of water mixed coolant over board (Glycol).
14/7	Oil leak from shore reported in Port of Hafnarfjordur.
5/8	A rather big oil slick reported SW of Hrisey. The slick had a strong smell. The Environment Agency requested a satellite image from EMSA, which was delivered 2018-08-05 18:51:09 UTC. The image though did not return any oil spills at the reported position. Even though the observed spill was not reported another spill was reported in the image out at sea. As the coast guard as well

	could not identify the oil slick in the image, the non-reporting is not classified as a false negative. We can though see from the incident that oils spills can not always be identified in fx windless areas. The size of the slick was reported to be about one nm long and 300-400 meters wide. The oil spill was reported from one witness to be heavy fuel oil.
	During a maritime surveillance flight a possible oil spill was detected 33 nm NE of Langanes. One trawler 12 nm from position was contacted but possible cause not identified. The side looking airborne radar of the aircraft was out of order and no further investigation was feasible by the aircraft.
	
13/8	2018-08-13 12:46:24U N66.38,89 W013.24,59 ALT 5551 HDG 060 GS 220,8 SIF09518
13/8	Thin non-combatable oil slick observed in Faxi Bay. Coast guard helicopter scrambled to investigate.
21/9	Oil leaking from boat in Hafnarfjordur.
9/11	A vessel reports a brown weathered foaming oil slick on sea surface 57 nm from Dalatangi/pos 65°26,59'N - 011°18,47'W. Length about 0,3 nm. A history area query returned a number of possible sources.
	Maritime incidents/Stranded/Sunken/
21/2	Tjaldur SH stranded on seabed of sand at Rif. No leak.
17/3	Sailing yacht stranded. No leak.
15/4	Manni PH stranded at Raudanes. Small leak but no pollution.
9/5	Digranes NS stranded at Skeggjastadur. Size 14,84 bt.
19/5	Sæfari SK 100 sank in Skagafjordur. Size 4.6 bt.
2/6	Oil barge "Bark" full of oil loosened from its tugboat "Togarinn" and began to drift close to shore.
11/6	Gretti TFZT stranded at Stykkisholmur. No leak. Size 397 bt.
10/7	Sæborg NS 40 sank 10 nm NE of Bjarnarey. Size 11.2 bt.
31/7	Gladur SH stranded at Stykkisholmur. Size 5,84 bt.

19/8	Sörli ST, Þaralatusfjordur. 400 ltr of oils on board. No leak. Size 5,85 bt.
22/8	Óskar SK stranded in Skagafjordur. Size 11,13 bt.
25/10	Hannes Þ. Hafstein stranded in Sandgerdi. Size 40,73 bt.
3/11	Fjordvik stranded at Helguvik. Leak and some oil pollution. Size 3.091,00 bt. 
25/11	Núpur BA stranded at Patreksfjordur. Size 358,00 bt.

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 not only dedicated to pollution patrols but as well other law enforcement tasks and sea ice patrols. Patrol hours with fixed wing a/c increased between years by 64% and with helicopters by 33%.

Maritime surveillance [h]			
	Fixed wing	Helicopters	RPAS
2018	154	128	0
2017	94	96	0
2016	188	77	0

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.

14 May 2018	Oil pollution control exercise conducted in Skutulsfjordur/Isafjordur, West Iceland. Contributions: ICGV THOR with oil boom and skimmer; ICG Maritime Surveillance Aircraft; Container with response equipment from town of Isafjordur; Tug boat of Isafjordur port; Staff from Coast Guard, Environment Agency, Transport Authority, and port of Isafjordur. Scenario: Stranded and leaking trawler.
-------------------	---



Attachments

2 - 14 May 2018

From 2 – 14 May the situation of several possible oil spills reported by EMSA was monitored by satellite imagery by ICG and Faculty of Earth Sciences, University of Iceland.

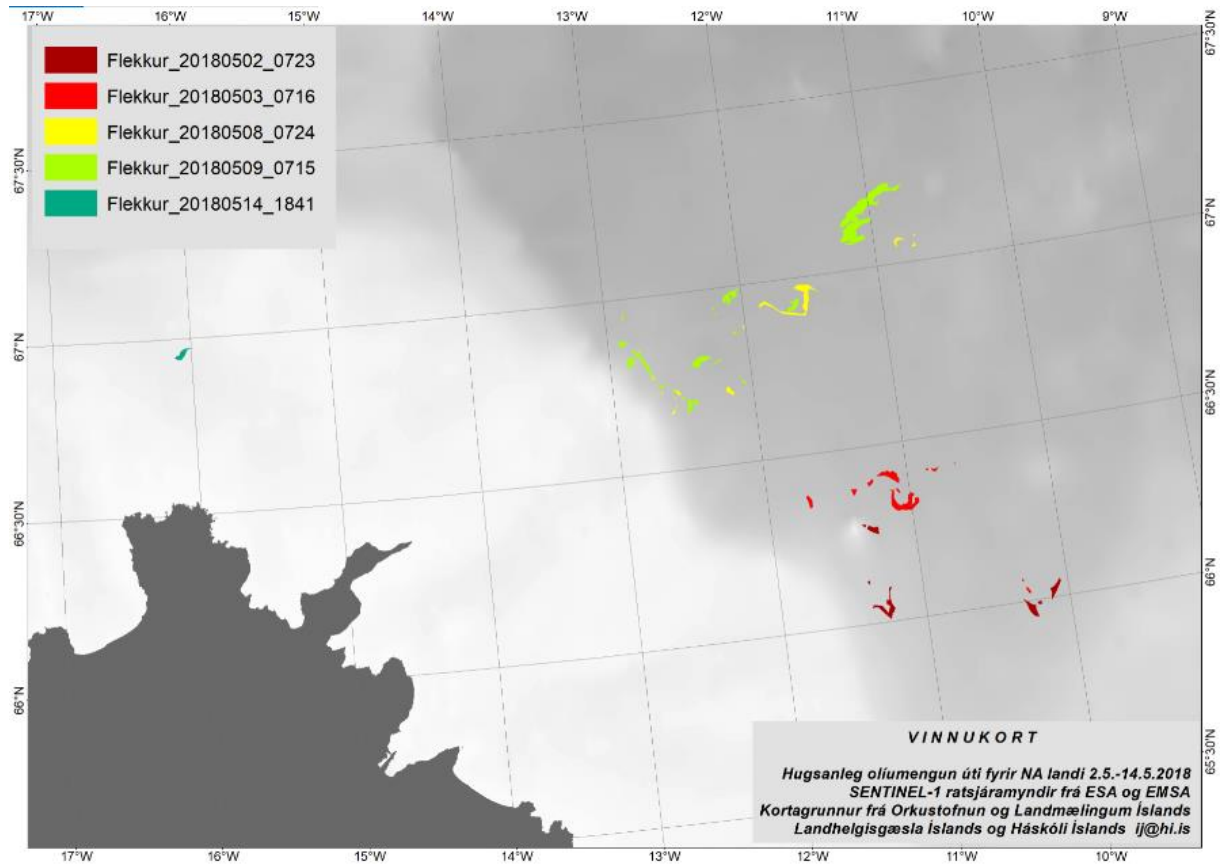


Figure 3: Map by Ingibjörg Jónsdóttir, Faculty of Earth Sciences, University of Iceland.

