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MONITORING DISPOSAL AT SEA

CANADIAN ENVIRONMENTAL SUSTAINABILITY INDICATORS



Canada 

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Monitoring disposal at sea

Disposal at sea is the deliberate discarding of approved material at sea. In Canada, it is illegal to dispose of material at sea without a permit. Permits are issued for the disposal of non-hazardous material when it is determined to be the most environmentally preferable and practical alternative. The materials disposed of at sea are primarily dredged material, fish waste or excavation waste disposed of from ships, aircraft, platforms or other structures.

Key results

- Since 2007, there has been no evidence of marine pollution from disposal activities at monitored ocean disposal sites

Table 1. Number of monitored ocean disposal sites with no evidence of marine pollution from disposal activities, Canada, 2007 to 2019

Year	Number of sites monitored	Number of sites with no evidence of marine pollution from disposal activities	Performance target met
2007	6	6	Yes
2008	20	20	Yes
2009	6	6	Yes
2010	8	8	Yes
2011	7	7	Yes
2012	11	11	Yes
2013	12	12	Yes
2014	19	19	Yes
2015	11	11	Yes
2016	11	11	Yes
2017	14	14	Yes
2018	13	13	Yes
2019	13 ^[A]	13	Yes

Note: Year refers to fiscal year, which runs from April 1 to March 31. The year 2007 therefore refers to April 1, 2006 to March 31, 2007. ^[A] In 2019, 13 sites were monitored out of a total of 104 active disposal sites. Consult the [Data sources](#) section for more information.

Source: Environment and Climate Change Canada (2020) Disposal at Sea Program.

Before a permit is issued, an assessment is conducted to ensure that disposal at sea is the environmentally preferred option and that no harm to human health or the marine environment will result from the disposal. As part of this assessment, a set of "impact hypotheses" are prepared, documenting any environmental effects that may result from the disposal operations. Based on these hypotheses, monitoring is conducted at a number of disposal sites each year.

Each year in Canada, between 2 and 4 million tonnes of material are disposed of at sea. About 90% of this material is dredged sediment from estuarine or marine sources or excavated inorganic material from land-based sources.¹

In line with international obligations,^{2,3} Canada protects its marine environment by regulating disposal at sea through a permit system under the [Canadian Environmental Protection Act, 1999](#).

¹ Environment and Climate Change Canada (2017) [Disposal at Sea: Program Information](#). Retrieved on July 21, 2020.

² International Maritime Organization (2020) [Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter](#). Retrieved on July 21, 2020.

³ International Maritime Organization (2020) [1996 Protocol to the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, 1972](#). Retrieved on July 21, 2020.

About the indicator

What the indicator measures

The indicator reports the number of monitored ocean disposal sites that show no evidence of marine pollution from disposal activities.

Why this indicator is important

Managing what is discarded at sea prevents marine pollution by regulating the material disposed of at marine disposal sites. Environment and Climate Change Canada's Disposal at Sea Program's annual performance target is for none of the ocean disposal sites to show any evidence of marine pollution from permitted disposal activities. This target demonstrates that ocean disposal sites are being used sustainably and that sites remain unpolluted, as outlined by the performance target.



Healthy coasts and oceans

This indicator supports the measurement of progress towards the following [2019 to 2022 Federal Sustainable Development Strategy](#) long-term goal: Coasts and oceans support healthy, resilient and productive ecosystems. It is used to assess progress towards the short-term milestone: From 2019 to 2022, continue to monitor Canada's ocean disposal sites and ensure that 100% of monitored sites are being used sustainably.

Related indicators

The [Marine pollution spills](#) indicator reports on oil spills along Canada's coasts that are detected through surveillance. This type of marine pollution could affect shellfish growing areas.

The [Releases of harmful substances to water](#) indicators track human-related releases to water of 3 toxic substances, namely mercury, lead and cadmium, and their compounds. For each substance, data are provided at the national, provincial/territorial and facility level and by source.

The [Solid waste diversion and disposal](#) indicator reports on the total quantity and the quantity per person of non-hazardous solid waste diverted and disposed by municipal governments and businesses in the waste management industry, the diversion rate by source (residential and non-residential) and the types of materials diverted.

Data sources and methods

Data sources

This indicator relies on monitoring data compiled by Environment and Climate Change Canada's Disposal at Sea Program. Environment and Climate Change Canada conducts monitoring activities to verify that permit conditions are met and that scientific assumptions made during the permit review and site selection process are correct and sufficient to protect the marine environment. These monitoring activities are conducted in conjunction with researchers from other departments with an interest in ocean sciences, such as Fisheries and Oceans Canada and Natural Resources Canada.

More information

The number of monitored sites follows monitoring guidelines to ensure studies can detect environmental degradation at disposal sites.⁴ Monitoring is typically performed at a minimum of 3 sites in the Atlantic region, 1 site in the Quebec region, 1 site in the Prairie and Northern region, and 2 sites in the Pacific and Yukon region. This does vary from year to year based on the disposal activities and the number of active disposal sites per region. Monitoring studies also follow technical guidance on physical, chemical and biological monitoring.^{5,6}

For this indicator, disposal sites in the Atlantic, Quebec, Prairie and Northern, and Pacific and Yukon regions were assessed between 2007 and 2019 (Table 2).

Table 2. Number of monitored disposal at sea sites by year and region, Canada, 2007 to 2019

Year	Atlantic	Quebec	Prairie and Northern	Pacific and Yukon	All regions
2007	2	3	1	n/a	6
2008	6	9	4	1	20
2009	2	4	n/a	n/a	6
2010	1	7	n/a	n/a	8
2011	2	3	2	n/a	7
2012	3	3	n/a	5	11
2013	3	5	3	1	12
2014	3	7	8	1	19
2015	4	4	n/a	3	11
2016	2	4	1	4	11
2017	2	7	n/a	5	14
2018	3	6	n/a	4	13
2019	4	6	n/a	3	13

Note: n/a = not applicable. Year refers to fiscal year, which runs from April 1 to March 31. The year 2007 therefore refers to April 1, 2006 to March 31, 2007.

Source: Environment and Climate Change Canada (2020) Disposal at Sea Program.

Annual details of the monitoring projects are published in the [Canadian Environmental Protection Act Report](#). They are also submitted to the International Maritime Organization as part of Canada's obligations under the 1972 London Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter and the 1996 Protocol to the London Convention.

There is a time lag of about 1 year between the conduct of the monitoring studies and the reporting on those studies. This time lag is due to the time required to perform the monitoring, compile the data at the

⁴ Environment Canada (1998) [National Guidelines for Monitoring Dredged and Excavated Material at Ocean Disposal Sites](#). Retrieved on July 21, 2020.

⁵ Environment Canada (1998) [Technical Guidance for Physical Monitoring at Ocean Disposal Sites](#). Retrieved on July 21, 2020.

⁶ Environment Canada (1994) [Guidance Document on Collection and Preparation of Sediments for Physicochemical Characterization and Biological Testing](#). Retrieved on July 21, 2020.

national level, and analyze, review and report the results. The current version of the indicator therefore presents monitoring studies conducted up to 2019 (ending on March 31, 2019).

Caveats and limitations

Disposal sites are monitored on a representative basis, so not all active disposal sites are monitored each year. Major disposal sites, at which over 100 000 m³ of materials are disposed of annually, are monitored at least once every 5 years. Minor disposal sites, at which less than 100 000 m³ of materials are disposed of annually, are monitored on a less regular basis, but monitoring priority is typically given to sites with nearby sensitive areas like marine habitats.

Resources

References

Canadian Environmental Protection Act Registry (2020) [Annual Report to Parliament for April 2018 to March 2019](#). Retrieved on July 21, 2020.

Environment and Climate Change Canada (2020) [Disposal at sea](#). Retrieved on July 21, 2020.

Environment Canada (1994) [Guidance Document on Collection and Preparation of Sediments for Physicochemical Characterization and Biological Testing](#). Retrieved on July 21, 2020.

Environment Canada (1998) [National Guidelines for Monitoring Dredged and Excavated Material at Ocean Disposal Sites](#). Retrieved on July 21, 2020.

Environment Canada (1998) [Technical Guidance for Physical Monitoring at Ocean Disposal Sites](#). Retrieved on July 21, 2020.

Related information

[1996 Protocol to the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, 1972](#)

[Canadian Environmental Protection Act annual reports](#)

[Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter](#)

[Disposal at Sea](#)

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