



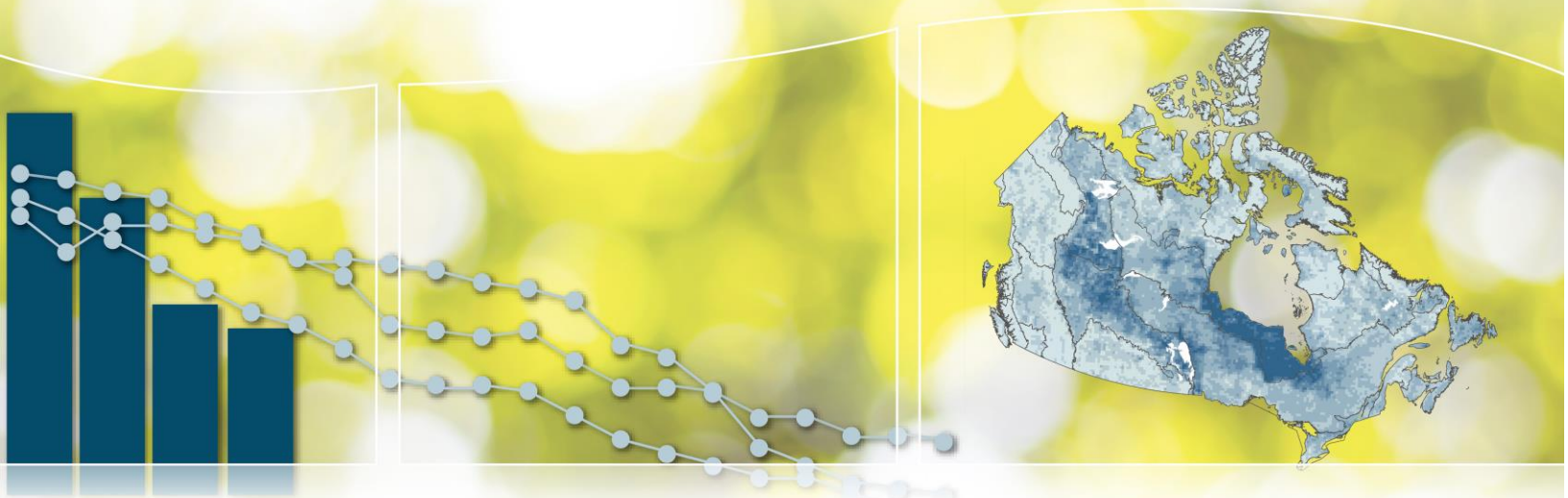
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Canadian Environmental Sustainability Indicators

Monitoring disposal at sea



Suggested citation for this document: Environment and Climate Change Canada (2017) Canadian Environmental Sustainability Indicators: Monitoring disposal at sea. Consulted on *Month day, year*. Available at: www.canada.ca/en/environment-climate-change/services/environmental-indicators/monitoring-disposal-at-sea.html.

Cat. No.: En4-144/5-1-2017E-PDF

ISBN: 978-0-660-23544-8

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Monitoring disposal at sea

October 2017

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Monitoring disposal at sea indicator

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

Key results

- Since 2007,¹ there has been no evidence of marine pollution from disposal activities at monitored ocean disposal sites.
- Environment and Climate Change Canada's performance target is that none of the monitored sites should show any evidence of pollution.

Table 1. Monitored ocean disposal sites with no evidence of marine pollution from disposal activities, Canada, 2007 to 2016

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

Note: Year refers to fiscal year, which runs from April to March. The year 2016 therefore refers to April 1, 2015 to March 31, 2016.

Source: Environment and Climate Change Canada (2017) Marine Protection Program.

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.²

¹ Year refers to fiscal year, which runs from April to March. The year 2007 therefore refers to April 1, 2006 to March 31, 2007

² Environment and Climate Change Canada (2014) [Disposal at Sea: General Information](#). Retrieved on May 29, 2017.

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

Before a permit is issued, an assessment is conducted to ensure 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.

About the indicator

What does the indicator measure

The indicator shows if marine disposal site activities have an environmental impact. It reports the number of monitored ocean disposal sites that show no evidence of marine pollution from disposal activities.

Why is this indicator important

Managing what is discarded at sea prevents marine pollution by controlling the material disposed of at marine disposal sites. Environment and Climate Change Canada's Marine Protection Program has an annual performance target of none of the ocean disposal sites showing any evidence of marine pollution from disposal activities. This target demonstrates that ocean disposal sites are being used sustainably and that impacts of the sites are as predicted.



Healthy coasts and oceans

This indicator supports the measurement of progress towards the following [2016–2019 Federal Sustainable Development Strategy](#) long-term goal: Coasts and oceans support healthy, resilient and productive ecosystems.

³ London Convention, 1972 ([Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter](#)) and the [1996 Protocol to the London Convention](#).

Data sources and methods

What are the data sources

This indicator relies on monitoring data compiled by Environment and Climate Change Canada's Marine Protection 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 sites monitored follows monitoring guidelines to ensure studies can detect environmental degradation at disposal sites.⁴ Monitoring studies also follow technical guidance on physical, chemical and biological monitoring.^{5,6}

For this indicator, disposal sites in the Pacific, Atlantic and Arctic oceans were assessed between 2007 and 2016 (Table 2).

Table 2. Number of monitored disposal at sea sites by year and region

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

Note: n/a = not applicable. Year refers to fiscal year, which runs from April to March. The year 2016 therefore refers to April 1, 2015 to March 31, 2016.

⁴ Environment Canada (1998) [National Guidelines for Monitoring Dredged and Excavated Material at Ocean Disposal Sites](#). Retrieved on May 29, 2017.

⁵ Environment Canada (1998) [Technical Guidance for Physical Monitoring at Ocean Disposal Sites](#). Retrieved on May 29, 2017.

⁶ Environment Canada (1994) [Guidance Document on Collection and Preparation of Sediments for Physicochemical Characterization and Biological Testing](#). Retrieved on May 29, 2017.

Source: Environment and Climate Change Canada (2006 to 2015) Annual Compendium of Monitoring Activities. Marine Protection Program.

Annual details of the monitoring projects and management action taken as a result 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 London Protocol to the 1972 Convention.

There is a time lag of about one 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 national level, and analyze, review and report the results. The current version of the indicator therefore relates to monitoring studies conducted up to fiscal year 2016 (ending on March 31, 2016).

What has recently changed

Starting with this year, the indicator reports on the number of monitored disposal sites with no evidence of marine pollution from disposal activities. In the past, the indicator reported on the number of monitored sites requiring management action for reasons other than marine pollution (for example, navigational safety).

More information

Permit assessments and the controls placed on disposal at sea activities should prevent marine pollution. The indicator published this year is more clearly targeted at this objective. Representative disposal sites are monitored to verify that marine pollution has not been caused by disposal at sea activities and to determine if the effects observed at disposal sites are different than predicted.

Information about the lack of marine pollution represents a better measure of sustainability over time.

What are the caveats and limitations

Disposal sites are monitored on a representative basis. Not all disposal sites used each year are monitored.

Resources

References

Environment Canada (1994) [Guidance Document on Collection and Preparation of Sediments for Physicochemical Characterization and Biological Testing](#). Retrieved on May 29, 2017.

Environment Canada (1998) [National Guidelines for Monitoring Dredged and Excavated Material at Ocean Disposal Sites](#). Retrieved on May 29, 2017.

Environment Canada (1998) [Technical Guidance for Physical Monitoring at Ocean Disposal Sites](#). Retrieved on May 29, 2017.

Environment Canada (2006 to 2010) Annual Compendium of Monitoring Activities at Disposal at Sea Sites reports.

Related information

[Disposal at sea
London Convention, 1972, and 1996 Protocol to the London Convention](#)

Additional information can be obtained at:

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