Environment and
Climate Change Canada

Environnement et
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National Pollutant Release Inventory Survey of Data Users 2019

Final Report

Canada

SUMMARY

Background and Objectives

The National Pollutant Release Inventory (NPRI) was established in 1992 to inform Canadians about pollutants in their communities and serves as a public inventory of releases, disposals, and transfers. Organizations in Canada, including manufacturers, mines, oil and gas operations, power plants, and sewage treatment plants are required to report to the NPRI. Governments, companies, organizations, researchers, and citizens are all potential users of NPRI data. A survey of data users seeks to understand the needs of users and satisfaction with the inventory, particularly given additions to the NPRI website that have taken place in the recent past to improve the users' ability to use and interpret the data.

Methodology

An online survey was conducted with 182 individuals who have used NPRI data and the website to gather information on their data needs and experiences with the inventory and website in order to make both easier to understand and navigate. The survey was conducted between mid-July and mid-August, 2019, from two sources: a client-supplied list of known data users and an open source link used with a general announcement about the survey on social media and the NPRI website on canada.ca. A series of 14 follow-up interviews were also conducted in the second half of August with some survey respondents to obtain more detailed information and context about use of the NPRI as well as sources of satisfaction and areas for improvement.

Key Findings

- Among the 182 respondents in the survey, just over one in three (36% or 58 individuals) reported that they had not used the NPRI.

  - Many of these are members of the general public, followed by municipal government or industry representatives.

  - The large majority agree the NPRI could be of benefit to them (89%), either professionally or personally. Barriers to use include a lack of understanding of what it contains, how to use it, or awareness that it can be accessed for personal use.

  - Supports of interest in beginning to use the Inventory are step-by-step guides (62%) and example study cases (52%), along with video tutorials (48%).

- Among the 64% of the sample who are NPRI users, almost all use it for professional purposes, to analyze sectors or historical trends, conduct environmental risk assessments or identify pollutant releases in specific areas, or to hold discussions with a facility (ranging from half to one in three, respectively).

- Most have been using the NPRI for more than five years and heard about the Inventory through the canada.ca website or directly from the Department. All but a handful access the tool through the NPRI canada.ca website.

- The most prevalent data products used are the query site (60%), the single year flat files (44%), and the raw, disaggregated data (36%) or the aggregated release data (32%). Both of the information products (NPRI Sector Overview and Data Highlights) are used by about half of users.

- Most users accessed the tool for specific facilities, pollutants, or years (74 to 77%). About half accessed the NPRI for data on specific locations, industry sectors, or release medium.

- About half said they also relied on the substance list by threshold category webpage (51%), the guide for reporting to the NPRI (48%), or the history of reporting requirements (45%), and 39% have used the webpage on using and interpreting data from the NPRI.

- Elements of satisfaction with the NPRI that are highest include support provided by staff (64% to 67%), as well as ease of understanding and interpreting the data and coverage of substances (57% to 58%). In all areas tested, between 11% and 24% of users indicated dissatisfaction. Quality control/assurance, and ease of locating files see the highest levels of dissatisfaction (24% and 20% respectively), followed by timeliness for release of data (19%).

- These results were echoed in follow-up interviews where accuracy and transparency of report (methods used to obtain numbers, concerns about lack of verification and about manual entry by emitters) was cited most often, along with concerns about the complexity of the system in terms of organization and use of technical language, along with lack of easy visualization tools, making it difficult for the general public and/or beginners to use.

- As with non-users, users also agreed step-by-step guides (63%) and study cases (53%) would be helpful support resources.

- Among the 138 NPRI users in the sample, 74 indicated they combine the data with other sources, including other environmental information (61%), health-related data (35%), and substance information (33%).

- Anticipated future use of the NPRI were most often predicted to be in areas related to sources of pollutants in particular/one's own community, levels of pollutants in ones' community, followed by use for academic purposes, or to track impacts of climate change over time.

- Generally, visualization of the data is what users indicated they would most like to see added in any expansion of the NPRI, including shape files (41%) and online visualization (38%). This was echoed in follow-up interviews among those suggesting greater capacity to visualize the data would make it more access to the general public.

- Three in four said they would be interested in updates about the NPRI in a range of areas (e.g., data publication, consultations on changes, upcoming workshops). For most, email is the most convenient way of obtaining these updates. These results also echo what was described in interviews as a desire for more information about what has changed, how and why, along with any details necessary when trying to make comparisons over time.

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INTRODUCTION

Background and Objectives

The National Pollutant Release Inventory (NPRI) was established in 1992 to inform Canadians about pollutants in their communities and serves as a public inventory of releases, disposals, and transfers. Organizations in Canada, including manufacturers, mines, oil and gas operations, power plants, and sewage treatment plants are required to report to the NPRI. In all, the inventory tracks over 320 pollutants from over 7,000 facilities throughout Canada. The public inventory is intended to help Canadians understand pollutants released in their communities, encourage action to reduce pollution, and track changes in pollutants over time. Governments, companies, organizations, researchers, and citizens are all potential users of NPRI data. The NPRI website has been designed and updated to help users understand and navigate the data. Users have the ability to search for information in their area, source information for projects and presentations, read data highlights and overviews, or search datasets and the complete inventory database.

A survey of reporters and data users was conducted in 2007 to understand who was using the inventory, their opinions on reporting requirements, and satisfaction with the NPRI. The 2019 survey of data users seeks to understand the needs of users and satisfaction with the inventory, particularly given the additions to the NPRI website that have taken place since the last iteration of the survey, developed to improve the users' ability to use and interpret the data. The primary objectives of the 2019 Survey of Data Users are:

- To better understand data user needs and preferences in accessing, using, analyzing, and interpreting NPRI data.
- To determine their level of satisfaction with the current collection of data products and identify areas for improvement.
- To better understand how they use NPRI data and determine the level of interest in tools to analyze, sort and visualize the data.
- To determine the level of satisfaction with the supporting documentation provided on the website to help users interpret and use NPRI data.
- To better understand their needs in terms of communicating NPRI information.

Methodology

Online Survey

The online survey was conducted with 182 individuals who have used NPRI data and the website to gather information on their data needs and experiences with the inventory and website in order to make both easier to understand and navigate.

The survey questionnaire was designed by Environment and Climate Change Canada (ECCC), and reviewed by EKOS Research for clarity, comprehensiveness, skip logic, and flow. The questionnaire was subsequently programmed and translated by EKOS Research, each of which was reviewed by ECCC. The questionnaire was tested with members of the NPRI Work Group between July 10 and 12 (17 test cases) with only minor changes to the wording and skip logic. The survey required an average of 18 minutes to complete and was conducted between July 16 and August 19, 2019. A total of five email invitations/reminders were sent (one per week), with the last one extending the date to augment response. A series of reminder calls were also made in the fifth week of the survey to speak with non-respondents from the list-based sample provided by the Department.

A total of 281 emails were sent from the list-based sample, each with a dedicated Personal Identification Number included in the survey link provided. Another 33 entries from the list-based sample provided by ECCC were sent the generic invitation to the open link version of the survey since there was no specific contact provided for these organizations. Of the 281 invited to the PIN-controlled version of the survey, two entries bounced as invalid email entries. Among the remaining 279, 67 completed the survey. Another 19 started the survey, but failed to complete it. The overall response rate based on the 67 who completed the survey among the 279 receiving the invitation is 24%.

It is impossible to tell what the response rate is in the open link since the survey was generally advertised on the ECCC website and through social media networks, in addition to the 33 organizations in the list-based sample. Overall, 197 entered the link and moved past the introduction. Of these, 115 completed the survey and 82 started the survey, but dropped off before completing it.

Survey data gathered from the list-based sample and open link were combined and are reported without the application of any weight, as characteristics of the population of users of the NPRI is not known.

A margin of error is also not applicable since a census of all members of the population was attempted in the list-based, PIN-controlled sample, and there was no random selection process used in the open link survey. Overall, since the degree of representativeness of the population of NPRI users cannot be assessed, either from the list-based sample or the open link, and results are combined from the two sources in treatment of the data, the findings should be generally considered qualitative in nature.

Interviews

In addition to the survey, a small series of 14 in-depth interviews were conducted by telephone with users of the NPRI who had completed the survey and indicated a willingness to be interviewed by telephone. For some, a $75 incentive was offered, although this was not made available to federal government employees, and was not accepted by a further four participants who believed it to be a conflict of interest. The interviews addressed

more detailed context of how they have used the inventory, as well as issues, limitations, or shortcomings they have experienced with it, along with the value of the NPRI for their particular applications. Lastly, suggestions for improvements and other changes were also explored. The length of the interview ranged from 15 to 35 minutes depending on the participant's use of the NPRI.

Note to Readers

Results are presented in text, charts, and tables. Bulleted text is used to describe specific segments of the sample, if they are statistically and substantively different from the overall results for the entire sample (i.e., at least 5% or more from the overall mean in any given subgroup). Differences not noted in the report can be assumed to be either not statistically significant in their variation from the overall result, judged to be too small to be noteworthy, or the number of cases in the sub-sample is too small to be reliable.

Readers should also note that survey findings are presented in the report in terms of valid percentage of responses, excluding those who said "don't know", "not applicable", or otherwise did not provide a response on any given question. Results may also not total to 100% due to rounding.

Results of the interviews are interspersed with the survey findings in relevant thematic areas throughout the report highlighted in grey. In some cases results described may be based on only two or three interview participants, typically noted as "a few" or "several". In some cases, results are described on the basis of input from one participant, also reflected in the use of quotes meant to be illustrative of key points. Therefore, qualitative findings are meant to be illustrative and help to provide added context to the survey findings and should be interpreted with caution.

DETAILED SURVEY FINDINGS

USE OF NPRI

In the combined sample collected, two in three (64%) have used the NPRI, although 36% have not. The following table presents the types of organizations respondents represent among those using and not using the NPRI, indicating a wide variety of use and interest. Representatives from industry are the largest proportion of respondents across users and non-users of the Inventory (23% of those in the sample who have used the NPRI and 16% of the 58 individuals in the sample who have not used the NPRI). Government representatives are also a large proportion of the sample who have used the NPRI. In fact, four in 10 of those in the sample who have used the NPRI come from federal, provincial, or municipal governments.

Among non-users, individual citizens and those in municipal government form large portions of the sample (33% and 16%, respectively).

Table 1: Types of Organizations Represented in the Sample by NPRI Use/Non-Use

What type of organization are you primarily affiliated with?	*NPRI Users n=112*	*NPRI Non-Users n=58*
Industrial facility/association	23%	16%
Provincial government	13%	3%
Federal government - Environment and Climate Change Canada	12%	2%
Federal government - Health Canada	12%	0%
Environmental Non-governmental organizations (NGOs)	8%	3%
Academic institution	5%	3%
Individual citizen	4%	33%
Municipal government	4%	16%
Commercial/Institutional	2%	5%
Federal government - Other	1%	3%
Students	1%	3%
Other	13%	12%

TECHNICAL KNOWLEDGE (USERS & NON-USERS)

Nearly nine in 10 (87%) of survey respondents rated their knowledge as high when it comes to searching the Internet for specific information. Seven in 10 (73%) said they are strong in their knowledge of spreadsheets to capture and manipulate data. This is considerably higher, however, among NPRI users, particularly advanced users (81% and 85% respectively), compared with 61% of non-users. Similarly, seven in 10 (73%) of the sample also rated their knowledge and comfort as high when it comes to using search functions and filters in online tools. Half (51%), however, said they are comfortable with using information databases to perform advanced analysis. This is higher among NPRI users in general, and advanced users in particular (58% and 63%, respectively) compared with non-users (41%).

Chart 1: Technical Knowledge (Users & Non-Users)

"How would you describe your level of knowledge and comfort with…?"

Category	Not knowledgeable/comfortable (1-2)	Average (3)	Knowledgeable/comfortable (4-5)
Searching the Internet to find specific information	4	7	89
Using spreadsheets to capture and manipulate data	10	9	81
Using search functions and filters in an online data tool for specific information	7	15	77
Using information data bases to perform advanced analysis	25	17	58

■ Not knowledgeable/comfortable (1-2)   ■ Average (3)   ■ Knowledgeable/comfortable (4-5)

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POTENTIAL AMONG NON-USERS OF THE NPRI

Among the 36% of survey respondents indicating they have not used the NPRI, all but a handful (89%) believe it could be of benefit to them, with application shared equally between personal and professional benefit. Half of non-users who indicated interest said they would be likely to use it (4 or 5 on the 5-point scale from not at all to very likely). Only nine per cent said they would not be very likely to use it.

Preferred methods of contact for more information would be through the NPRI website (74%) and also through general Internet search, such as Google (45%).

Reasons for not having used the NPRI in the past largely relate to lack of awareness (76%):

- Generally: 51%

- Lack of understanding of what it contains and how to use it: 18%; or

- Lack of understanding that it can be accessed for personal use: 7%

Among those indicating an interest, some of the topic areas they would be most interested in include background about the NPRI (what information it contains, how it is collected and maintained, etc.), as well as how to use it (how to use it for specific purposes, how best to derive relevant information from it). A few others said they were interested in understanding the levels and types of pollutants in areas of interest, and that a visual, interactive map would be useful.

Also among those interested, information requirements to begin using the NPRI include step-by step guides (62%), example study cases (52%) and video tutorials (48%), along with live webinar training (40%).

Table 2: Views of Non-Users of the NPRI

Do you think that NPRI data could benefit or be of interest to you?	n=54
Yes	89%
No	11%
In what capacity would NPRI data be most useful to you?	n=46
Professionally	28%
Personally	26%
Both	46%
How likely are you to use NPRI data?	n=46
Not likely (1-2)	9%
Moderately likely (3)	39%
Likely (4-5)	52%

How could NPRI best reach out to you to provide more information?	n=47
NPRI Canada.ca website	74%
General Internet Search	45%
Social Media	26%
Canada Gazette	6%
Other website	4%
Other	17%
Why haven't you used NPRI data in the past?	n=68
Unaware	51%
Need better understanding of what I can find there	18%
Not relevant	9%
Did not realize could access for personal use	7%
Too technical	3%
Other	12%
What would you need in order to get started using NPRI data?	n=42
Step-by-step guides	62%
Study cases (examples of how others use the data)	52%
Video tutorials	48%
Live webinar training	40%
In class training	19%
Other	12%

PURPOSE OF NPRI

Overall, among users of the NPRI, very few use it for personal application, and if they do, they use it for both professional and personal reasons (17%). Only four per cent use it exclusively for personal applications.

More specifically, just over half of users (55%) indicated they rely on the NPRI to analyze sectors and/or historical trends, just under half (46%) use it for environmental risk assessment, and another 40% use it to identify pollutant releases in a specific area or community. Three in 10 hold discussions, at least in part based on NPRI data. Just over one in four (27%) use it for policy development and 19% use it for research, including ongoing tracking of land, air, and water quality, as well as establishing linkages with other data sources. Fewer rely on it for other purposes including quality assurance checks and benchmarking facility performance among other activities.

Chart 2: Purpose of NPRI

"What was your purpose for using the data?"

Purpose	Percentage
Analysis of sectors or trends	55%
Environmental / risk assessment	46%
Identify pollutant releases in a specific area / community	40%
Discussions with a facility (or facilities)	30%
Policy development	27%
For use in research	19%
Benchmarking facility performance	16%
Quality assurance checks of your NPRI reports	16%
Statistical purposes	12%
Academic study	10%
Media story	6%
Benchmarking for competitive purposes	5%
Other	15%

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- More information is provided in Section 2.8 about tendency to use various NPRI data and information products according to the purpose of use of the NPRI.

Use of the NPRI

Each of the interview participants said they use the NPRI for professional uses, and only a few also access it for personal interest. Overall, participants' main use of the NPRI system consists of accessing the data to conduct various analyses, but use and benefits of the system varies slightly depending on the organizational context and unique role within their organization. Some participants had been using the NPRI for years and have a high level of knowledge and familiarity while others, particularly academics, had made limited use of the system.

Those who access the NPRI as a part of their work with an industrial facility or organization reported primarily using the service to upload data to the NPRI using the Single Window Information Manager (SWIM) portal, conducting quality control of data entered, and accessing data to run analyses including monitoring long-term emissions trends and industry benchmarking. Some also described accessing the NPRI for the purposes of consultation with the NPRI on changes to reporting requirements, advocating for their industry or sector, and establishing internal emissions priorities and decision-making. A few also noted they use the NPRI data to support or refute claims made by the NPRI regarding their industry or sector. These participants typically have a high degree of familiarity with the NPRI, having intimate knowledge of or experience with the upload process, quality control measures, and methods of assembling data for analysis.

Those working with NGOs reported accessing the NPRI data primarily for either specific substances or emitters for the purpose of advocating policy changes and responding to community concerns. Some also indicated use of the data to help identify long term trends, develop modeling, and identify potential links to areas such as health.

Similarly, those working with academic institutions said they access the data to run analyses for various research projects, including potential health implications of specific emissions and the development of mathematical models to predict emissions based on particulates. Participants who use the NPRI as part of their work for the government similarly use the NPRI data for analysis on health and environmental impacts of various emissions.

Benefits & Value

Overall, interview participants found the NPRI to be a very useful tool that fills a gap of available information on chemical use and emissions. Many took the time to comment on how pleased they are with the overall system.

> *"It remains a very useful tool even with no changes. I'm pretty sure there are improvements to be made, but no major overhaul seems necessary."*

The primary benefit of the NPRI for most participants is how the data is publicly available without the need for access requests, and the data is longitudinal in nature, allowing for analysis on long-term trends and changes. Participants across all backgrounds noted these as positive factors.

"It's essential. When we're assessing a sector and comparing it with another sector or source of air pollution we need that data to do comparisons and also to provide a historical perspective for each sector."

"So as long as it stays as open and easily accessible as it is, that's great I think for researchers like myself who want quick and easy access to the data."

Data access was reported as particularly useful to those in academic, government, and NGO environments, who in some cases said the NPRI is their only available source for the information they require for research or advocacy efforts. Those who use the NPRI for the purposes of emissions modeling noted its use for validation of their results. Those working with NGOs noted the NPRI's usefulness in highlighting potential areas of focus for advocacy and the associated benefit of then using that data to hold industry and government to account from a regulatory perspective.

"You can see five years' data at a time, that's really important. And being able to look over the decade and see what's changed, what's improved, what's not."

"From a local perspective, for citizens to be able to go to a local company and say 'look, this is what you're discharging into our community, it's not acceptable' and be talking directly to the company to say 'what can be done? What can you do to reduce your discharges?'"

Participants representing industrial facilities or organizations commented on the NPRI's benefit for benchmarking purposes. The ability to compare and contrast emissions between facilities or sectors was noted as useful to informing internal decision making around ongoing emission strategies. Some said they appreciate the NPRI's use in keeping records of emissions patterns over time for a particular facility or chemical emission.

"I mean it gives context to the numbers that we calculate and it can help sort of inform decisions on what could be maybe more priority contaminants for us compared with other industrial emitters in the country."

"The benefit would be to inform us in our decision making; where we need to reduce our emissions or where we are doing a good job. Those kind of areas where we are trying to make business decisions we can use the NPRI data to prioritize our emission reduction strategy."

SOURCES OF AWARENESS OF NPRI

In terms of where users initially heard about the inventory, the NPRI website on canada.ca (50%) and directly from ECCC are the two primary sources (49%). These are followed at a distance by a general Internet search (15%) and Canada Gazette (12%). A significant proportion simply indicated their employer/supervisor/work colleagues without further specification, shown in the chart under "Other".

Chart 3: Sources of Awareness of NPRI

"Where did you hear about NPRI data?"

Source	Percentage
NPRI Canada.ca Website	50%
Directly from Environment and Climate Change Canada (ECCC)	49%
General Internet Search	15%
Canada Gazette	12%
Other	40%

Only items with 3% or more shown in chart

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n=110

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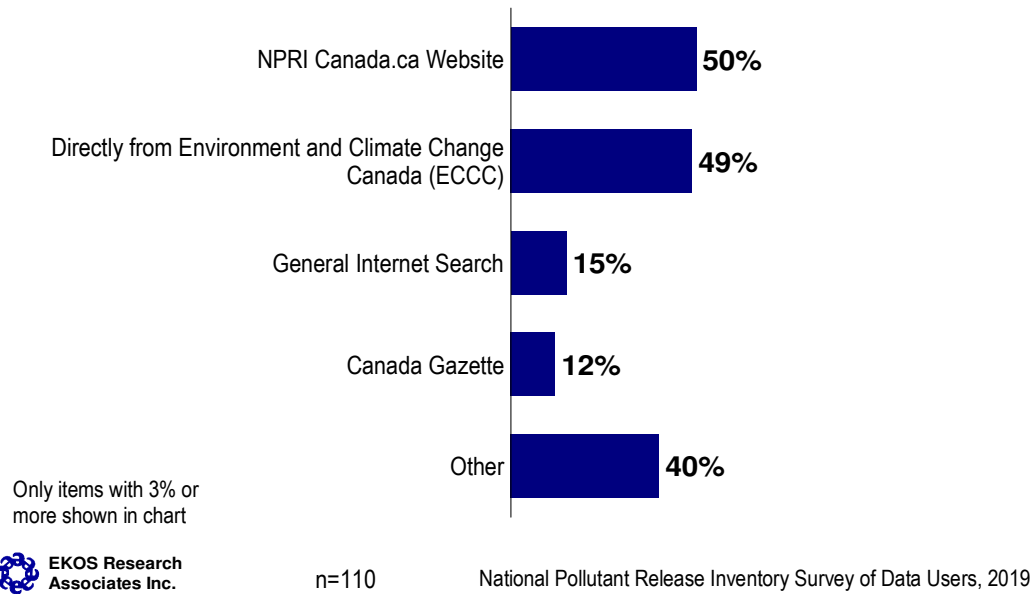
HISTORY OF USE OF NPRI

Most NPRI users have been accessing the Inventory data for more than five years (66%), and few have been using it for less than a year (12%).

Chart 4: History of Use of NPRI

"When did you start using NPRI data?"

Category	Percentage
Last six months	5%
6 months to 1 year ago	7%
1-2 years ago	9%
2-5 years ago	13%
More than 5 years ago	66%
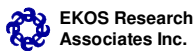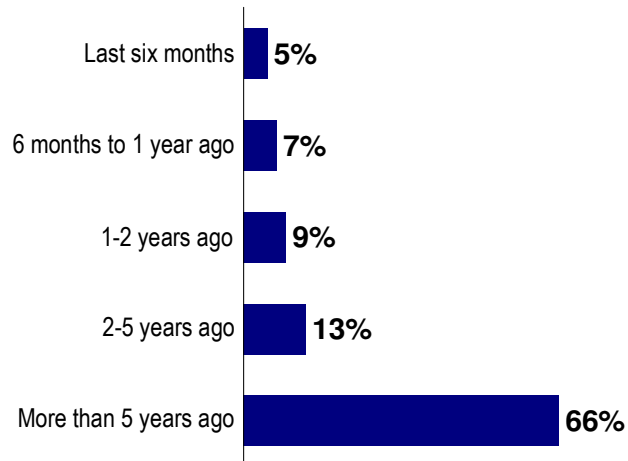
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SOURCES FOR ACCESSING NPRI

All but a handful of those responding to the survey who use NPRI data access it through the NPRI website on canada.ca (92%). Another 20% indicated they also rely on Government of Canada open data, although this is higher among advanced users (27%), and 12% rely on email to the NPRI. Very few use other methods to access the data (8%).

Chart 5: Sources for Accessing NPRI

"How/where do you obtain NPRI data?"

Source	Percentage
From NPRI Canada.ca website	92%
From Government of Canada Open Data	20%
From the NPRI by email	12%
From Government of Canada Open Maps	7%
From ECCC Data Catalogue	3%
Other website	4%
Other	8%

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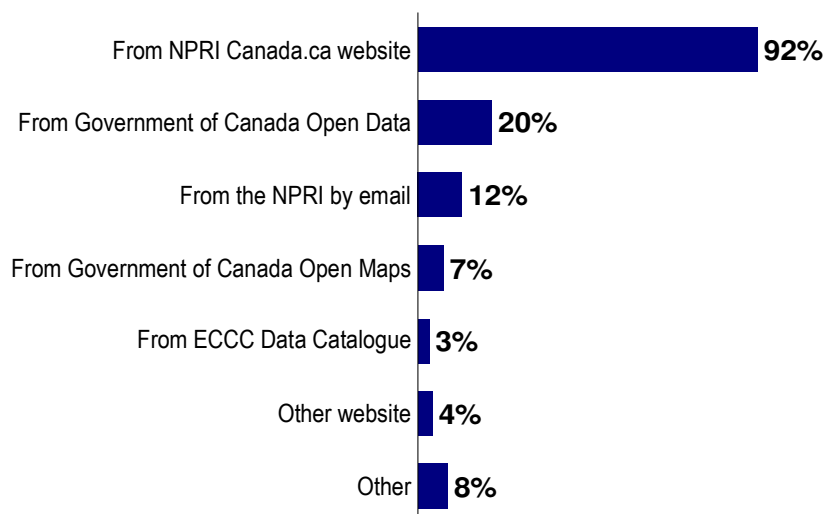
USE OF SPECIFIC NPRI PRODUCTS

The most likely data product to be utilized is the Query Site, used by six in 10 NPRI users in the survey sample. Another 44% reported using Single Year Flat Files. Raw, disaggregated data in the MS Access database are used by one in three (36%), as are aggregated release data from the past five years (32%). Google Earth is used by one in four and fewer (18%) use the Open Mapping Services.

In terms of information products, just under half use the Sector Overview (48%) and slightly fewer use the Data Highlights Report (44%). More than one in three (38%), however, said they do not use either of these NPRI information products.

When asked about how they access and work with NPRI data, users unanimously indicated they use a laptop or desktop computer, rather than a mobile device (not shown in chart). Only a handful also rely on a mobile device for access or use.

Chart 6: Use of Specific NPRI Products

"Have you used any of the following NPRI data products/information products?"

DATA PRODUCTS (n=105)

Product	Percentage
Query Site (Online Data Search)	60%
Single Year Flat Files	44%
Raw disaggregated data (MS Access database from 1994 to current)	36%
Aggregated release data, last 5 years	32%
Google Earth	25%
Open Mapping Services	18%
None - have not used any data products	6%

INFORMATION PRODUCTS (n=94)

Product	Percentage
NPRI Sector Overview	48%
NPRI Data Highlight	44%
None - have not used any information products	38%

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- Those who use the single year flat files are often the people also using the aggregated and disaggregated data, along with the two information products. They are also more apt to say they use them for analysis of sectors or trends or in the case of the aggregated release data or disaggregated statistical purposes.

- Provincial employees are more apt to use single year flat files, aggregated release data and raw, disaggregated data, and the query site than other products. Industry employees are the largest users of all the data products. ECCC employees are more apt to use the query site than other tools, as are employees of environmental NGOs. Among Health Canada employees, the single year flat files are used most often.

- The Query Site is more often used by ECCC employees as well among those using the tool for discussions with a facility and/or analysis of sectors or trends. Those using the query site are also more likely than those using other products to say they look at data for specific facilities, specific years, specific pollutants, or release data to specific medium.

Among the 22 individual users who work with Single Year Flat files, most said having additional years would be helpful. About half said the file contains everything they need, although nearly as many said they need to bring additional sources into the mix to get what they need. Suggesting that users understand that the NPRI cannot be all things to all people, 75% said they are satisfied with the product even if some need to rely on additional information.

Table 3: Views about Use of Single Year Flat Files

Would adding additional years be useful?	*n=22*
Yes	77%
No	23%
Does this file contain all of the information you need or do you need to use multiple files to get the information you need?	*n=34*
Yes, it contains everything needed	53%
No, I need to access and link different files	47%
Satisfaction with Use	75%

Among the 32 users who have used the aggregated release data, just under half were not aware they could use the online data search tool and download the data. There is about equal likelihood that users would download the data on open data or through the online search tool.

When asked about the adequacy of five years of aggregated data, just over half said they would prefer to see data for a longer period.

In terms of the time it takes to obtain the data sought, only one in four suggest it takes too much time. As with Single Year Flat files, about half of users of the aggregated release data report the information is complete and contains everything they need. Similarly, about half said they need to link to other information, although almost half do not. Overall, just over half rated themselves as satisfied with their use of the aggregated release data product, although 18% (or 6 users) said they are not satisfied.

Table 4: Views about Use of Aggregate Release Data

Aggregated data is available for download on the newly redesigned online data search tool under the 'pre-defined queries'. Were you aware of this?	*n=32*
Yes	59%
No	41%
Would you be more likely to download the aggregate data file on?	*n=30*
Online data search tool	30%
Open Data	27%
Both	43%
Is 5 years of data enough?	N=31
Yes	42%
No	58%
How would you rate the time it takes to obtain the information that you are looking for?	*n=31*
Little time (1-2)	26%
Average (3)	48%
Too much time (4-5)	26%
Is there information that you need that is not contained in the file?	*N=21*
No	52%
Yes	48%
Does this file contain all of the information you need or do you need to use multiple files to get the information you need?	*n=24*
Yes	58%
No	42%
Satisfaction with Use	58%

Among the 22 respondents using raw, disaggregated data, only one in three said it does not contain everything they need and half said they link to other sources of information to complete their objective. Nearly two in three said they are satisfied with the information product, and only 11% (4 users) said they are not satisfied.

Table 5: Views about Use of Raw, Disaggregated Data

Is there information that you need that is not contained in the file?	n=22
No	36%
Yes	64%
Do you use other multiple files to get the information you need?	n=20
No	50%
Yes	50%
Satisfaction with Use	63%

By and large, the 25 users of the Open Mapping services agree having access to data for additional years would be useful, and shapefiles would also be helpful. Key types of information seen as valuable are layers for each pollutant and each environmental compartment. Three in four also see utility in layers for each sector and each category. Overall, seven in 10 said they are satisfied with the data tool and only users indicated dissatisfaction.

Table 6: Views about Use of Open Mapping Services

Would adding additional years be useful?	n=25
No	16%
Yes	84%
Would you like shapefiles to be available? The shapefile format is a popular geospatial vector data format for geographic information system (GIS) software	n=28
Yes	89%
No	11%
What kind of additional information would you like to see and use on maps?	n=32
Map layers for each pollutant	97%
Map layers for each environmental compartment	84%
Map layers for each sector	75%
Map layers for each category	72%
Origins and destinations of transfers for off-site disposal, treatment and recycling	47%
Map layers of pollution prevention activities	38%
Other	9%
Satisfaction with Use	71%

The online search tool is used to find information about substances released more often than it is used for other information (79%). About half use the site to gather information about companies, pollution trends, or to create industry sector profiles. Just over one in three use it for complex analysis, although a similar proportion use it to find out about pollution in their own community.

The amount of time required to obtain the information sought is considered appropriate by two in three, although 29% feel it takes too much time. Overall, two in three said they are satisfied with the Query Site and only 15% (9 users) indicated dissatisfaction.

Table 7: Views about Use of the Query Site

For what purpose do you use the online data search tool?	n=63
To find information on substances released	79%
To learn about companies	52%
To look at pollution trends	49%
To do industrial sector profiling	48%
To extract data for complex analyses	38%
To learn about pollution in my community	37%
Other	8%
How would you rate the time it takes to obtain the information that you are looking for?	n=63
Little time (1-2)	33%
Average (3)	38%
Too much time (4-5)	29%
Satisfaction with Use	66%

RECENT TYPES OF INFORMATION USED

The most likely types of information to have been accessed in the NPRI are data for specific substances, pollutants, or years, according to three in four users. About half have accessed data for specific locations, industry sectors, or the release of specific medium (e.g., land, water, air). Fewer have accessed the sector overviews, ECCC analysis or data for transfers and disposals.

Chart 7: Recent Types of Information Used

"Over the last year, what types of NPRI information have you accessed?"

Type	Percent
Data for specific facilities	77%
Data for specific pollutants	76%
Data for specific years	74%
Data for specific geographic locations	54%
Data for specific Industry sectors	51%
Release data to specific medium	50%
Sector overviews	21%
ECCC analysis of the data (data highlights)	18%
Data for transfers and disposals	18%

EKOS Research Associates Inc.   n=104   National Pollutant Release Inventory Survey of Data Users, 2019

INTERPRETIVE TOOLS

Acknowledging that substances and data required to be reported to the NPRI have undergone a number of changes over time, which has an impact on trend analysis, the survey asked users which tools they have used to help them interpret the data. Half of users have relied on the substance list by threshold category webpage to help them interpret the NPRI data. Similarly, 48% have used the guide for reporting to the NPRI (48%) and/or the history of reporting requirements webpage (45%). Slightly fewer (39%) have been using and interpreting data from the webpage.

Chart 8: Interpretive Tools

"What tools/guidance, if any, have you used to help interpret the NPRI data?"

Tool	Percentage
Substance list by threshold category webpage	51%
Guide for reporting to the NPRI (link to webpage)	48%
History of reporting requirements webpage	45%
Using and interpreting data from the NPRI webpage	39%
Other	9%
None	17%

EKOS Research Associates Inc.   n=98   National Pollutant Release Inventory Survey of Data Users, 2019
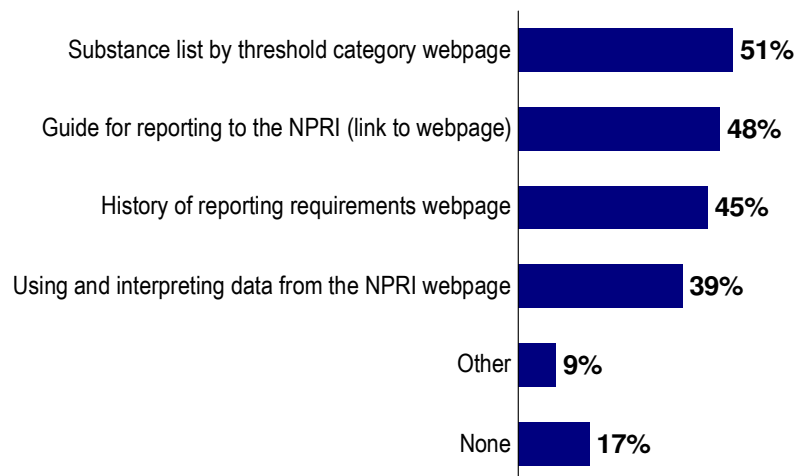
- Those using the aggregated release data are more likely than users of other data products to say they use the substance list by threshold category webpage to help them interpret the NPRI data. Those using the raw, disaggregated data are more apt to use the history of reporting requirements webpage or the guide for reporting to the NPRI.

SATISFACTION WITH SPECIFIC ELEMENTS OF NPRI

Users of the NPRI in the survey sample were asked about their satisfaction with a number of aspects of the inventory and support services. Following are the proportions of those satisfied, along with an indication of the level of dissatisfaction.

Support services – Email and telephone support provided by ECCC staff are areas where two in three of those using them indicated satisfaction. About one in six are not satisfied. Video tutorials – used by only 20 individuals in the sample – are a source of satisfaction for just under half.

Information products – Roughly half of those using the NPRI Data Highlight (53%) and Sectoral Overview (43%) are satisfied, and dissatisfaction is fairly limited (9% to 13%).

NPRI Data Quality Framework and Data

- Ease of understanding and interpreting the data is an area where just over half are satisfied (58%) and only 11% expressed dissatisfaction.

- The coverage of substances sees roughly the same level of satisfaction, while coverage of sectors and facilities and timeliness of the release of data are slightly lower at 48%. In the case of timeliness, dissatisfaction is more notable at 19%.

- Just under half (45%) indicated overall satisfaction with the quality of the data and 17% said they are dissatisfied.

- Just under four in 10 said they are satisfied with the Data Quality Framework (39%), history of reporting requirements (36%), and quality assurance (35%). While 15% to 17% indicated dissatisfaction with the former two, 24% said they are dissatisfied with the quality assurance process.

NPRI Structure – Just under half (46%) indicated satisfaction with the NPRI website on canada.ca, although 18% are dissatisfied. Ease of locating specific field or elements and/or data files are areas where four in 10 are satisfied (44% and 42%, respectively), but 16% to 20% respectively are dissatisfied.

Chart 9a: Satisfaction with Elements of NPRI

"How satisfied are you with the following aspects of the NPRI?"

	Satisfied (4-5)	Dissatisfied (1-2)
Email/online support provided by ECCC staff (n=55)	67%	15%
Telephone support provided by ECCC staff (n=28)	64%	18%
Ease of understanding and interpreting NPRI data (n=106)	58%	11%
Coverage of substances (n=98)	57%	15%
NPRI Data Highlight (n=58)	53%	9%
Coverage of sector/facilities (n=89)	48%	15%
Timeliness of release of data (n=96)	46%	19%
NPRI Canada.ca Website (n=107)	46%	18%

EKOS Research Associates Inc.
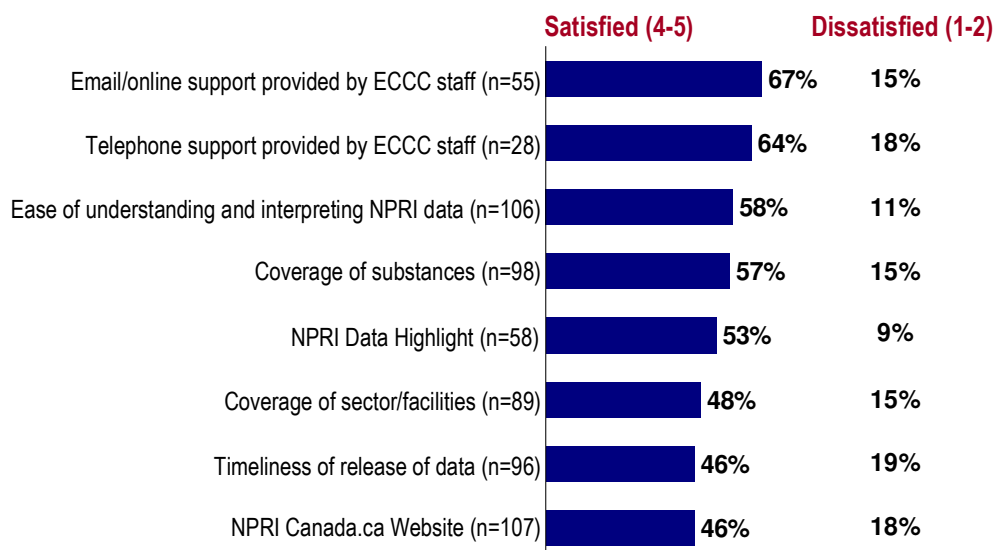
National Pollutant Release Inventory Survey of Data Users, 2019

Chart 9b: Satisfaction with Elements of NPRI

"How satisfied are you with the following aspects of the NPRI?"

	Satisfied (4-5)	Dissatisfied (1-2)
Video tutorials (n=20)	45%	20%
Quality of the NPRI data (n=99)	45%	17%
Ease of locating specific data fields/elements (n=101)	44%	16%
NPRI Sectoral Overview (n=63)	43%	13%
Ease of locating the data files (n=97)	42%	20%
Data Quality Management Framework (n=62)	39%	15%
History of reporting requirements (n=72)	36%	17%
Quality Assurance/Quality Control (n=72)	35%	24%

EKOS Research Associates Inc.
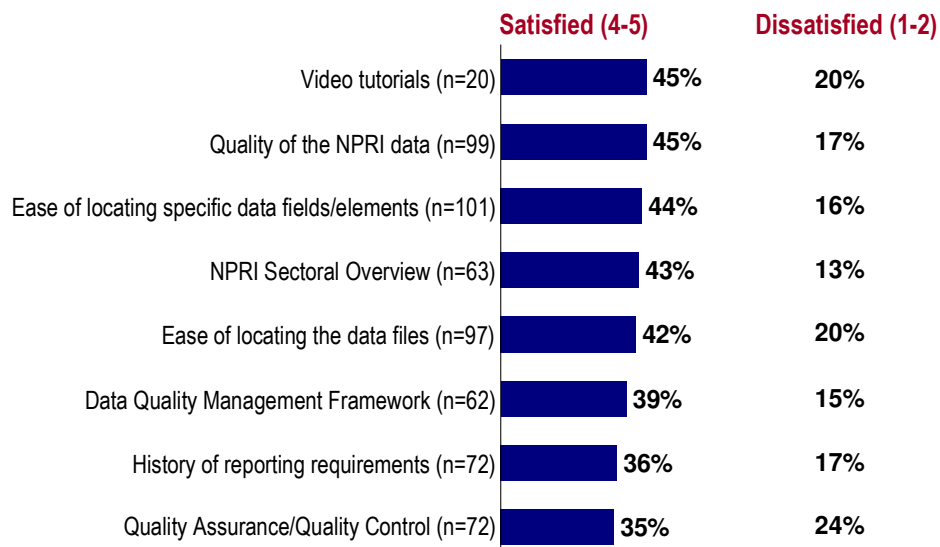
National Pollutant Release Inventory Survey of Data Users, 2019

Elements of Satisfaction

More than half of interview participants expressed an overall positive view of the NPRI despite some specific concerns or comments. Several said the NPRI is a "fantastic" resource and it is "great" to see this much data for 25 years, available for the entire country. Many said it is a key resource they use on a regular basis in their work.

> *"It's just crazy to me that you can find all this information in one place, in one database, for all of Canada, for anyone that has a certain threshold of pollutants – just the overall database itself is very convenient and very useful."*

> *"Making these suggestions doesn't mean we're not satisfied with what we offer. They have been doing a fantastic job."*

Several spoke positively about the NPRI reports that are produced, including the sector overview report and the annual/summary report. Participants said these are easy to digest and provide a helpful perspective on the data.

> *"There are some good resources available – like a sector overview of Oil and Gas which explains the major emissions."*

> *"I like that they do annual reports so they're showing whether emissions to air are going up or down and emissions by sector are going up or down. So, I'd say that has been really useful."*

NPRI staff are also a key source of satisfaction according to several participants. A few said they have a great contact among NPRI staff they can rely to help them understand what they are looking at, or get them the answers or data they need. Staff are said to be responsive, helpful, and very knowledgeable about the NPRI and pollution emissions in general.

> *"…the personnel are really interested in helping us out; they want to see the products used. That attitude and that policy of being open and answering questions, paying attention to suggestions, I think they should maintain that. They offer a nice public face and I really appreciate that."*

> *"The NPRI staff are fantastic! When you compare them with other departments… they are very knowledgeable and they understand the subject matter. They have been better than most at retaining staff and hiring very knowledgeable people".*

A number of other specific sources of satisfaction include, according to one participant, that the data are downloadable, and according to another, the data link up nicely with some provincial sources in terms of reporting. One participant said they believe the data quality is good and another said they like how there is the ability to search by postal code.

"What's really good is to be able to put in, not just the name of the company because often what you know in the local community is not its official legal name exactly, so also being able to put in a postal code. That really is very useful."

"It's often just finding the company that can be the challenge but I think the postal code helps a lot in that, just an alternative way to find it."

"I like how it's tied into, for example the TRA in Ontario...and they incorporate not just the federal level….. When you report you can report the NPRI pollutants as well as anything that falls under TRA from the same SWIM portal which is really handy for us."

Organization-Lay out

Almost half of participants said they find the NPRI reasonably easy to use. That said, many said they find it overly complicated and difficult to use, particularly for the general public. Even among those who find it easy to use, participants contextualize this in terms of their own expertise and experience with using it. Some nonetheless provided comments about possible steps to make it easier to work with.

Specifically, the way the site is organized is seen by many as complex and not obvious, such that it takes a fair bit of work to find the data sought, although some argue that, once you find it, working with the data is relatively straightforward. Some argue the language used is technical and not user-friendly for those who are not in the business of understanding pollutant release. Some said, for the general public or beginners in general, the inventory lacks a good overview of what it is, how to use it, and what the data mean, along with clear channels to support in how to use it or getting questions answered.

"(For the general public) it's too complicated to use and there are very few supports to guide you on how to use it. If you are not a regular user, you can't use it easily. (It's) too unclear and complicated, with no 'how to' guidance. People will give up after 10 minutes, feeling confused."

"[The Government] are making the NPRI for very specific users and purposes and it is becoming more complicated all the time, not less, and (they) never makes much effort to make it user-friendly or create the supports needed to allow the public or infrequent users to use it."

"We can't aggregate some data as easily as we'd like to. If we're looking at specific pollutants for one region, the listing of emitters is not as practical as it could be sometimes."

"I don't go through the Environment Canada website because it seems to be always changing and there's so many different layers and levels that it can be a bit confusing."

"There needs to be more simplicity and clarity, and basic guidance for public users. It needs to be developed and tested with basic users. (Is plain language used. Does this help you understand and use it?)"

A few participants argued the NPRI lacks in visualization tools that allow users to see the data in a different and more user-friendly way (e.g., a region at a glance, trends at a glance), or allow users to build and "see" layers of analysis in one picture. A few said this would be particularly helpful for the general public who may not understand the data but can see what it means with the use of a picture.

> "If someone just wants to have a sense of emissions for a region, having maps with maybe colour coding in terms of emissions for different pollutants. If that's easy to generate that would be very useful."

> "I did see a Canada-wide map of facilities but, (it would be good) if they would produce more local scale maps."

> "I think that's a good way of expressing that data and making it accessible for people."

> "I think there could be applications for citizens and academia, but right now it's a bunch of tables and numbers and lists and it's a little bit less accessible; so as many graphic products as possible."

> "There are new mapping features available on the NPRI website which we are aware of and I think if there was a bit more to that it would be really beneficial and a very powerful tool that we could use more readily."

> "Layers on a map so then you can add in different layers to depending on what you want to look at [would be helpful]."

Further to the concerns expressed earlier about the level of complexity of the NPRI, several said the organization of the site does not allow users to search in the way they would like to (i.e., use the criteria they would like) or to isolate or group in a way they would like. Some also said that in order to use the information fully, users need to go to several different places and bring the material together independently because the system does not allow for this flexibility. An example provided was the ability to be able to see everything for one facility in once place, which currently requires searches in multiple places and bringing it together manually. Another such example is the ability to bring together data for multiple years. A few suggested it is more difficult or labour-intensive to aggregate the data sought from the NPRI than it is using some other tools.

> "Getting to the point where you access the data is hard but once you get the data it's very good quality and it's very cool to see all of Canada, to see an inventory for something like that."

> "The NPRI has become more and more complex and used as an internal/expert tool."

> "It would be nice to have the option to download a file for a comprehensive overview of many years, or to select a one year data file from a specific year."

> "It would be great if there was location specific data but all I've seen in the database is there's a company and this is the total amount they are emitting at a particular site."

> "If I'm looking at one facility in particular I click on it and then I have to click four more times to find what I need. Whereas if I could just click on the facility name and then have everything on one page, it would be so much easier."

Lastly, regarding visualization and aggregation of data, one participant articulated a similar idea in terms of a preference to see data that is more synthesized and analyzed, rather than trying to wrap one's head around individual data for an "at a glance" perspective.

> "When I try to do it myself I wouldn't be able to get a lot of information out of the NPRI data. We had specialists at [....], not every [organization] does but we were fortunate to have some data analysts or toxicologists or other professions like policy analysts that were more familiar with it."

> "I would rather not have to look at individual pieces of raw data. I would rather see that someone else has done that for me."

Sources of Dissatisfaction - What is not working or missing

Some interview participants spoke of concerns about accuracy and transparency with respect to data quality and what is being reported. Several expressed concerns about the quality control process and verification, such as a lack of third party auditing. A few also mentioned the lack of information about numbers used by reporters and how there were arrived at (e.g., type of monitoring process conducted to obtain numbers). Some also expressed concerns about the manual entry required, suggesting the NPRI should allow for bulk electronic upload and have built-in flags and checks where entries seem illogical or misaligned with previous data or other fields. Some said it is difficult to be completely confident in the data when these elements are not present.

> "There needs to be guidance on what the information means. What you can use it for and how to interpret it. Limitations and disclaimers also need to be there to tell you what you can't use it for and can't assume, as well as sense of precision. Some transparency about the information."

> "There is no verification or audit (e.g., 3rd party audit) to ensure accuracy or legitimacy. Most of the time emission factors used are not concrete and specific monitoring is required (e.g., random stack sample monitoring or CEM.) You don't know if it is reliable."

> "There is no auditing process so you can't be sure of what they are using, if they are good estimates or if they have not made input errors. They need to have third party audits done."

> "They should also have some random checks generally by NPRI. The system should flag some errors re: inconsistent with other data/other years. [They] could also add some reporting of capacity for a company or plant and so other numbers should seem reasonably aligned with this, or red flags should go up. There needs to be transparency about who is checking these numbers, if anyone, and or/if the system automatically checks/challenges some numbers to those reporting."

> Re: concern about lack of transparency about numbers input, "Where do they come from? What are they based on? Are they continuous emissions monitoring (CEM) or manual stack samples or are they just estimates? It makes a big difference to accuracy and you need to know this in order to be able to assess accuracy and reliability of the numbers."

"In this day and age we should be able to do 'an electronic bulk upload'. That way our software can generate the emissions, we can generate a file in Environment Canada's format and send it to them. That avoids us having to do the manual entry, and what I'm getting at is it avoids errors in typos, in human errors in the final dataset, which we've seen before."

"I think if they want to improve the quality of the data they have to look at how it's being entered."

Another fairly common theme among several interview participants is a concern about thresholds for reporting being set too high, allowing smaller emitters to escape the need to report. This means, according to some, that emissions from many smaller organizations are not included in the overall picture. Therefore, one further argued, it is difficult to get an accurate sense of the cumulative effect in a region or from an industry when so much of the data are missing. In terms of transparency, even knowing the percentage of data or emitters that are missing with a general description of who is not reporting is seen as helpful in the interpretation of data according to one participant.

"....I think what would be a benefit is if there's some way of assessing cumulative impact in a neighbourhood. If you're looking facility to facility, maybe there are three in one neighbourhood all emitting the same chemical but all three are below the threshold for reporting – however in such close quarters to one another the cumulative emissions risk is not being captured, and maybe all together those facilities do present a health risk to the local residents."

"One of the challenges to see improvement on is that it's focused on the big releasers, right? And smaller companies – and it's not just companies, but municipalities too are dischargers – tend not to be in the data and the problem with that is for a local community small amounts of discharge can be significant."

"Some of those thresholds don't catch the smaller companies and therefore it's not giving people in the community a complete picture of what's going on. If you added up all the discharges from these small places we'd maybe see hey it's a substantial amount of pollution going into the air."

"[For example], dry cleaners – we don't know what kind of emissions they are producing and there are thousands of small companies doing this. Maybe they should be regulated but there's no data to back it up."

Having information about concentrations, toxicity, and chemical mixtures is also something a few participants feel is missing from the NPRI. One industry representative argued that greater precision is also needed in terms of data quality to be able to assess real change over time given the estimates are in parts per million.

Several expressed concerns about the many changes that have taken place with the NPRI over time, compromising the consistency and ability to make historical comparisons. One participant in particular suggested the NPRI suffers from an identity crisis with conflicting objectives – trying to be a general tracking tool, while at the same time trying to accommodate the very specific needs of many. This makes it increasingly more complicated over time. The argument is that the NPRI is "trying to be too many things to too many people" and is becoming more and more specific as a result. A few others argued even consistency of categories (e.g., for sectors) within different places in the NPRI are not consistent and do not match up, making it harder to draw comparisons.

> *"I think changing too much is also not good because it just makes things more difficult to navigate."*

> *"Often they change the view or presentation in the website and we need to search for something that's changed – so maybe somehow commit to a format so that you know where to go. Maybe change the font or the colours but not drastically change the location of the hyperlinks."*

> *"There is a 'tension of purpose' between specifics about individual substances and overall consistency over time. It needs to find the balance. With a clear understanding of [its] purpose and mandate so that it is a useful tool with which to monitor pollutant release over time as the underpinning of good policy."*

> *"You can't do trend analysis because it has changed the consistency of reporting (e.g., units over time) so there is no way to do it."*

As a side point regarding changes to the NPRI over time, two participants also remarked how these changes are not well communicated to users and need to be more clearly laid out and explained.

> *"There have also been too many changes to the NPRI over time, you cannot keep up and they don't inform you. Unless you are in the loop, and using it routinely, you can get lost."*

A few argue rather than adding to or changing the NPRI, it should remain as-is, with more resources and IT support invested into it to keep it functioning well, and possibly increasing the frequency of reporting periods.

> *"That system really requires a lot more support. It seems like the resources they have allocated to supporting the database itself and our ability to interact with that database is very limited. We've had a lot of challenges with that site in terms of it not working – not allowing us to enter data, not saving the data we enter, that sort of thing. If the backend of the data is not well managed, I think the website that the survey focused on where you actually download the data could become compromised."*

> *"Efficient tech support does not necessarily equate to effective tech support".*

> *"Insular government decisions without understanding the impact."*

That said, there were other participants who suggested they would like to see substances added to it or that they would like to search for specific locations. Others said they would like to see categories of industries or substances narrowed because they are too wide for current use. Some said they would prefer to search by different criteria (e.g., specific release environments, sub-sector).

> *"Sometimes I find NPRI groups a lot of sectors together, so you know not always grouping the sectors together would be useful. So bringing it down to the three or four digit NAICS code that could be very, very helpful."*

QUESTIONS ABOUT THE NPRI

Two in three users (64%) have had questions while using the NPRI. Four in 10 found the information they needed on the website, while just under four in 10 called or emailed the helpdesk or Enviroinfo. Most of those indicating "other" contacted someone in ECCC or NPRI staff (other than the helpdesk) directly.

Table 8: Questions about NPRI

Have you ever had questions (e.g., about content, technical issues, or other issues) while using NPRI data?	*n=95*
Yes	64%
No	36%
When you have had questions (e.g., about content technical issues, or other issues), thinking about your most recent experience(s), what have you done about it?	*n=61*
Found the information on the NPRI Canada.ca website	41%
Called/emailed the NPRI helpdesk or Enviroinfo	38%
Found the information elsewhere	21%
Other	31%
Gave up/Did nothing	10%

USEFUL SUPPORTS

In terms of possible tools to support their use of the NPRI, nearly two in three (63%) believe step-by-step guides would be very useful and another half (53%) feel case studies would be helpful. Live webinars and in-class training are less likely to be seen as useful by comparison.

Chart 10: Useful Supports

"Thinking about your use of NPRI data in the past, which of the following tools would be most helpful to you?"

Tool	Percentage
Step-by-step guides	63%
Study cases	53%
Live webinar training	26%
In class training	21%
Other	13%

EKOS Research Associates Inc.   n=87   National Pollutant Release Inventory Survey of Data Users, 2019
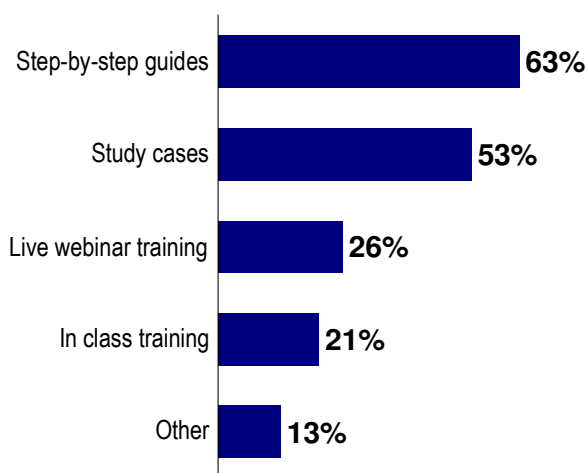
When in-depth interview participants were asked about additional supports to use the NPRI system, a few said they never had need for support and were able to find everything easily through navigating the website and accessing existing guidance. One participant pointed to the "NPRI Guidance Document" as quite useful.

> *"No, there is a lot of guidance and how to use NPRI and all that stuff; I've never had an issue on the NPRI website to access information."*

Many of those who had previously accessed support services expressed satisfaction with the current level of service available from the NPRI. These participants typically said they have contacts at NPRI whom they contact directly with questions or concerns and had high praise for their timeliness and level of engagement. A few commented on the responsiveness and knowledge of the NPRI staff.

> *"They (NPRI staff) are great! They always call me back or set up meetings with me to discuss so my needs are pretty much always met on that."*

> *"I'm satisfied with the NPRI team I deal with in terms of their responsiveness and the level of engagement I want; I hear back from them on all of that and I appreciate that."*

Many also had suggestions for improvements or expansion of existing supports including: live support via online chat or phone, case studies, video tutorials, webinars, step-by-step guides, a Q & A section, and formal in-person training. Of these, step-by-step and case studies were cited most often. Most of these comments were referencing lay-users and the general public who may not be as familiar with the intended purpose of the NPRI and various tools available on the website. One participant was particularly adamant about the creation of a written citizens' guide to using the NPRI, which he felt would increase public access to data for the purposes of citizen engagement and activism.

> *"Needs to be more straightforward and develop guides and test with public and have greater efforts to increase awareness of it and what it does, how to use it or it isn't a public inventory".*

> *"Simplify the messaging and maybe provide step-by-step instructions for the non-initiated public."*

Live training was mentioned most often by those who use the NPRI regularly for work and require more in-depth knowledge of specific processes and procedures. One participant said this is particularly needed when rolling out large changes to reporting requirements so questions can be answered as the information is being communicated. One participant said examples for reporting guidelines would be useful and reduce back and forth between facilities and NPRI staff.

> *"The videos are great but they're not interactive, right? So I can watch the video but if I have a question it won't be clarified then and there."*

> *"It could be some online tutorials, some videos or where to click, something simple to start off. And maybe for more advance notions, maybe some in-person courses once a year or something of that type."*

> *"Maybe for certain classes of pollutants they could include how this is generally quantified for x, y, and z industry and this is the kind of data quality we're looking for."*

Some said changes to the website and datasets should be communicated more effectively. These participants said frequent changes to the site leave users looking for the new path to a familiar page, which can be frustrating. One participant suggested an email distribution list in which clients could opt in to receive website or dataset updates. Another said highlighting changes on the website homepage would be useful.

> *"I feel their communication on updates of the data is pretty limited and I think they rely on people accessing the website to be able to find out when new datasets are available. So I guess if there was an improvement opportunity it might just be around communication."*

> *"No, I think it's just communication. I don't think formal training would need to happen. If they just had some communication of what's available and when it's updated that would be pretty helpful."*

COMBINING DATA

More advanced users of the Inventory were asked about combining the data with other information sources, with six in 10 indicating they do this. Other datasets used include other environment data, followed by health-related data, substance information, and economic data. One in four also use population data. About six in 10 indicated satisfaction with the ability to compare within a sector, within or between regions, and substances. Satisfaction is marginally lower in terms of ability to link with other data, and few indicated satisfaction with the ability to draw comparisons about risk. About half of those who combine the NPRI with other databases said they use other sources to provide context to NPRI data (e.g., information about toxicity, fate, and transportation properties of NPRI substances), with a few pointing to different sources for doing so. Among these individuals using other sources to provide context (n=23), everyone agreed they would use such a tool to incorporate more NPRI data, if one were provided through the NPRI.

Table 9: Combining NPRI with Other Data

Have you ever combined NPRI data with other data?	n=74
Yes	62%
No	38%
What other datasets have you used NPRI data with?	*n=46*
Other environmental data	**61%**
Health related data	35%
Substance Information	33%
Economic data	30%
Population trend data	24%
Other	22%
Satisfaction levels	*Satisfied (4-5)*
Perform comparisons within a sector (n=37)	65%
Perform regional/provincial comparisons (n=34)	59%
Perform substance to substance comparison (n=34)	53%
Link to other data (n=38)	47%
Compare relative risk (n=23)	17%
Do you currently use other sources of information to provide context to NPRI data?	*n=72*
US EPA's RSEI (Risk Screening Environment Indicators) model	15%
Risk Scoring system by Scorecard	11%
Other	33%
No	54%
If NPRI offered a tool to incorporate more context to NPRI data, would you use it?	*n=26*
Yes	100%

ANTICIPATED FUTURE APPLICATIONSFOR NPRI

Half of NPRI users would be most interested in being able to look at sources or levels of pollutants in their own community. About one in three said they would have an interest in information for academic purposes, or information about the impacts of climate change on the quality of soil, air, or water. Other areas include an interest in pollutant levels Canada-wide, in a specific region/province, or industry, as well as comparison, historical trends, and population health effects.

Chart 11: Anticipated Application for NPRI

"What would you be most likely to use NPRI data for in the future?"

Category	Percentage
Sources of pollutants in my community/neighbourhood	56%
Levels of pollutants in my community/neighbourhood	53%
Information for academic purposes	37%
Impacts of climate change on quality of soil, water and air	37%
Other	38%

EKOS Research Associates Inc.   n=138   National Pollutant Release Inventory Survey of Data Users, 2019
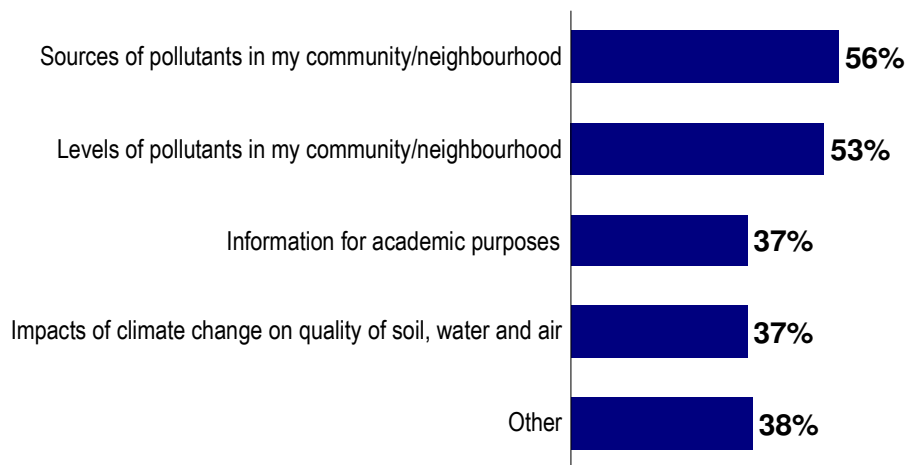
DESIRED NPRI FORMATS

Among the other types of data offerings NPRI users would like to see, shapefiles (41%) and online visualization (38%) are at the top of the list, along with custom maps (31%). Fewer inventory users are interested in other formats (18%). Those using the open mapping and Google Earth data products are more apt to be interested in shapefiles.

Chart 12: Desired NPRI Formats

"If NPRI were to expand to other types of data offerings, what data formats or product types would you be interested in using?"

Format	Percentage
Shape files	41%
Online visualization	38%
Custom maps	31%
Tableau or PowerBI	18%
Xml	14%
Web services	10%
API	8%
Txt	7%
None, not interested in other formats/product types	18%

EKOS Research Associates Inc.

n=87

National Pollutant Release Inventory Survey of Data Users, 2019
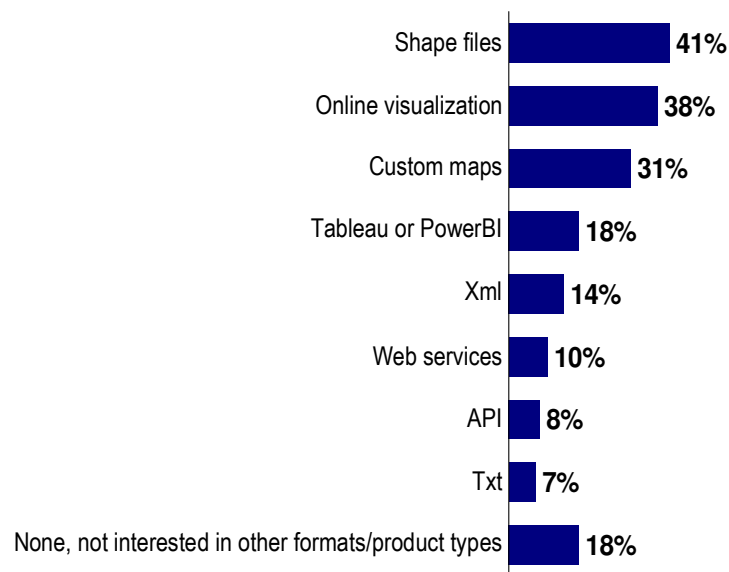
Interview Findings

In reference to specific file formats and fields available, many participants said they are content with the existing formats available to access NPRI data. These participants primarily use Excel format when downloading data, and described it as flexible and widely accepted.

> *"We can manipulate the data pretty quickly once its' in Excel."*

A few people, however, expressed frustration with Excel format; primarily that it is not always compatible with all software, and editing data once imported is time-consuming. For example, one participant noted how Excel automatically rounds decimal points, and another mentioned odd spacing or labels that need adjustment. Suggestions for improvements included formats better compatible with Tableau and PowerBI. Another suggested using Access.

> *"Our students and researchers sometimes need to put a lot of time into just rewriting titles of the variables because either they have characters that are not compatible with other software or odd spaces. These are really small details but at the end are very costly time wise for us."*

> *"Maybe using a format that is more universally accepted by more sophisticated software would be a way to go. And it doesn't have to be an expensive one, but maybe using Access instead of Excel, both are part of the Microsoft Office package."*

Several participants suggested NPRI export more data into maps or other visual formats to improve access. A few suggested expansion in the available data on air emissions, or suggested the inclusion of 'air sheds' and 'air zones' as searchable areas on maps. One participant expressed appreciation for Shape Files and KML files for generating maps independently.

Several voiced specific suggestions for the datasets available for download. One said it would be useful to be able to select year by year files as well as to have one file including all years. Another suggested moving all available datasets onto one page for easier access and to provide an opportunity for clarification of the differences between sets including details on contents and how they were prepared.

NPRI UPDATES

Three in four NPRI users indicated an interest in having updates about the program, particularly where it relates to publication of data (81% of those interested) or consultations on changes to be made around substances or reporting requirements (79% of those interested). Upcoming workshops or training are of interest to two in three (65%), and overviews are also of interest to about half (55%). Slightly fewer see the appeal of knowing about periods of consultation, community outreach, or report launches. By and large, email is seen as the best way to reach out to the community of NPRI users about updates (84%).

Table 10: Updates about NPRI

Would you be interested in receiving updates regarding the NPRI Program?	n=104
Yes	77%
No	23%
What updates would you be interested in receiving?	n=80
Data publication	81%
Consultations on changes made to the substances and other reporting requirements	79%
Upcoming workshops and training	65%
Publication of information overviews	55%
Consultation periods	48%
Launch of reporting period	39%
Community outreach	38%
What would be the best way for the NPRI program to communicate with you about updates?	n=80
By email	84%
Through the NPRI Canada.ca website	8%
Through social media - ECCC	5%

APPENDIX A: SURVEY QUESTIONNAIRE

ENGCLOSED

Email invitation used for the closed version of the survey, used for unique individuals in the sample

Survey: Use of the National Pollutants Release Inventory (NPRI) | Sondage: Utilisation de l'Inventaire national des rejets de polluants (INRP)

La version française suit le texte anglais.

Sir/Madam,

Since 1992, the National Pollutant Release Inventory (NPRI) has been collecting data about pollutant releases, disposals and transfers in Canada. 7000 facilities, including manufacturers, mines, oil and gas operations, power plants, and sewage treatment plants, are required to report to the NPRI.

* This public inventory helps Canadians learn about pollutants released in their communities, encourages action to reduce pollution and lets users track changes over time.

* The NPRI website helps users find and understand the data. They can search datasets or the complete inventory database, view the data on virtual globe maps or read data highlights and overviews.

A survey of NPRI data and website users is being conducted to gather information on their data needs and experiences with the inventory and website. The results will be used to make both the data and the website easier to understand and navigate. The survey will take approximately 15 minutes to complete.

Please be assured that the information you provide will be administered in accordance with the Privacy Act of Canada regarding the protection of personal information. Your answers are completely confidential (this means that no individual will be associated with the survey's results - rather, they will be rolled up into large categories to protect the confidentiality of each respondent) and that survey is voluntary.

Please click here to start the survey: https://surveys.ekos.com/ekos/cwx.cgi?EN:07919:[UNIQUEID]

Note that this link contains an access code **unique to you**, so please do not forward it to others. If you would like to circulate a link to the survey to others, please send the following link: https://surveys.ekos.com/ekos/cwx.cgi?EN:07919OPN

Should you have any questions regarding this survey, please contact Jérémie Blanc from EKOS Research Associates Inc. at jblanc@ekos.com or 1-800-388-2873.

You can unsubscribe from this survey's mailing list by clicking the following link: https://surveys.ekos.com/ekos/cwx.cgi?EN:07919:[UNIQUEID]:UNSUB

Madame,
Monsieur,

Depuis 1992, l'Inventaire national des rejets de polluants (INRP) recueille des données sur les polluants rejetés, éliminés et transférés au Canada. Sept mille installations, y compris des usines, des mines, des exploitations gazières et pétrolières, des centrales de production d'énergie et des usines de traitement des eaux d'égout, doivent transmettre une déclaration à l'INRP.

 * L'inventaire public aide les Canadiens à en apprendre davantage sur les polluants rejetés dans leurs collectivités, encourage la prise de mesures pour réduire la pollution et permet aux utilisateurs de suivre les développements au fil du temps.

 * Le site Web de l'INRP aide les utilisateurs à trouver et à comprendre les données. Il est possible de faire des recherches dans des jeux de données ou la base de données de l'inventaire, de consulter des données sur des cartes ou de lire des points saillants et des survols.

 Un sondage à l'intention des utilisateurs des données et du site Web de l'INRP est mené pour recueillir des renseignements sur les besoins des utilisateurs en matière de données, et sur les expériences qu'ils ont vécues avec l'inventaire et le site Web. Les résultats serviront à faciliter la compréhension des données et la navigation dans le site Web. Il vous faudra environ 15 minutes pour répondre au sondage.

 Vous pouvez avoir la certitude que les renseignements que vous fournirez seront traités en conformité avec la Loi sur la protection des renseignements personnels. Vos réponses sont complètement confidentielles (c'est-à-dire que les résultats du sondage ne seront associés à aucun nom mais seront plutôt groupés dans de grandes catégories afin de protéger l'anonymat de chaque répondant); le présent sondage est conduit sur une base volontaire.

 Veuillez cliquer ici pour commencer le sondage: https://surveys.ekos.com/ekos/cwx.cgi?FR:07919:[UNIQUEID]

 Notez que ce lien contient un code d'accès **unique à vous**, veuillez donc ne pas le transmettre à d'autres personnes. Si vous souhaitez distribuer un lien du sondage à d'autres personnes, veuillez envoyer le lien suivant: https://surveys.ekos.com/ekos/cwx.cgi?FR:07919OPN

 Si vous avez des questions concernant ce sondage, veuillez communiquer avec Jérémie Blanc des Associés de recherche EKOS Inc., à jblanc@ekos.com ou au 1-800-388-2873.

 Vous pouvez vous désinscrire de la liste d'envoi de ce sondage en cliquant sur le lien suivant : https://surveys.ekos.com/ekos/cwx.cgi?FR:07919:[UNIQUEID]:UNSUB

ENGOPEN
Email invitation used for the open version of the survey, used for generic emails where we have no name attached
 Survey: Use of the National Pollutants Release Inventory (NPRI) | Sondage: Utilisation de l'Inventaire national des rejets de polluants (INRP)

La version française suit le texte anglais.

 Sir/Madam,

 Since 1992, the National Pollutant Release Inventory (NPRI) has been collecting data about pollutant releases, disposals and transfers in Canada. 7000 facilities, including manufacturers, mines, oil and gas operations, power plants, and sewage treatment plants, are required to report to the NPRI.

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Veuillez cliquer ici pour commencer le sondage: https://surveys.ekos.com/ekos/cwx.cgi?FR:07919OPN
Si vous avez des questions concernant ce sondage, veuillez communiquer avec Jérémie Blanc des Associés de recherche EKOS Inc., à jblanc@ekos.com ou au 1-800-388-2873.

Vous pouvez vous désinscrire de la liste d'envoi de ce sondage en cliquant sur le lien suivant : https://surveys.ekos.com/ekos/cwx.cgi?FR:07919:[UNIQUEID]:UNSUB

WINTRO

Web Intro

Since 1992, the National Pollutant Release Inventory (NPRI) has been collecting data about pollutant releases, disposals and transfers in Canada. 7000 facilities, including manufacturers, mines, oil and gas operations, power plants, and sewage treatment plants, are required to report to the NPRI.

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INSTRUCTIONS

* Please consider the questions and your answers carefully.

* On each screen, after selecting your answer, click on the "Continue" button at the bottom of the screen to move forward in the questionnaire.

* If you leave the survey before completing it, you can return to the survey URL later, and you will be returned to the page where you left off. Your answers up to that point in the survey will be saved.

* If you have any questions about how to complete the survey, please call EKOS at 1-866-211-8881 or email us at online@ekos.com. Thank you in advance for your participation.

PREQ1
What type of organization are you primarily affiliated with?

Academic institution	1
Students	2
Media	3
Environmental Nongovernment organizations (NGO)	4
Federal government Environment and Climate Change Canada	5
Federal government Health Canada	6
Federal government Other (please specify)	7
Provincial government	8
Municipal government	9
Indigenous group	10
Industrial facility/association	11
Citizen's group	12
Individual citizen	13
Commercial/Institutional	14
Financial/Insurance/Real Estate	15
Other (please specify)	77
Don't know / Not applicable	99

Q1
Have you used NPRI data?

The National Pollutant Release Inventory (NPRI) is Canada's public inventory of releases, disposals and transfers of pollution in the environment. It tracks over 320 pollutants from over 7,000 facilities across Canada.

Yes	1
No	2
Don't know / No response	99

Q1B
Haven't used NPRI or DK in Q1
Do you think that NPRI data could benefit or be of interest to you?

Yes	1
No	2
Don't know / No response	99

Q1C

In what capacity would NPRI data be most useful to you?

Personally	1
Professionally	2
Both	3
Don't know / No response	99

Q1D

How likely are you to use NPRI data?

Not at all likely 1	1
2	2
Moderately likely 3	3
4	4
Very likely 5	5
Don't know / No response	99

Q1E [1,6]

How could NPRI best reach out to you to provide more information)?

Select all that apply	
NPRI Canada.ca website	1
Other website (which?)	78
Social Media (which?)	2
Canada Gazette	3
General Internet Search (e.g., Google)	4
Other (please specify)	77
Don't know / No response	99

Q1F

Why haven't you used NPRI data in the past?

Unaware	1
Not relevant	2
Too technical	3
Did not realize could access for personal use	4
Need better understanding of what I can find there	5
No ability to access on mobile device	6
Other (please specify)	77
Don't know / No response	99

Q1G

What would you most want to know about NPRI data to better understand its uses?

Please specify	77
Don't know / No response	99

Q1H [1,6]

Haven't used NPRI or DK in Q1, might use/could benefit in Q1B

What would you need in order to get started using NPRI data?

Select all that apply
Live webinar training	1
Video tutorials	2
In class training	3
Step-by-step guides	4
Study cases (examples of how others use the data)	5
Other (please specify)	77
Don't know / No response	99

Q2

Used NPRI data

Did you use the NPRI for:

Personal use	1
Professional use	2
Both	3
Don't know / No response	99

Q3 [1,13]

Used NPRI data

What was your purpose for using the data?

Select all that apply
For discussions with a facility (or facilities)	1
For use in research (please specify)	2
For academic study (student projects, education)	3
For preparation of a media story	4
For analysis of sectors or trends	5
For an environmental and/or risk assessment	6
For statistical purposes (for example: uncertainty analysis)	7
Policy development	8
Benchmarking facility performance	9
Benchmarking for competitive purposes	10
To identify pollutant releases in a specific area or community	11
To perform quality assurance checks of your NPRI reports	12
Other (please specify)	77
Don't know / No response	99

Q4 [1,7]

Used NPRI data

How/where do you obtain NPRI data?

Select all that apply
From NPRI Canada.ca website	1
From Government of Canada Open Data	2
From Government of Canada Open Maps	3
Other website (which?)	78
(GoC employee only – PREQ1=5,6,7) From ECCC Data Catalogue	4
(GoC employee only – PREQ1=5,6,7) Federal Geospatial Portal	5
From the NPRI by email	6
Other (please specify)	77
Don't know / Not applicable	99

Q5

Used NPRI data

When did you start using NPRI data?

Last six months	1
6 months to 1 year ago	2
1-2 years ago	3
2-5 years ago	4
More than 5 years ago	5
Don't know / No response	99

Q6 [1,7]

Used NPRI data

Where did you hear about NPRI data?

Select all that apply

NPRI Canada.ca Website	1
Other website (which?)	78
Social Media (which?)	2
Canada Gazette	3
General Internet Search (e.g., Google)	4
Directly from Environment and Climate Change Canada (ECCC)	5
Other (please specify)	77
Don't know / No response	99

Q7 [1,5]

Used NPRI data or the NPRI data could benefit/interest me

<[Q1B = 1]What would you be most likely to use NPRI data for in the future?[ELSE]Have you used NPRI data for any of the following purposes?>

Select all that apply

Levels of pollutants in my community/neighbourhood	1
Sources of pollutants in my community/neighbourhood	2
Information for academic purposes (e.g., research, school project)	3
Impacts of climate change on quality of soil, water and air	4
Other (please specify)	77
Don't know / No response	99

Q8 [1,8]

Used NPRI data

Have you used any of the following NPRI data products?

Select all that apply

Single Year Flat Files (link to website)	1
Aggregated release data, last 5 years (link to website)	2
Raw disaggregated data (MS Access database from 1994 to current) (link to website)	3
Open Mapping Services (link to website)	4
Google Earth (link to website)	5
Query Site (Online Data Search) (link to website)	6
Other (please specify)	77
None – have not used any data products	98
Don't know / Not applicable	99

Q8B [1,3]
Used NPRI data

Have you used any of the following NPRI information products?

Select all that apply

NPRI Sector Overview (link to website)	1
NPRI Data Highlight (link to website)	2
Other (please specify)	77
None – have not used any information products	98
Don't know / Not applicable	99

CALCUSERTYPE

Calculation to determine if advanced or beginner

Advanced	1
Beginner	2
Have not used any/Unknown	3

Q9 [1,4]
Used NPRI data/information product from either Q8 or Q8B

What do you use to access and view these data and information products?

Select all that apply

Cell phone	1
Tablet	2
Computer	3
Other (please specify)	77
Don't know / No response	99

Q10A
Use Single Year Flat Files
Single Year Flat Files

Would adding additional years be useful?

Yes (please enter the range of years) *(2 dropdown boxes, range 1993-2018)*	1
No	2
Don't know / No response	99

Q10B
Use Single Year Flat Files

What are the most useful fields in the file?

Please specify	77
Don't know / No response	99

Q10C
Use Single Year Flat Files

Does this file contain all of the information you need or do you need to use multiple files to get the information you need?

Yes, it contains everything needed	1
No, I need to access and link different files (which ones?)	77
Don't know / No response	99

Q11A
Use Aggregate Release data, last 5 years

Aggregate Release data, last 5 years

Aggregated data is available for download on the newly redesigned online data search tool under the "pre-defined queries". Were you aware of this?

Yes	1
No	2
Don't know / No response	99

Q11B
Use Aggregate Release data, last 5 years

Would you be more likely to download the aggregate data file on:

Open Data	1
Online data search tool	2
Both	3
Don't know / No response	99

Q11C
Use Aggregate Release data, last 5 years

Is 5 years of data enough?

Yes	1
No (How many more years would you want added?)	77
Don't know / No response	99

Q11D
Use Aggregate Release data, last 5 years

What fields are the most useful?

Please specify	77
Don't know / No response	99

Q11E
Use Aggregate Release data, last 5 years

How would you rate the time it takes to obtain the information that you are looking for?

Very little time 1	1
2	2
3	3
4	4
Far too much time 5	5
Don't know / No response	99

Q11F
Use Aggregate Release data, last 5 years

Is there anything that would make this process easier for you?

Please specify	77
Don't know / No response	99

Q11G
Use Aggregate Release data, last 5 years

Is there information that you need that is not contained in the file?

Yes (what information is missing?)	77

| No | 2 |
| Don't know / No response | 99 |

Q11H

Use Aggregate Release data, last 5 years

Does this file contain all of the information you need or do you need to use multiple files to get the information you need?

Yes	1
No (what other files do you use?)	77
Don't know / No response	99

Q12A

Use Raw disaggregated data

Raw disaggregated data (MS Access database from 1994 to current)

What fields are the most useful?

| Please specify | 77 |
| Don't know / No response | 99 |

Q12B

Use Raw disaggregated data

What field do you need to format or change before you are able to use the file?

Please specify	77
None	98
Don't know / No response	99

Q12C

Use Raw disaggregated data

Is there anything that would make this process easier for you?

| Please specify | 77 |
| Don't know / No response | 99 |

Q12D

Use Raw disaggregated data

Is there information that you need that is not contained in the file?

Yes (what information is missing?)	77
No	2
Don't know / No response	99

Q12E

Use Raw disaggregated data

Do you use other multiple files to get the information you need?

Yes (what other files do you use?)	77
No	2
Don't know / No response	99

Q14A

Use Open Mapping Services/Google Earth

Open Mapping Services/Google Earth

Would adding additional years be useful?

| Yes (how many years?) | 77 |

No	2
Don't know / No response	99

Q14B

Use Open Mapping Services/Google Earth

Would you like shapefiles to be available?

The *shapefile* format is a popular geospatial vector data format for geographic information system (GIS) software.

Yes	1
No	2
Don't know / No response	99

Q14C [1,7]

Use Open Mapping Services/Google Earth

What kind of additional information would you like to see and use on maps?

Select all that apply	
Map layers for each pollutant	2
Map layers for each category (release, disposal, transfer)	3
Map layers for each environmental compartment (air, water, land)	4
Map layers for each sector	6
Origins and destinations of transfers for off-site disposal, treatment and recycling	7
Map layers of pollution prevention activities	8
Other (please specify)	77
Don't know / No response	99

Q14D

Use Open Mapping Services/Google Earth

What would you use these for?

Please specify	77
Don't know / No response	99

Q15A [1,7]

Use Query Site

Query Site

For what purpose do you use the online data search tool?

Select all that apply	
To learn about pollution in my community	1
To find information on substances released	2
To learn about companies	3
To look at pollution trends	4
To do industrial sector profiling	5
To extract data for complex analyses	6
Other (please specify)	77
Don't know / No response	99

Q15B

Use Query Site

How would you rate the time it takes to obtain the information that you are looking for?

Very little time 1	1
2	2
3	3
4	4
Far too much time 5	5

Don't know / No response   99

Q16PROD

No products used from Q8 or non-user from Q1

What is the reason you do not use any of the NPRI data products?

It doesn't fulfill my needs   1
I didn't know it existed   2
It's too complicated to use   3
The file is too big   4
Other (please specify)   77
Don't know / No response   99

PREQ16

Used NPRI data

General NPRI Program

How satisfied are you with the following aspects of the NPRI?

Q16A

Used NPRI data

Quality of the NPRI data
Extremely dissatisfied 1   1
2   2
Neutral 3   3
4   4
Extremely satisfied 5   5
Have not used this   98
Don't know/ No response   99

Q16B

Used NPRI data

Coverage of substances
Extremely dissatisfied 1   1
2   2
Neutral 3   3
4   4
Extremely satisfied 5   5
Have not used this   98
Don't know/ No response   99

Q16C

Used NPRI data

Coverage of sector/facilities
Extremely dissatisfied 1   1
2   2
Neutral 3   3
4   4
Extremely satisfied 5   5
Have not used this   98
Don't know/ No response   99

Q16D

Used NPRI data

Ease of locating the data files
Extremely dissatisfied 1   1
2   2
Neutral 3   3

4   4
Extremely satisfied 5   5
Have not used this   98
Don't know/ No response   99

Q16E

Used NPRI data

Ease of locating specific data fields/elements
Extremely dissatisfied 1   1
2   2
Neutral 3   3
4   4
Extremely satisfied 5   5
Have not used this   98
Don't know/ No response   99

Q16F

Used NPRI data

Timeliness of release of data
Extremely dissatisfied 1   1
2   2
Neutral 3   3
4   4
Extremely satisfied 5   5
Have not used this   98
Don't know/ No response   99

Q16G

Used NPRI data

Ease of understanding and interpreting NPRI data
Extremely dissatisfied 1   1
2   2
Neutral 3   3
4   4
Extremely satisfied 5   5
Have not used this   98
Don't know/ No response   99

Q16H

Used NPRI data

Video tutorials
Extremely dissatisfied 1   1
2   2
Neutral 3   3
4   4
Extremely satisfied 5   5
Have not used this   98
Don't know/ No response   99

Q16I

Used NPRI data

Telephone support provided by ECCC staff
Extremely dissatisfied 1   1
2   2
Neutral 3   3
4   4
Extremely satisfied 5   5

| Have not used this | 98 |
| Don't know/ No response | 99 |

Q16J

Used NPRI data

Email/online support provided by ECCC staff

Extremely dissatisfied 1	1
2	2
Neutral 3	3
4	4
Extremely satisfied 5	5
Have not used this	98
Don't know/ No response	99

Q16K

Used NPRI data

NPRI Sectoral Overview

Extremely dissatisfied 1	1
2	2
Neutral 3	3
4	4
Extremely satisfied 5	5
Have not used this	98
Don't know/ No response	99

Q16L

Used NPRI data

NPRI Data Highlight

Extremely dissatisfied 1	1
2	2
Neutral 3	3
4	4
Extremely satisfied 5	5
Have not used this	98
Don't know/ No response	99

Q16M

Used NPRI data

History of reporting requirements

Extremely dissatisfied 1	1
2	2
Neutral 3	3
4	4
Extremely satisfied 5	5
Have not used this	98
Don't know/ No response	99

Q16N

Used NPRI data

Data Quality Management Framework

Extremely dissatisfied 1	1
2	2
Neutral 3	3
4	4
Extremely satisfied 5	5
Have not used this	98
Don't know/ No response	99

Q16O

Used NPRI data

Quality Assurance/Quality Control

Extremely dissatisfied 1	1
2	2
Neutral 3	3
4	4
Extremely satisfied 5	5
Have not used this	98
Don't know/ No response	99

Q16P

Used NPRI data

NPRI Canada.ca Website

Extremely dissatisfied 1	1
2	2
Neutral 3	3
4	4
Extremely satisfied 5	5
Have not used this	98
Don't know/ No response	99

Q17B

Some dissatisfaction in the coverage of substances

You indicated some dissatisfaction with the **coverage of substances**. Can you provide some detail about why or what you were dissatisfied with?

Please specify	77
Don't know / No response	99

Q17C

Some dissatisfaction in the coverage of sector/facilities

You indicated some dissatisfaction with the **coverage of sector/facilities**. Can you provide some detail about why or what you were dissatisfied with?

Please specify	77
Don't know / No response	99

Q17FB

Some dissatisfaction in timeliness of release of data

How frequently would you like to see data updates in the online data search tool?

Quarterly	1
Semi annually	2
Annually	3
More often (please specify)	77
Don't know / No response	99

Q17FC

Some dissatisfaction in timeliness of release of data

Would you also expect the previous versions to be available for download (e.g., on the GC Open Data Portal)?

Yes	1
No	2
Don't know / No response	99

Q17K
Some dissatisfaction in the NPRI Sectoral Overview
You indicated some dissatisfaction with the **NPRI Sectoral Overview**. Can you provide some detail about why or what you were dissatisfied with?

Please specify	77
Don't know / No response	99

Q17L
Some dissatisfaction in the NPRI Data Highlight
You indicated some dissatisfaction with the **NPRI Data Highlight**. Can you provide some detail about why or what you were dissatisfied with?

Please specify	77
Don't know / No response	99

Q17P
Some dissatisfaction in the NPRI Website
You indicated some dissatisfaction with the **NPRI Canada.ca Website**. Can you provide some detail about why or what you were dissatisfied with?

Please specify	77
Don't know / No response	99

Q18
Used NPRI data
Have you ever had questions (e.g., about content, technical issues, or other issues) while using NPRI data?

Yes	1
No	2
Don't know / No response	99

Q18B [1,4]
Used NPRI data, Had a question/issue/problem while using NPRI data
When you have had questions (e.g., about content, technical issues, or other issues), thinking about your most recent experience(s), what have you done about it?

Select all that apply	
Called/emailed the NPRI helpdesk or Enviroinfo	1
Found the information on the NPRI Canada.ca website	2
Found the information elsewhere	3
Other (please specify)	77
Gave up/Did nothing	98
Don't know / Not applicable	99

Q19 [1,5]
Used NPRI data
Thinking about your use of NPRI data in the past, which of the following tools would be most helpful to you?

Select all that apply	
Live webinar training	1
In class training	2
Step-by-step guides	3
Study cases (examples of how others use the data)	4
Other (please specify)	77
Don't know / No response	99

Q20

Used NPRI data

Would you be interested in receiving updates regarding the NPRI Program?

Yes	1
No	2
Don't know / No response	99

Q20B [1,8]

Used NPRI data, Interested in receiving updates regarding the NPRI

What updates would you be interested in receiving?

Select all that apply

Data publication	1
Publication of information overviews	2
Consultations on changes made to the substances and other reporting requirements	3
Upcoming workshops and training	4
Launch of reporting period	5
Consultation periods	6
Community outreach (ex.: online educational kits for teachers, festivals we're attending, new info product available, etc.)	7
Other (please specify)	77
Don't know / No response	99

Q20C

Used NPRI data, Interested in receiving updates regarding the NPRI

What would be the best way for the NPRI program to communicate with you about updates?

By email	1
Through the NPRI Canada.ca website	2
Through social media – ECCC channels (LinkedIn, Twitter and Facebook)	3
Other (please specify)	77
None	98
Don't know / No response	99

PREQ21

Used NPRI data product listed from Q8

How satisfied are you with the NPRI data products you have used?

Q21A

Single Year Flat Files

Extremely dissatisfied 1	1
2	2
Neither 3	3
4	4
Extremely satisfied 5	5
Don't know/ No response	99

Q21B

Aggregated release data, last 5 years

Extremely dissatisfied 1	1
2	2
Neither 3	3
4	4
Extremely satisfied 5	5
Don't know/ No response	99

Q21C

Raw disaggregated data (MS Access database from 1994 to current)

Extremely dissatisfied 1	1
2	2
Neither 3	3
4	4
Extremely satisfied 5	5
Don't know/ No response	99

Q21D

Open Mapping Services

Extremely dissatisfied 1	1
2	2
Neither 3	3
4	4
Extremely satisfied 5	5
Don't know/ No response	99

Q21E

Google Earth

Extremely dissatisfied 1	1
2	2
Neither 3	3
4	4
Extremely satisfied 5	5
Don't know/ No response	99

Q21F

Query Site (Online Data Search)

Extremely dissatisfied 1	1
2	2
Neither 3	3
4	4
Extremely satisfied 5	5
Don't know/ No response	99

Q22A

Some dissatisfaction with Single Year Flat Files

You indicated some dissatisfaction with **Single Year Flat Files**. Can you provide some detail about why or what you were dissatisfied with?

Please specify	77
Don't know / No response	99

Q22B

Some dissatisfaction with Aggregated release data, last 5 years

You indicated some dissatisfaction with **aggregated release data (last 5 years)**. Can you provide some detail about why or what you were dissatisfied with?

Please specify	77
Don't know / No response	99

Q22C

You indicated some dissatisfaction with **raw disaggregated data**. Can you provide some detail about why or what you were dissatisfied with?

Please specify	77
Don't know / No response	99

Q22D

You indicated some dissatisfaction with **Open Mapping Services**. Can you provide some detail about why or what you were dissatisfied with?

Please specify	77
Don't know / No response	99

Q22E

You indicated some dissatisfaction with **Google Earth**. Can you provide some detail about why or what you were dissatisfied with?

Please specify	77
Don't know / No response	99

Q22F

You indicated some dissatisfaction with **Query Site (Online Data Search)**. Can you provide some detail about why or what you were dissatisfied with?

Please specify	77
Don't know / No response	99

Q23

Considering the type of content found within the files, how representative do you feel the file names are of their content?

Not at all representative 1	1
2	2
3	3
4	4
Completely representative 5	5
Don't know / No response	99

Q24 [1,10]

Over the last year, what types of NPRI information have you accessed?

Select all that apply

Data for specific geographic locations (community, postal code, municipality, city, province)	1
Data for specific facilities	2
Data for specific years	3
ECCC analysis of the data (data highlights)	4
Data for specific Industry sectors	5
Data for specific pollutants	6
Release data to specific medium (air, water and/or soil)	7

Data for transfers and disposals	8
Sector overviews	9
Other (please specify)	77
Don't know / Not applicable	99

Q25 [1,5]

Used NPRI data

The substances and data that are required to be reported to the NPRI have undergone many changes over the years. These changes can affect your data analysis. What tools/guidance, if any, have you used to help interpret the NPRI data?

Select all that apply

Substance list by threshold category webpage	1
History of reporting requirements webpage	2
Using and interpreting data from the NPRI webpage	3
Guide for reporting to the NPRI (link to webpage)	4
Other (please specify)	77
None	98
Don't know / No response	99

Q26

Used NPRI data

Are you able, with the current data products, to perform all your analyses or are there gaps?

Yes, I can perform all analyses	1
No, there are gaps	2
Don't know / No response	99

Q27

Used NPRI data

How can we improve our data products to meet your needs?

Please specify	77
Don't know / No response	99

Q28 [1,9]

Used NPRI data

If NPRI were to expand to other types of data offerings, what data formats or product types would you be interested in using?

Select all that apply

API	1
Xml	2
Tableau or PowerBI	3
Txt	4
Web services	5
Shape files	6
Online visualization	7
Custom maps	8
Other (please specify)	77
None, not interested in other formats/product types	98
Don't know / Not applicable	99

Q29

Advanced user

Have you ever combined NPRI data with other data?

Yes	1

No 2
Don't know / No response 99

Q29B [1,6]
Advanced user, combined NPRI data with other data

What other datasets have you used NPRI data with?

Select all that apply
Other environmental data (please specify) 78
Population trend data 1
Economic data 2
Substance Information (toxicity, fate and transport properties) 3
Health related data 4
Other (please specify) 77
None required 98
Don't know / Not applicable 99

Q29C
Advanced user, combined NPRI data with other data

For what purpose?

Please specify 77
Don't know / No response 99

Q29D
Advanced user, combined NPRI data with other data

What challenges did you have when you combined NPRI data with other datasets and what would have made it easier for you?

Please specify 77
Don't know / No response 99

PREQ29E
Advanced user, combined NPRI data with other data

How satisfied are you with the following aspects of the NPRI?

Q29E1
Advanced user, combined NPRI data with other data
Ability to link to other data
Extremely dissatisfied 1 1
2 2
Neither 3 3
4 4
Extremely satisfied 5 5
Don't know / No response 99

Q29E2
Advanced user, combined NPRI data with other data
Ability to perform comparisons within a sector
Extremely dissatisfied 1 1
2 2
Neither 3 3
4 4
Extremely satisfied 5 5
Don't know / No response 99

Q29E3

Advanced user, combined NPRI data with other data

Ability to perform regional/provincial comparisons

Extremely dissatisfied 1	1
2	2
Neither 3	3
4	4
Extremely satisfied 5	5
Don't know / No response	99

Q29E4

Advanced user, combined NPRI data with other data

Ability to perform substance to substance comparison

Extremely dissatisfied 1	1
2	2
Neither 3	3
4	4
Extremely satisfied 5	5
Don't know / No response	99

Q29E5

Advanced user, combined NPRI data with other data

Ability to compare relative risk

Extremely dissatisfied 1	1
2	2
Neither 3	3
4	4
Extremely satisfied 5	5
Don't know / No response	99

Q29F

Advanced user, combined NPRI data with other data, Some dissatisfaction with ability to link to other data of interest

You indicated some dissatisfaction with the **ability to link to other data of interest**. Can you provide some detail about why or what you were dissatisfied with?

Please specify	77
Don't know / No response	99

Q29G

Advanced user, combined NPRI data with other data, Some dissatisfaction with ability to perform comparisons within a sector

You indicated some dissatisfaction with the **ability to perform comparisons within a sector**. Can you provide some detail about why or what you were dissatisfied with?

Please specify	77
Don't know / No response	99

Q29H

Advanced user, combined NPRI data with other data, Some dissatisfaction with ability to perform regional/provincial comparisons

You indicated some dissatisfaction with the **ability to perform regional/provincial comparisons**. Can you provide some detail about why or what you were dissatisfied with?

Please specify	77
Don't know / No response	99

Q29H2

Advanced user, combined NPRI data with other data, Some dissatisfaction with ability to perform substance to substance comparison

You indicated some dissatisfaction with the **ability to perform substance to substance comparison**. Can you provide some detail about why or what you were dissatisfied with?

Please specify	77
Don't know / No response	99

Q29H3

Advanced user, combined NPRI data with other data, Some dissatisfaction with ability to compare relative risk

You indicated some dissatisfaction with the **ability to compare relative risk**. Can you provide some detail about why or what you were dissatisfied with?

Please specify	77
Don't know / No response	99

Q29I

Advanced user, have not combined NPRI data with other data

Would you like to be able to link NPRI data to other data?

Yes (which ones?)	77
No	2
Don't know / No response	99

Q29J

Advanced user, have not combined NPRI data with other data, would like to be able to link NPRI data to other data

What benefits would this provide to you?

Please specify	77
Don't know / No response	99

Q30 [1,3]

Advanced user

Do you currently use other sources of information to provide context to NPRI data? Context could refer to information about the toxicity, fate and transport properties of NPRI substances.

Select all that apply

US EPA's RSEI (Risk Screening Environment Indicators) model	1
Risk Scoring system by Scorecard	2
Other (please specify)	77
No	98
Don't know / Not applicable	99

Q30B

Advanced user, currently use other sources of information to provide context to NPRI data

Are there any pros/cons of these tools that gives more context to the data you want NPRI be aware of?

Please specify	77
Don't know / No response	99

Q30C

Advanced user, currently use other sources of information to provide context to NPRI data

If NPRI offered a tool to incorporate more context to NPRI data, would you use it?

Yes	1
No	2

Don't know / No response   99

Q30D

Advanced user, currently use other sources of information to provide context to NPRI data

Please explain how you would use the tool to incorporate more context to NPRI data.

Please specify   77
Don't know / No response   99

PREQ31

How would you describe your level of knowledge and comfort with:

Q31A

 Searching the Internet to find specific information

Not at all knowledgeable/ comfortable 1   1
2   2
3   3
4   4
Very comfortable/ knowledgeable 5   5
Don't know / No response   99

Q31B

 Using search functions and filters in an online data tool to get the specific information you need

Not at all knowledgeable/ comfortable 1   1
2   2
3   3
4   4
Very comfortable/ knowledgeable 5   5
Don't know / No response   99

Q31C

 Using spreadsheets to capture and manipulate data

Not at all knowledgeable/ comfortable 1   1
2   2
3   3
4   4
Very comfortable/ knowledgeable 5   5
Don't know / No response   99

Q31D

 Using information data bases to perform advanced analysis (e.g., pollution trends)

Not at all knowledgeable/ comfortable 1   1
2   2
3   3
4   4
Very comfortable/ knowledgeable 5   5
Don't know / No response   99

THNK

Those are all the questions we have for you. Thank you very much for taking the time to complete this survey, it is greatly appreciated.

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