

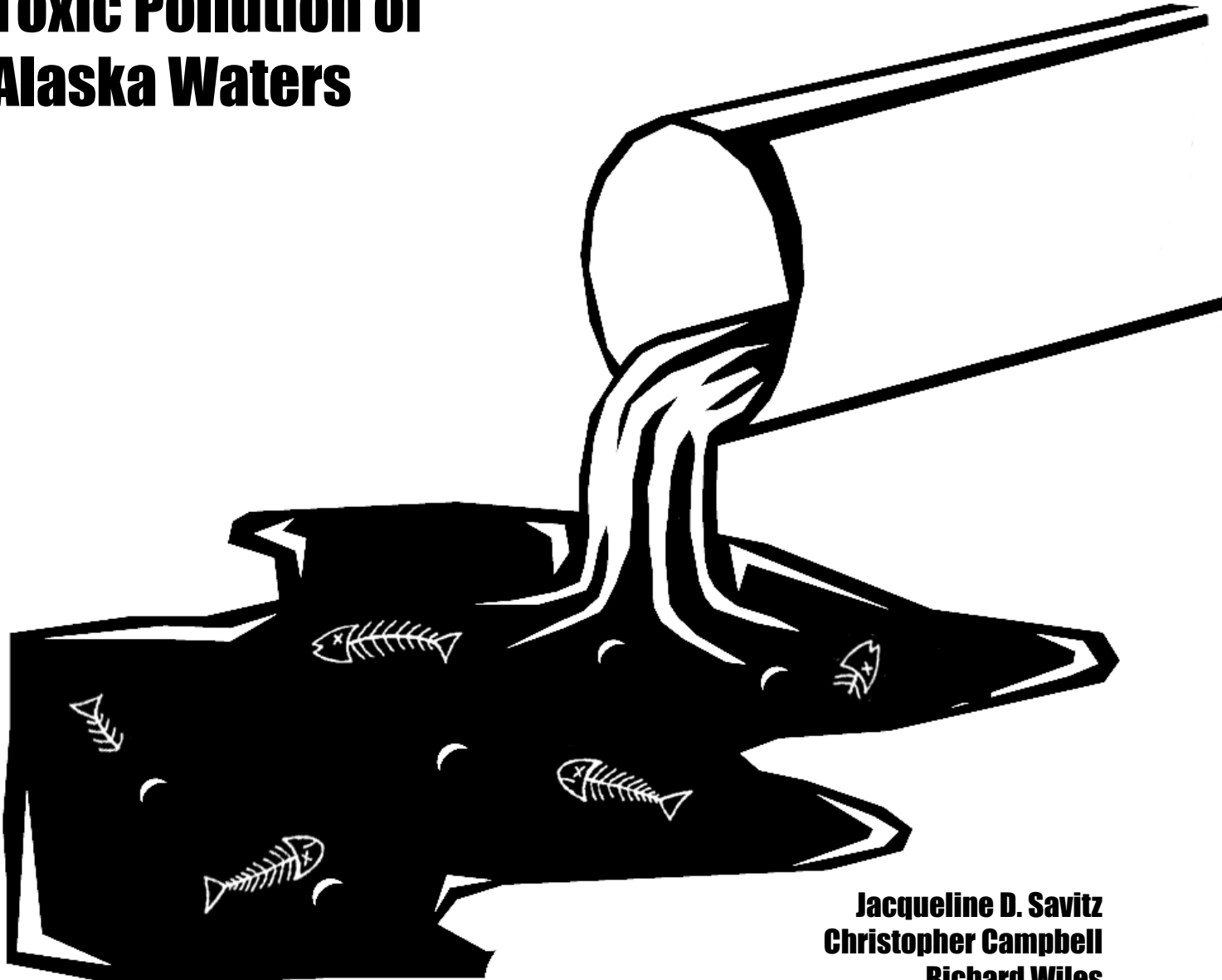


The State PIRGs



Dishonorable Discharge

Toxic Pollution of Alaska Waters



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Toxic Pollution of Alaska Waters

Executive Summary

Most Alaska citizens would be surprised to learn that scores of businesses and facilities across the state *legally* dump tons of toxic chemicals into the state's rivers, streams, lakes, and bays. Many of these same polluters flush millions more pounds of toxic substances down the drain to sewage treatment plants that taxpayers pay to operate and maintain. None of the toxic chemicals sent to publicly financed sewage treatment systems are reported as pollution by the EPA, even though a great deal of the toxic load eventually finds its way to Alaska streams and rivers.

The citizens of Alaska have a right to know about any pollution of their water, air or land that may pose a risk to human health or the environment. The goal of *Dishonorable Discharge* is to inform the public about the massive level of toxic pollution of the waters in their state, and point out the need for more comprehensive reporting of toxic chemical use, transport, and pollution, in Alaska and nationwide.

Factories and other industrial facilities dumped more than 16.8 million pounds of toxic substances directly into Alaska's waters between 1990 and 1994, according to a new analysis of the federal Toxics Release Inventory (TRI) (Table 1). Alaska ranked 9th among the states in toxic water pollution reported over those five years. Because of weaknesses and loopholes in federal pollution laws, most, if not all of these toxic discharges are perfectly legal.

As large as they are, these figures substantially underestimate toxic releases to waters and the environment because the TRI requires reporting of only about 340 of the 73,000 chemicals in commerce. The TRI also exempts certain industries from reporting, including utilities, sewage treatment plants, municipal incinerators, and manufacturing facilities with fewer than ten employees.

In addition, thirty-nine thousand pounds of toxic materials were flushed to sewage treatment plants in Alaska from 1990 through 1994 (Table 1.) EPA estimates that twenty-five percent of all discharges nationwide flow through sewage treatment plants untreated (EPA 1995). Applying this 25 percent estimate to Alaska raises the total amount of toxics dumped to the state's waters to an estimated 16.9 million pounds (Table 1).

Ward Cove received the greatest amount of toxic water pollution in Alaska from 1990-1994, a total of 14,300,000 pounds, followed by Cook Inlet, Silver Bay, and Sawmill Creek (Table 2). The four most polluted waterways in Alaska received 16,700,000 pounds of toxic pollution between 1990 and 1994, 99.3% percent of the total in the State.

The top three facilities reporting the most toxic pollution of Alaska's waters over this period were Ketchikan Pulp Company in Ketchikan, which dumped 14,300,000 pounds of toxic chemicals, followed by Unocal Agricultural Products., and Alaska Pulp Corporation* in the towns of Kenai, and Sitka, respectively (Table 3). The toxic chemicals dumped in the greatest amounts were methanol, a total of 6,840,000 pounds, followed by hydrochloric acid, and ammonia (Table 4).

Ketchikan Pulp Company dumped the most carcinogens into Alaska's waters, a total of 240,000 pounds, followed by Alaska Pulp Corporation* and Unocal Agricultural Products (Table 8). Ward Cove received the greatest amount of cancer-causing toxic chemicals in Alaska, a total of 240,000 pounds, followed by Silver Bay and Cook Inlet (Table 7).

Unocal Agricultural Products dumped the greatest amount of persistent toxic metals in Alaska's waters, a total of 950 pounds (Table 8). These metals were released into Cook Inlet, which, as a result, received the greatest amount of persistent toxic metals (Table 7).

Tesoro Alaska Petroleum Company dumped the greatest amount of toxic chemicals that cause reproductive damage or birth defects into Alaska's waters, a total of 257 pounds (Table 8). The Cook Inlet received the greatest amount of toxic chemicals that cause reproductive damage or birth defects, a total of 337 pounds (Table 7).

These discharges to Alaska's waters include only those wastes released by companies physically located in Alaska. Information on toxic water pollution in other states can be found in EWG's state reports series, and in the national report, *Dishonorable Discharge*.

Recommendations

Americans have a right to know about any use, transport, or release of toxic substance in their communities that might pose a risk to human health or the environment. Required reporting under the TRI provides only a small portion of this information. Much more complete reporting is needed. Americans also have a right to know about toxic chemicals in the products they buy that may pose a risk to them and their children.

Full accounting of the use of toxic materials reveals many low cost opportunities for pollution prevention. In New Jersey, state officials estimate that every dollar spent on such materials accounting practices generates five to eight dollars in increased efficiency (GAO 1994). Without materials accounting industry will miss many opportunities for substantial low cost reductions in pollution, and the public and policy makers will be unable formulate strategies that most effectively reduce exposure to toxic substances in the environment and consumer products.

We recommend:

- Timely implementation of the EPA's proposed expansion of industries and facilities required to report toxic releases under the TRI.
- Expansion of TRI reporting requirements to include full materials accounting for any facility or industry that uses or releases a toxic substance that may pose a risk to human health and the environment.

*This facility reported no discharges in 1994, and may also have reported zero discharges for other years.

Dishonorable Discharge

Toxic pollution of rivers, lakes, streams, and bays is a serious problem in all 50 states. Twenty five years after the passage of the Clean Water Act, nearly forty (40) percent of America's rivers, lakes, and coastal waters remain unsafe for fishing, swimming or basic recreation (EPA 1996b). The pollution that fouls these waterways costs the state's economy millions of dollars in tourism, fishing, and development revenues that otherwise could be earned on or near these waters were they not so polluted (EPA 1996b).

***Dishonorable Discharge* Underestimates Toxic Pollution**

The Toxics Release Inventory (TRI) provides a rough estimate of a small portion of the toxic chemicals that flow into America's waters. The toxic discharges reported in this study are based on TRI reported toxic releases to waterways and so-called "transfers" of toxics to publicly owned treatment works (POTWs) — the term of art that industry and the EPA use when an industrial facility dumps toxic chemicals into the local sewer.

The figures reported in *Dishonorable Discharge* dramatically underestimate the total amounts of toxic compounds that have been discharged, dumped, or made their way into rivers and lakes across the country over the past five years.

About 90¹ percent of all toxic discharges coming out of pipes into water (so-called point source discharges) are not reported to the TRI. This is because the TRI requires reporting on only about 343² of some 73,000 chemicals used in commerce, and because the TRI exempts many polluters (utilities, certain industries, and those with fewer than ten employees) from reporting requirements (EPA 1996).

About half of all toxics that pollute rivers come from surface runoff and air deposition, as opposed to pipes. Comprehensive accounting of this "nonpoint source" pollution is not available for all rivers on a national basis.

Taking all of the limitations of the existing information into account, Environmental Working Group believes that an accurate estimate of the total load of toxic pollution in many rivers and lakes over the past five years might be 20 times greater than the amounts reported here.

Hiding Toxics in the Sewer

The EPA does not include so-called "transfers" of toxic chemicals to sewer systems as an official "release" of a toxic chemical into the environment (EPA 1996). At the same time, the EPA estimates that 25 percent of all toxic chemicals transferred to sewers from industrial facilities pass through treatment and into the waterways that receive wastewater (EPA 1995).

Transfers of toxic chemicals to publicly owned treatment works (POTWs) — otherwise known as sewage treatment plants — were four times greater in 1994 than the amount of toxic chemicals released directly to water that are reported in the entire TRI that year. To estimate the total amounts of toxic substances dumped into Alaska’s waters, we used EPA’s assumption that 25 percent of all toxic chemicals transferred to POTWs pass-through untreated³ Table 1 presents the EWG estimate of toxic chemicals assumed to be discharged by the POTWs in Alaska. Estimates of toxic discharges from POTWs to specific rivers and bodies of water could not be accurately estimated because the sewage treatment plants are not required to report to the TRI.

Assuming a 25 percent flow-through does not permit discharge estimates for individual toxic chemicals that flow through the sewer system into waterways. In reality some chemicals flow through POTW’s untouched, while others are removed and held in the sludge, broken down in treatment, or allowed to evaporate into the ambient air as toxic pollutants.

How Toxic is Toxic?

Some 340 substances were required to be reported to the EPA for the years analyzed in this report. According to the EPA:

“For a chemical or chemical category to remain on or be added to the TRI list, it must be known to cause or reasonably be anticipated to cause one of the following:

- Significant adverse acute health effects at concentration levels that are reasonably likely to exist beyond facility boundaries as a result of continuous, or frequently recurring releases;
- In humans — cancer; teratogenic effects; or serious irreversible reproductive dysfunction, neurologic disorders, heritable genetic mutations, or other chronic health effects;
- A significant adverse effect on the environment because of its toxicity, its toxicity and persistence in the environment, or its toxicity and tendency to bioaccumulate in the environment of sufficient seriousness to warrant reporting under EPCRA section 313” (EPA 1996).

For most of the TRI chemicals, federal regulators and scientists have a disturbingly incomplete understanding of the long term toxic effects on the environment or human health. The vast majority of compounds reported in the TRI are not fully studied, even though they have triggered one of the above criteria.

Toxic discharges and runoff to water are a serious and largely unaddressed environmental and human health problem. Most, if not all of the pollution reported in Dishonorable Discharge is legal. Current pollution control laws like the Clean Water Act (CWA), the Resource Conservation and Recovery Act (RCRA), and the Toxic Substances Control Act (TSCA) do little to move the nation towards reducing the toxic pollution cited in this report. In effect, these laws issue pollution licenses or exemptions from regulations.

One of the more glaring exemptions may be the so-called “domestic sewage exclusion” under RCRA, whereby toxic contaminants sent to sewage treatment plants escape otherwise applicable federal hazardous waste regulations. This accounts for the huge amounts of toxic chemicals that were dumped down the drain by American industry and end up in the nation’s rivers and streams. Another major source of toxic pollution of waters is agricultural pesticides. The runoff of pesticides from agricultural fields is not regulated under any federal law, and is not tabulated by the TRI nor included in this report. About 1.1 billion pounds⁴ of pesticides were used in the United States in 1993 alone (Aspelin 1994).

Dishonorable Discharge is based on data collected by the U.S. Environmental Protection Agency’s Toxics Release Inventory (TRI) for the reporting years 1990 through 1994, which includes the most recent data available. It includes the releases of only 343 chemicals from about 27,000 manufacturing facilities. The limitations of these data have been described above.

Analyzing Discharges by Body of Water

Discharges from TRI facilities were assigned to a given waterway based on the “receiving stream” reported to the EPA. Most waterways reported as “tributary” streams were included with their respective rivers in this report when it was possible to link them. For purposes of this analysis, toxic release data for major rivers themselves are tabulated separately, not summed as part of larger watersheds. For example, a “Tributary to the Mississippi River” was counted as Mississippi River, while the Missouri River was not, even though it eventually joins the Mississippi just above St. Louis. Small streams receiving large quantity discharges (such as Gravelly Run in Virginia and Clear Creek in Colorado) were reported individually, just as they are recorded in the TRI. State-level reports only include discharges to a given river from facilities that are physically located in this state, not discharges from facilities located in other states upstream.

Reporting Toxics Dumped Down the Drain

Enormous quantities of toxic chemicals are discharged to waterways via sewer systems. These so-called “transfers” of toxic chemicals to publicly owned treatment works (POTWs) totaled more than 250 million pounds in 1994, compared to 66 million pounds of direct discharges to waters reported in that same year. While the EPA does not count these transfers as environmental releases in the TRI, the Agency estimates that an average of 25 percent of these transfers flow through sewer systems into receiving waters (EPA 1995).

To better illustrate the amount of toxic chemicals that actually make it into the nation’s waters each year, we assumed that on average 25 percent of the toxic chemicals transferred to POTWs (a.k.a. sewers) by a reporting facility, ultimately pass through the sewage treatment plant untreated and in most cases are discharged to receiving waters.

Toxic chemical releases through POTWs were estimated statewide, but were not attributed to specific rivers at the state level due to the difficulty of verifying the receiving waters. Environmental Working Group will attempt to identify receiving waters more precisely future reports. All other analyses including facility discharges and top chemicals reflect direct discharges only, and not POTW release estimations.

Total discharges of persistent toxic metals, known or possible carcinogens, and chemicals known to cause reproductive effects, were calculated for specific rivers

based on information characterizing the toxic properties of these substances previously published by the EPA, the State of California, and the State of New Jersey, as well as other toxicological literature (Environmental Protection Agency, 1996; California Code of Regulations; New Jersey Department of Health; and Dixon, 1986). EPA's inclusion of known, probable, and possible carcinogens is based on determinations made by the Occupational Safety and Health Administration (OSHA), the National Toxicology Program (NTP), and the International Agency for Research on Cancer (IARC) (EPA 1996). Lists of chemicals included are found in the Appendix.

Notes

¹Estimate based on EPA report (National Sediment Contaminant Point Source Inventory: Analysis of Release Data for 1992. Final Draft.) (EPA, 1995) where data from TRI were compared to the Permit Compliance System (PCS) Database and found to represent only about 9%, at most, of discharges reported in PCS. Estimates from the GAO indicate that PCS regulates only 23% of all toxic water pollution (GAO, 1994).

²The exact number of chemicals required varies with the year. In 1994, 343 chemicals were reported. EPA has recently expanded the inventory to include about 650. These data, to be reported for 1995, will be available in 1997.

³EPA uses this factor since it is unlikely to greatly overestimate or underestimate the exact treatment efficiency (EPA 1995). This number will vary for any specific chemical; however it estimates pass through for chemicals as a whole, and is not applied to specific chemicals in this report.

⁴This value refers to pesticide active ingredients. The total volume of pesticide products, including so-called inert ingredients is far higher.

Appendix

Carcinogens

1,1,2,2-Tetrachloroethane	beta-Propiolactone	Michler's ketone
1,1-Dimethylhydrazine (UDMH) (alar trans. prod.)	Bis (2-chloroethyl) ether	Mustard Gas
1,2-Dibromo-3-chloropropane (DBCP)	Bis(chloromethyl) ether	N-Nitroso-N-ethylurea
1,3-Butadiene	Bromodichloromethane	N-Nitroso-N-methylurea
1,3-Dichloropropylene	Bromoform	N-Nitrosodi-n-butylamine
1,3-Propane sultone	Cadmium	N-Nitrosodi-n-propylamine
1,4-Dioxane	Cadmium compounds	N-Nitrosodiethylamine
1-Amino-2-methylantraquinone	Captan	N-Nitrosodimethylamine
1-Naphthylamine	Carbon tetrachloride	N-Nitrosodiphenylamine
2,4,6-Trichlorophenol	Chlordane	N-Nitrosomethylvinylamine
2,4-Diaminoanisole	Chloroethane (Ethyl chloride)	N-Nitrosomorpholine
2,4-Diaminoanisole sulfate	Chloroform	N-Nitrososarcosine
2,4-Diaminotoluene	Chloromethyl methyl ether	N-Nitrosopiperidine
2,4-Dinitrotoluene	Chlorophenols	Nickel
2-Acetylaminofluorene	Chlorothalonil	Nickel compounds
2-Aminoanthraquinone	Chromium	Nitrotriacetic acid
2-Methylaziridine (Propyleneimine)	Cupferron	Nitrofen
2-Naphthylamine	D&C Red No. 19	Nitrogen mustard (Mechlorethamine)
2-Nitropropane	DDVP (Dichlorvos)	ortho-Anisidine
3,3'-Dichlorobenzidine	Di -(2-ethylhexyl)phthalate	ortho-Anisidine hydrochloride
3,3'-Dimethoxybenzidine (ortho-Dianisidine)	Dichloromethane (Methylene chloride)	ortho-Toluidine
3,3'-Dimethylbenzidine	Diepoxybutane	ortho-Toluidine hydrochloride
4,4'-Diaminodiphenyl ether (4,4'-Oxydianiline)	Diethyl sulfate	p-Aminoazobenzene
4,4'-Methylene bis(2-chloroaniline)	Dimethyl sulfate	p-Cresidine
4,4'-Methylene bis(N,N-dimethyl) benzenamine	Dimethylcarbamoyl chloride	p-Dichlorobenzene
4,4'-Methylenedianiline	Direct Black 38	p-Nitrosodiphenylamine
4,4'-Thiodianiline	Direct Blue 6	Pentachlorophenol
4-Aminobiphenyl (4-aminodiphenyl)	Direct Brown 95	Polybrominated biphenyls
4-Dimethylaminoazobenzene	Epichlorohydrin	Polychlorinated biphenyls
4-Nitrobiphenyl	Ethyl acrylate	Propylene oxide
5-Nitro-o-anisidine	Ethylene dibromide	Saccharin
Acetaldehyde	Ethylene dichloride (1,2-Dichloroethane)	Safrole
Acetamide	Ethylene oxide	Styrene
Acrylamide	Ethylene thiourea (EBDC trans prod.)	Styrene oxide
Acrylonitrile	Ethyleneimine	Tetrachloroethylene (Perchloroethylene)
Allyl chloride	Formaldehyde	Thioacetamide
Aniline	Hexachlorobenzene	Thiourea
Arsenic	Hexachloroethane	Toluene-2,4-diisocyanate
Arsenic compounds	Hexamethylphosphoramide	Toluene-2,6-diisocyanate
Asbestos	Hydrazine	Toxaphene (Polychlorinated camphenes)
Auramine	Hydrazine sulfate	Trichloroethylene
Benzene	Hydrazobenzene (1,2-Diphenylhydrazine)	Tris(2,3-dibromopropyl)phosphate
Benzidine [and its salts]	Isosafrole	Urethane (Ethyl carbamate)
Benzotrichloride	Lead	Vinyl bromide
Benzyl chloride	Lead compounds	Vinyl chloride
Beryllium and beryllium compounds	Lindane	Vinyl trichloride (1,1,2-Trichloroethane)
Beryllium compounds	Methyl iodide	

Persistent Toxic Metals

Antimony & Antimony Compounds
Arsenic & Arsenic Compounds
Barium & Barium Compounds
Beryllium & Beryllium Compounds
Cadmium & Cadmium Compounds
Chromium & Chromium Compounds
Cobalt & Cobalt Compounds
Copper & Copper Compounds
Lead & Lead Compounds
Manganese & Manganese Compounds
Mercury & Mercury Compounds
Nickel & Nickel Compounds
Selenium & Selenium Compound
Silver & Silver Compounds
Thallium & Thallium Compounds
Zinc & Zinc Compounds

Chemicals that Affect Reproduction

1,2-Dibromo-3-chloropropane
Cadmium
Carbon disulfide
Diethylhexyl phthalate
o-Dinitrobenzene
m-Dinitrobenzene
p-Dinitrobenzene
Ethylene glycol monoethyl ether
Ethylene glycol monomethyl ether
Ethylene oxide
Hexamethylphosphoramide
Lead
Styrene
Toluene
Trichloroethylene
Xylene(mixed isomers)
o-xylene
m-xylene
p-xylene
Di-n-butyl phthalate
Glycol ethers
Mercury Compounds
Mercury
Benzene
Aluminum
Arsenic
Nickel
Lindane
Vinyl Chloride

Source: Environmental Working Group. Compiled from California Proposition 65, EPA's TRI Public Data Release, New Jersey Department of Health, Hazardous Substances Fact Sheets, and Toxic Responses of the Reproductive System (Dixon 1986).

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Alaska

Toxic pollution of Alaska waters (1990-1994)

Table 1. Total reported toxic pollution of Alaska waters (1990-1994).

Direct Water Discharges	16,864,239 Pounds
Estimated Sewer Discharges‡	9,789 Pounds
Total Discharges to Waters	16,874,028 Pounds

Table 2. Alaska waters receiving the greatest amounts of toxic pollution (1990-1994).

River or Water Body	Toxic chemical release to waterbody (pounds)
Ward Cove	14,261,169
Cook Inlet	1,322,140
Silver Bay	1,157,850
Sawmill Creek	3,000

Table 3. Polluters reporting the greatest amounts of toxic chemicals discharged to Alaska waters (1990-1994).

Facility	City	Toxic chemical release to waters (pounds)
Ketchikan Pulp Co.	Ketchikan	14,261,169
Unocal Agricultural Prods.	Kenai	1,290,096
Alaska Pulp Corp.*	Sitka	1,160,850
U.S. Air Force	Clear	120,000
Tesoro Alaska Petroleum Co.	Kenai	31,956

Table 4. Toxic chemicals discharged in the greatest amounts to Alaska waters (1990-1994).

Chemical	Toxic chemical release to waters (pounds)
Methanol	6,835,910
Hydrochloric acid	6,642,980
Ammonia	2,521,533
Chloroform	332,741
Sulfuric acid	332,405
Phosphoric acid	124,739
Ethylene glycol	47,423
Acetone	12,400
Nitric acid	9,100
Chlorine	3,045

Table 5. Polluters reporting the greatest amounts of toxic chemicals discharged to Alaska sewage treatment facilities (1990-1994).

Facility	City	Toxic chemical release to sewers (pounds)
U.S. Air Force Elmendorf	Elmendorf Afb	37,850
U.S. Air Force Galena AFB	Galena	1,250

‡ Total discharges of toxic chemicals to sewer systems in Alaska was 39,159 in 1990-94. EPA estimates that 25% of all toxic discharges to sewers pass through sewage treatment plants to receiving waters (EPA 1995).

* This polluter did not report any discharges to water in 1994. See Table 9 for year to year pollution figures.

Source: Environmental Working Group. Compiled from U.S. Environmental Protection Agency, Toxics Release Inventory 1990-1994.

Alaska

Toxic pollution of Alaska waters (1990-1994). Carcinogens, persistent toxic metals, and reproductive toxins

Table 6. Total carcinogens, persistent toxic metals, and reproductive toxins** discharged into Alaska waters (1990-1994).**

Carcinogens	333,330 Pounds
Persistent Toxic Metals	951 Pounds
Reproductive Toxins	382 Pounds
Total (see note)	334,074 Pounds

Note: The sum of carcinogens, persistent toxic metals, and reproductive toxins listed in Table 6 may be larger than the total because a chemical may be in one or more categories, i.e. a chemical may be both a carcinogen and a reproductive toxin. Chemicals were counted only once for the total in Table 6.

Table 7. Alaska waters receiving the greatest amounts of carcinogens, persistent toxic metals, and reproductive toxins** (1990-1994).**

Waters receiving the greatest amounts of carcinogenic chemicals in Alaska (1990-1994).**

River or Water Body	Carcinogens** released to waters (lbs.)
Ward Cove	239,741
Silver Bay	93,000
Cook Inlet	574

Waters receiving the greatest amounts of persistent toxic metals in Alaska (1990-1994).

River or Water Body	Persistent toxic metals released to waters (lbs.)
Cook Inlet	951

Waters receiving the greatest amounts of reproductive toxins in Alaska (1990-1994).**

River or Water Body	Reproductive toxins** released to waters (lbs.)
Cook Inlet	337

Table 8. Polluters reporting the greatest amounts of carcinogens, persistent toxic metals, and reproductive toxins** discharged to Alaska waters (1990-1994).**

Top dischargers of carcinogenic chemicals to Alaska waters (1990-1994).**

Facility	City	Carcinogens** released to waters (lbs.)
Ketchikan Pulp Co.	Ketchikan	239,741
Alaska Pulp Corp.*	Sitka	93,000
Unocal Agricultural Prods.	Kenai	434
Tesoro Alaska Petroleum Co.	Kenai	104

Top dischargers of persistent toxic metals to Alaska waters (1990-1994).

Facility	City	Persistent toxic metals released to waters (lbs.)
Unocal Agricultural Prods.	Kenai	951

Top dischargers of reproductive toxins to Alaska waters (1990-1994).**

Facility	City	Reproductive toxins** released to waters (lbs.)
Tesoro Alaska Petroleum Co.	Kenai	257

* This polluter did not report any discharges to water in 1994. See Table 9 for year to year pollution figures.

** Carcinogens and reproductive toxins defined by the State of California Proposition 65, EPA's TRI Public Data Release and other literature. See full report for references.

Source: Environmental Working Group. Compiled from U.S. Environmental Protection Agency, Toxics Release Inventory 1990-1994.

Ward Cove in Alaska

Total toxic pollution reported (1990-1994): 14,261,169 Pounds

Table 1. Polluters discharging the greatest amounts of toxic chemicals to Ward Cove in Alaska (1990-1994).

Facility	City	Toxic chemical release to water (pounds)
Ketchikan Pulp Co.	Ketchikan	14,261,169

Table 2. Toxic chemicals discharged in the greatest amounts to Ward Cove in Alaska (1990-1994).

Chemical	Toxic chemical release to waterbody (pounds)
Methanol	6,727,800
Hydrochloric acid	6,595,630
Ammonia	645,354
Chloroform	239,741
Sulfuric acid	52,405
Phosphoric acid	239

‡ The sum of carcinogens, persistent toxic metals, and reproductive toxins listed in Table 3 may be larger than the total because a chemical may be in one or more categories. Chemicals were counted only once for the total in Table 3.

* This polluter did not report any discharges to water in 1994. See Table 9 for year to year pollution figures.

** Carcinogens and reproductive toxins defined by the State of California Proposition 65, EPA's TRI Public Data Release and other literature. See full report for references.

Table 3. Total carcinogens, persistent toxic metals, and reproductive toxins** discharged to Ward Cove in Alaska (1990-1994).**

Carcinogens	239,741 Pounds
Persistent Toxic Metals	0 Pounds
Reproductive Toxins	0 Pounds
Total‡	239,741 Pounds

Table 4. Polluters reporting the greatest amounts of carcinogens, persistent toxic metals, and reproductive toxins** discharged to Ward Cove in Alaska (1990-1994).**

Top dischargers of carcinogens to Ward Cove in Alaska (1990-1994).**

Facility	City	Carcinogens** released to water (lbs)
Ketchikan Pulp Co.	Ketchikan	239,741

Top dischargers of persistent toxic metals to Ward Cove in Alaska (1990-1994).

Facility	City	Persistent toxic metals released to water (lbs)

Top dischargers of reproductive toxins to Ward Cove in Alaska (1990-1994).**

Facility	City	Reproductive toxins** released to water (lbs)

Cook Inlet in Alaska

Total toxic pollution reported (1990-1994): 1,322,140 Pounds

Table 1. Polluters discharging the greatest amounts of toxic chemicals to Cook Inlet in Alaska (1990-1994).

Facility	City	Toxic chemical release to water (pounds)
Unocal Agricultural Prods.	Kenai	1,290,096
Tesoro Alaska Petroleum Co.	Kenai	31,956

Table 2. Toxic chemicals discharged in the greatest amounts to Cook Inlet in Alaska (1990-1994).

Chemical	Toxic chemical release to waterbody (pounds)
Ammonia	1,264,179
Ethylene glycol	47,423
Sulfuric acid	4,500
Methanol	4,110
Nickel compounds	434
Zinc compounds	256
Copper compounds	255
1,2,4-Trimethylbenzene	255
Naphthalene	250
Benzene	140

‡ The sum of carcinogens, persistent toxic metals, and reproductive toxins listed in Table 3 may be larger than the total because a chemical may be in one or more categories. Chemicals were counted only once for the total in Table 3.

* This polluter did not report any discharges to water in 1994. See Table 9 for year to year pollution figures.

** Carcinogens and reproductive toxins defined by the State of California Proposition 65, EPA's TRI Public Data Release and other literature. See full report for references.

Table 3. Total carcinogens, persistent toxic metals, and reproductive toxins** discharged to Cook Inlet in Alaska (1990-1994).**

Carcinogens	574 Pounds
Persistent Toxic Metals	951 Pounds
Reproductive Toxins	337 Pounds
Total‡	1,288 Pounds

Table 4. Polluters reporting the greatest amounts of carcinogens, persistent toxic metals, and reproductive toxins** discharged to Cook Inlet in Alaska (1990-1994).**

Top dischargers of carcinogens to Cook Inlet in Alaska (1990-1994).**

Facility	City	Carcinogens** released to water (lbs)
Unocal Agricultural Prods.	Kenai	434
Tesoro Alaska Petroleum Co.	Kenai	104

Top dischargers of persistent toxic metals to Cook Inlet in Alaska (1990-1994).

Facility	City	Persistent toxic metals released to water (lbs)
Unocal Agricultural Prods.	Kenai	951

Top dischargers of reproductive toxins to Cook Inlet in Alaska (1990-1994).**

Facility	City	Reproductive toxins** released to water (lbs)
Tesoro Alaska Petroleum Co.	Kenai	257

Silver Bay in Alaska

Total toxic pollution reported (1990-1994): 1,157,850 Pounds

Table 1. Polluters discharging the greatest amounts of toxic chemicals to Silver Bay in Alaska (1990-1994).

Facility	City	Toxic chemical release to water (pounds)
Alaska Pulp Corp.*	Sitka	1,157,850

Table 2. Toxic chemicals discharged in the greatest amounts to Silver Bay in Alaska (1990-1994).

Chemical	Toxic chemical release to waterbody (pounds)
Ammonia	612,000
Sulfuric acid	155,500
Phosphoric acid	124,500
Methanol	104,000
Chloroform	93,000
Hydrochloric acid	47,350
Acetone	12,400
Nitric acid	9,100

‡ The sum of carcinogens, persistent toxic metals, and reproductive toxins listed in Table 3 may be larger than the total because a chemical may be in one or more categories. Chemicals were counted only once for the total in Table 3.

* This polluter did not report any discharges to water in 1994. See Table 9 for year to year pollution figures.

** Carcinogens and reproductive toxins defined by the State of California Proposition 65, EPA's TRI Public Data Release and other literature. See full report for references.

Table 3. Total carcinogens, persistent toxic metals, and reproductive toxins** discharged to Silver Bay in Alaska (1990-1994).**

Carcinogens	93,000 Pounds
Persistent Toxic Metals	0 Pounds
Reproductive Toxins	0 Pounds
Total‡	93,000 Pounds

Table 4. Polluters reporting the greatest amounts of carcinogens, persistent toxic metals, and reproductive toxins** discharged to Silver Bay in Alaska (1990-1994).**

Top dischargers of carcinogens to Silver Bay in Alaska (1990-1994).**

Facility	City	Carcinogens** released to water (lbs)
Alaska Pulp Corp.*	Sitka	93,000

Top dischargers of persistent toxic metals to Silver Bay in Alaska (1990-1994).

Facility	City	Persistent toxic metals released to water (lbs)

Top dischargers of reproductive toxins to Silver Bay in Alaska (1990-1994).**

Facility	City	Reproductive toxins** released to water (lbs)

Sawmill Creek in Alaska

Total toxic pollution reported (1990-1994): 3,000 Pounds

Table 1. Polluters discharging the greatest amounts of toxic chemicals to Sawmill Creek in Alaska (1990-1994).

Facility	City	Toxic chemical release to water (pounds)
Alaska Pulp Corp.*	Sitka	3,000

Table 2. Toxic chemicals discharged in the greatest amounts to Sawmill Creek in Alaska (1990-1994).

Chemical	Toxic chemical release to waterbody (pounds)
Chlorine	3,000

‡ The sum of carcinogens, persistent toxic metals, and reproductive toxins listed in Table 3 may be larger than the total because a chemical may be in one or more categories. Chemicals were counted only once for the total in Table 3.

* This polluter did not report any discharges to water in 1994. See Table 9 for year to year pollution figures.

** Carcinogens and reproductive toxins defined by the State of California Proposition 65, EPA's TRI Public Data Release and other literature. See full report for references.

Table 3. Total carcinogens, persistent toxic metals, and reproductive toxins** discharged to Sawmill Creek in Alaska (1990-1994).**

Carcinogens	0 Pounds
Persistent Toxic Metals	0 Pounds
Reproductive Toxins	0 Pounds
Total‡	0 Pounds

Table 4. Polluters reporting the greatest amounts of carcinogens, persistent toxic metals, and reproductive toxins** discharged to Sawmill Creek in Alaska (1990-1994).**

Top dischargers of carcinogens to Sawmill Creek in Alaska (1990-1994).**

Facility	City	Carcinogens** released to water (lbs)

Top dischargers of persistent toxic metals to Sawmill Creek in Alaska (1990-1994).

Facility	City	Persistent toxic metals released to water (lbs)

Top dischargers of reproductive toxins to Sawmill Creek in Alaska (1990-1994).**

Facility	City	Reproductive toxins** released to water (lbs)

Alaska

Toxic pollution of Alaska waters (1990-1994). Carcinogens, persistent toxic metals, and reproductive toxins

Table 6. Total carcinogens, persistent toxic metals, and reproductive toxins** discharged into Alaska waters (1990-1994).**

Carcinogens	333,330 Pounds
Persistent Toxic Metals	951 Pounds
Reproductive Toxins	382 Pounds
Total (see note)	334,074 Pounds

Note: The sum of carcinogens, persistent toxic metals, and reproductive toxins listed in Table 6 may be larger than the total because a chemical may be in one or more categories, i.e. a chemical may be both a carcinogen and a reproductive toxin. Chemicals were counted only once for the total in Table 6.

Table 7. Alaska waters receiving the greatest amounts of carcinogens, persistent toxic metals, and reproductive toxins** (1990-1994).**

Waters receiving the greatest amounts of carcinogenic chemicals in Alaska (1990-1994).**

River or Water Body	Carcinogens** released to waters (lbs.)
Ward Cove	239,741
Silver Bay	93,000
Cook Inlet	574

Waters receiving the greatest amounts of persistent toxic metals in Alaska (1990-1994).

River or Water Body	Persistent toxic metals released to waters (lbs.)
Cook Inlet	951

Waters receiving the greatest amounts of reproductive toxins in Alaska (1990-1994).**

River or Water Body	Reproductive toxins** released to waters (lbs.)
Cook Inlet	337

Table 8. Polluters reporting the greatest amounts of carcinogens, persistent toxic metals, and reproductive toxins** discharged to Alaska waters (1990-1994).**

Top dischargers of carcinogenic chemicals to Alaska waters (1990-1994).**

Facility	City	Carcinogens** released to waters (lbs.)
Ketchikan Pulp Co.	Ketchikan	239,741
Alaska Pulp Corp.*	Sitka	93,000
Unocal Agricultural Prods.	Kenai	434
Tesoro Alaska Petroleum Co.	Kenai	104

Top dischargers of persistent toxic metals to Alaska waters (1990-1994).

Facility	City	Persistent toxic metals released to waters (lbs.)
Unocal Agricultural Prods.	Kenai	951

Top dischargers of reproductive toxins to Alaska waters (1990-1994).**

Facility	City	Reproductive toxins** released to waters (lbs.)
Tesoro Alaska Petroleum Co.	Kenai	257

* This polluter did not report any discharges to water in 1994. See Table 9 for year to year pollution figures.

** Carcinogens and reproductive toxins defined by the State of California Proposition 65, EPA's TRI Public Data Release and other literature. See full report for references.

Source: Environmental Working Group. Compiled from U.S. Environmental Protection Agency, Toxics Release Inventory 1990-1994.