

This document is useful for information on the data used in the study.

Table S1. Moyenne (min-max) des substances quantifiées dans chaque station pour chaque année de la période étudiée (2007-2022).

Table S2. Fréquence de quantification ($N_{MES.Q}/N_{MES.T}$) des substances quantifiées dans chaque station pour chaque année de la période étudiée (2007-2022).

Table S3. Moyenne (min-max) des substances quantifiées dans chaque station présentes dans les frayères de grande alose et d'esturgeon européen pour chaque année de la période étudiée (d'Avril à Août de 2007-2022).

Table S4. Fréquence de quantification ($N_{MES.Q}/N_{MES.T}$) des substances quantifiées dans chaque station présentes dans les frayères de grande alose et d'esturgeon européen pour chaque année de la période étudiée (d'Avril à Août de 2007-2022).

Table S5. Catégorisation des stades de vie de poisson (see Olker et al., 2022).

Categorisation of stage lifes of fish	Available stage lifes of fish
Embryo*	"Blastula", "Egg", "Embryo", "Gastrula", "Eyed egg or stage, eyed embryo", "Morula"
Larva**	"Larva", "New, newly or recent hatch", "Newborn", "Protolarvae", "Post-hatch", "Yolk sac larvae, sac larvae", "Post-larva", "Alevin", "Sac fry, yolk sac fry", "Fry", "Swim-up"
Juvenile***	"Young", "Juvenile", "Parr", "Immature", "Sexually immature", "Fingerling", "Yearling", "Underyearling", "Smolt", "Young of year", "Pre-smolt", "Pre-, sub-, semi-, near adult, or peripubertal", "Subadult"
Adult****	"Adult", "Mature", "Pre-spawning", "Sexually mature", "Young adult", "Mature reproductive"

*Embryos are considered to be developing in the egg.

**Larvae are considered to be developing outside the egg.

*** Juveniles are considered to have almost finished growing but not yet sexually mature.

****Adults are considered to have finished growing and to have the capacity to reproduce.

Table S6. HC50 obtenues pour chaque substance quantifiée dans l'eau à l'échelle des cours d'eau principaux et à l'échelle des frayères de grande alose et d'esturgeon européen.

Chemicals	CAS	MAIN RIVER SCALE			SPAWNING GROUND SCALE		
		HC50	N _{sp}	N _d	HC50	N _{sp}	N _d
Estrone (Hygiene and Care Products)	53167	7.42e-05	5	65	1.56e-04	3	33
PCDD 48 (Other Industrial Pollutants)	1746016	2.25e-04	4	37	2.25e-04	3	36
Tributylstannane (Other Industrial Pollutants)	688733	8.90e-04	3	11	NA	NA	NA
Cypermethrin (Agrochemicals)	52315078	1.12e-03	17	332	NA	NA	NA
λ -Cyhalothrin (Agrochemicals)	91465086	1.24e-03	8	103	NA	NA	NA
Hydroxyatrazine (Agrochemicals)	2163680	2.25e-03	1	23	2.25e-03	1	23
Hydroxyterbuthylazine (Agrochemicals)	66753079	2.49e-03	1	23	2.49e-03	1	23
Oxadiazon (Agrochemicals)	19666309	3.70e-03	4	10	NA	NA	NA
Desethylterbuthylazine (Agrochemicals)	30125634	6.14e-03	1	21	6.14e-03	1	21
Monomethyldiuron (Agrochemicals)	3567622	6.32e-03	3	16	6.42e+00	1	2
Diuron (Agrochemicals)	330541	6.41e-03	13	72	8.31e-01	9	24
Permethrin (Agrochemicals)	52645531	7.02e-03	17	105	8.81e-03	9	69
Endosulfan (Agrochemicals)	115297	1.01e-02	29	174	NA	NA	NA
Metformin (Hygiene and Care Products)	657249	1.27e-02	1	3	1.27e-02	1	3
p,p'-DDT (Agrochemicals)	50293	1.31e-02	23	91	NA	NA	NA
Hexachlorobenzene (Agrochemicals)	118741	1.63e-02	3	12	NA	NA	NA
Anthracene (Other Industrial Pollutants)	120127	2.11e-02	2	25	NA	NA	NA
4-n-Octylphenol (Other Industrial Pollutants)	1806264	2.24e-02	1	1	NA	NA	NA
Benzo[a]pyrene (Other Industrial Pollutants)	50328	2.49e-02	3	27	1.12e-02	1	13
Decabromodiphenyl ether (Other Industrial Pollutants)	1163195	2.84e-02	2	80	4.11e-02	2	32
Acetochlor (Agrochemicals)	34256821	3.49e-02	3	73	1.80e-02	2	45
Azoxystrobin (Agrochemicals)	131860338	3.95e-02	4	37	5.43e-03	2	5
Propylparaben (Hygiene and Care Products)	94133	4.11e-02	2	3	NA	NA	NA
Fluoranthene (Other Industrial Pollutants)	206440	5.07e-02	5	22	5.46e-02	3	13
Phenol, 4-nonyl-, branched (Other Industrial Pollutants)	84852153	6.90e-02	7	146	4.99e-02	3	54
Diclofenac (Hygiene and Care Products)	15307865	6.99e-02	4	46	3.22e-01	1	1
Copper (Metals)	7440508	7.23e-02	19	154	4.44e-02	6	27
Ziram (Agrochemicals)	137304	7.33e-02	2	18	7.33e-02	1	10
Dinocap (Agrochemicals)	39300453	8.35e-02	1	2	NA	NA	NA
Triclosan (Agrochemicals)	3380345	8.36e-02	5	70	6.80e-02	4	34
Carbofuran (Agrochemicals)	1563662	8.74e-02	22	86	1.64e-01	9	27
Mesotrione (Agrochemicals)	104206828	8.81e-02	2	73	2.56e-02	1	1
Pentachlorophenol (Agrochemicals)	87865	9.07e-02	23	231	9.31e-02	15	107
Lindane (Agrochemicals)	58899	9.19e-02	22	96	5.80e-02	10	46
4-tert-Octylphenol (Other Industrial Pollutants)	140669	9.96e-02	5	100	3.05e-02	2	73
Carbendazim (Agrochemicals)	10605217	1.07e-01	10	93	1.78e-02	5	37
Lead (Metals)	7439921	1.09e-01	5	11	1.36e-02	2	3
Deisopropylatrazine (Agrochemicals)	1007289	1.14e-01	1	25	NA	NA	NA
4-Nonylphenol (Other Industrial Pollutants)	104405	1.21e-01	17	268	6.71e-02	8	72
Ketoprofen (Hygiene and Care Products)	22071154	1.28e-01	2	23	1.86e+01	1	3
Butylparaben (Hygiene and Care Products)	94268	1.32e-01	3	7	NA	NA	NA
Deethylatrazine (Agrochemicals)	6190654	1.35e-01	1	27	1.37e-01	1	25
Piperonyl butoxide (Agrochemicals)	51036	1.42e-01	3	51	NA	NA	NA
3,4-Dichloroaniline (Agrochemicals)	95761	1.59e-01	11	184	NA	NA	NA
Cadmium (Metals)	7440439	1.63e-01	11	62	2.46e-02	7	41
Nicosulfuron (Agrochemicals)	111991094	1.66e-01	2	34	NA	NA	NA
Linuron (Agrochemicals)	330552	1.87e-01	9	84	7.75e+00	3	17

Selenium (Metals)	7782492	2.08e-01	5	13	1.36e-01	4	11
Bisphenol S (Other Industrial Pollutants)	80091	2.10e-01	1	104	2.18e-01	1	98
Uranium (Metals)	7440611	2.10e-01	1	14	2.67e-01	1	5
Didealkylatrazine (Agrochemicals)	3397624	2.16e-01	1	19	NA	NA	NA
Atrazine (Agrochemicals)	1912249	2.25e-01	26	532	2.13e+00	9	221
Silver (Metals)	7440224	2.26e-01	4	85	1.73e+00	2	55
Trifluralin (Agrochemicals)	1582098	2.34e-01	5	26	NA	NA	NA
Propiconazole (Agrochemicals)	60207901	2.71e-01	6	103	NA	NA	NA
PCB 28 (Other Industrial Pollutants)	7012375	2.77e-01	3	19	NA	NA	NA
Dimethoate (Agrochemicals)	60515	2.78e-01	15	122	2.12e-01	6	14
Diocetyl phthalate (Other Industrial Pollutants)	117817	2.87e-01	17	490	1.90e-01	10	242
Pentachlorobenzene (Agrochemicals)	608935	2.88e-01	5	22	NA	NA	NA
Myclobutanil (Agrochemicals)	88671890	3.06e-01	2	20	3.06e-01	2	20
Dibutyl phthalate (Other Industrial Pollutants)	84742	3.16e-01	14	318	5.65e-01	5	108
Ibuprofen (Hygiene and Care Products)	15687271	3.31e-01	7	89	1.44e+00	4	39
Phenanthrene (Other Industrial Pollutants)	85018	3.33e-01	4	22	3.33e-01	3	18
Epoxiconazole (Agrochemicals)	133855988	4.13e-01	2	13	4.13e-01	2	13
Acenaphthene (Other Industrial Pollutants)	83329	4.14e-01	2	19	NA	NA	NA
Pyrimethanil (Agrochemicals)	53112280	4.14e-01	2	20	NA	NA	NA
Sulfamethoxazole (Hygiene and Care Products)	723466	4.19e-01	2	28	2.75e+01	1	2
Bisphenol A (Other Industrial Pollutants)	80057	4.85e-01	16	695	2.25e+00	5	371
Butyl benzyl phthalate (Other Industrial Pollutants)	85687	6.72e-01	6	75	1.66e+00	3	39
Mancozeb (Agrochemicals)	8018017	7.03e-01	10	34	1.10e+00	5	7
Simazine (Agrochemicals)	122349	7.80e-01	8	44	2.15e+00	3	26
Alachlor (Agrochemicals)	15972608	8.31e-01	6	29	1.55e+00	3	17
Methomyl (Agrochemicals)	16752775	8.50e-01	9	73	2.36e+00	6	31
4-Chlorophenol (Other Industrial Pollutants)	106489	8.50e-01	5	20	NA	NA	NA
Tributyl phosphate (Other Industrial Pollutants)	126738	9.38e-01	3	41	9.38e-01	3	39
Pendimethalin (Agrochemicals)	40487421	1.01e+00	3	77	NA	NA	NA
Zinc (Metals)	7440666	1.10e+00	13	109	5.28e-01	5	63
Carbaryl (Agrochemicals)	63252	1.18e+00	36	374	1.53e+00	16	143
Fluorene (Other Industrial Pollutants)	86737	1.21e+00	1	8	NA	NA	NA
Flusilazole (Agrochemicals)	85509199	1.24e+00	2	29	1.24e+00	2	29
1,2,4-Trichlorobenzene (Other Industrial Pollutants)	120821	1.34e+00	4	31	1.34e+00	2	10
2,4-Dichlorophenol (Agrochemicals)	120832	1.35e+00	13	165	2.21e+00	7	90
Triclopyr (Agrochemicals)	55335063	1.79e+00	3	10	1.09e+01	2	4
Carbamazepine (Hygiene and Care Products)	298464	1.95e+00	5	132	1.06e+00	3	21
4-Chloroaniline (Other Industrial Pollutants)	106478	2.05e+00	5	13	NA	NA	NA
Chlortoluron (Agrochemicals)	15545489	2.17e+00	1	7	2.17e+00	1	7
Imidacloprid (Agrochemicals)	138261413	2.21e+00	14	556	3.93e+00	5	80
Perfluorohexanesulfonic acid (Other Industrial Pollutants)	355464	2.37e+00	1	17	2.37e+00	1	17
Fenofibric acid (Hygiene and Care Products)	42017890	2.40e+00	1	28	NA	NA	NA
Tebuconazole (Agrochemicals)	107534963	2.57e+00	5	161	1.04e+00	2	64
Perfluorooctanoic acid (Other Industrial Pollutants)	335671	2.59e+00	8	618	NA	NA	NA
BDE 47 (Other Industrial Pollutants)	5436431	2.89e+00	1	35	NA	NA	NA
Tetraconazole (Agrochemicals)	112281773	2.95e+00	2	26	2.95e+00	2	22
Nickel (Metals)	7440020	3.21e+00	3	17	NA	NA	NA
Chromium (Metals)	7440473	3.36e+00	3	10	2.05e+01	1	2
Cyanazine (Agrochemicals)	21725462	3.38e+00	5	21	NA	NA	NA
Diethyl phthalate (Other Industrial Pollutants)	84662	3.54e+00	6	88	9.87e-01	2	32
1-Chloro-2-nitrobenzene (Other Industrial Pollutants)	88733	3.55e+00	1	4	NA	NA	NA
Diisobutyl phthalate (Other Industrial Pollutants)	84695	4.17e+00	1	19	NA	NA	NA

Roundup (Agrochemicals)	38641940	5.39e+00	35	912	1.15e+01	13	87
Terbutylazine (Agrochemicals)	5915413	5.43e+00	2	5	5.43e+00	2	5
Perfluorohexanoic acid (Other Industrial Pollutants)	307244	6.99e+00	1	75	NA	NA	NA
4-tert-Butylphenol (Other Industrial Pollutants)	98544	7.84e+00	1	2	NA	NA	NA
Bromoxynil (Agrochemicals)	1689845	8.91e+00	1	5	NA	NA	NA
AMPA (Agrochemicals)	1066519	9.51e+00	4	42	6.67e+01	2	11
Bentazon (Agrochemicals)	25057890	1.09e+01	1	4	NA	NA	NA
Tetrachloroethylene (Other Industrial Pollutants)	127184	1.13e+01	5	35	1.13e+01	3	9
2-Chlorophenol (Other Industrial Pollutants)	95578	1.36e+01	2	8	NA	NA	NA
Cymoxanil (Agrochemicals)	57966957	1.69e+01	1	5	NA	NA	NA
Toluene (Other Industrial Pollutants)	108883	1.86e+01	6	63	1.86e+01	4	29
Propargite (Agrochemicals)	2312358	1.90e+01	1	3	NA	NA	NA
2,4-D (Agrochemicals)	94757	2.47e+01	19	109	3.35e+01	8	42
Arsenic (Metals)	7440382	2.50e+01	1	5	2.50e+01	1	5
3-Chloroaniline (Other Industrial Pollutants)	108429	2.55e+01	1	5	NA	NA	NA
Perfluoroheptanoic acid (Other Industrial Pollutants)	375859	2.69e+01	1	26	NA	NA	NA
Acetaminophen (Hygiene and Care Products)	103902	3.15e+01	4	47	2.85e+01	3	45
Ofloxacin (Hygiene and Care Products)	82419361	3.41e+01	1	2	3.41e+01	1	2
Benzene (Other Industrial Pollutants)	71432	3.48e+01	4	13	NA	NA	NA
Chloroform (Other Industrial Pollutants)	67663	4.35e+01	5	46	4.16e+02	4	15
Aminotriazole (Agrochemicals)	61825	4.57e+01	4	8	4.57e+01	1	2
Nitrobenzene (Other Industrial Pollutants)	98953	6.74e+01	3	9	NA	NA	NA
Metalaxyl (Agrochemicals)	57837191	7.60e+01	3	7	NA	NA	NA
Iron (Metals)	7439896	2.41e+02	3	17	2.41e+02	1	5
tert-Butyl methyl ether (Other Industrial Pollutants)	1634044	8.93e+02	1	68	NA	NA	NA
Triphenyltin chloride (Agrochemicals)	639587	1.71e+03	1	1	NA	NA	NA
Dicamba (Agrochemicals)	1918009	NA	NA	NA	1.54e+01	1	18