

IOWA'S WATER

Ambient Monitoring Program

Water Quality Summary 2008*

Water Quality Parameter	Units	Number of Samples	Min Value	Percentiles					Max Value
				10th	25th	50th	75th	90th	
Acetochlor	µg/L	72	<0.05	<0.05	<0.05	<0.05	0.09	0.62	1.4
Alachlor	µg/L	72	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Ammonia (as N)	mg/L	651	<0.05	<0.05	<0.05	<0.05	0.12	0.39	2.6
Atrazine	µg/L	72	<0.05	<0.05	0.09	0.14	0.44	0.87	2.9
Butylate	µg/L	72	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Carbonaceous BOD (5 day)	mg/L	643	<2	<2	<2	<2	<2	4	18
Chloride	mg/L	643	<1	9.4	14	19	24	31	55
Chlorophyll free of pheophytin	µg/L	643	<1	1	3	5	13	35	200
Cyanazine	µg/L	72	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Deethylatrazine	µg/L	72	<0.05	<0.05	<0.05	0.07	0.11	0.17	0.56
Deisopropylatrazine	µg/L	72	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.11
Dimethenamid	µg/L	72	<0.05	<0.05	<0.05	<0.05	<0.05	0.15	0.53
Diss. Orthophosphate (as P)	mg/L	650	<0.02	0.04	0.07	0.11	0.17	0.28	1.1
Dissolved Oxygen	mg/L	641	5.1	7.4	8.1	10.6	12.5	13.6	16.2
<i>E.coli</i> Bacteria	CFU/100 ml	651	<10	10	40	190	810	3,500	140,000
Field pH	pH units	643	7.1	7.7	7.9	8.1	8.2	8.3	8.8
Field Temperature	Celsius	643	0.0	0.1	0.6	12.7	21.1	24.2	29.1
Flow**	CFS	641	2	130	340	890	2,800	8,600	56,300
Metolachlor	µg/L	72	<0.05	<0.05	<0.05	0.06	0.16	0.36	1
Metribuzin	µg/L	72	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Nitrate+Nitrite (as N)	mg/L	651	<0.05	1.9	4.4	6.2	7.8	10	16
Silica	mg/L	643	1.9	9.4	12	14	19	21	28
Simazine	µg/L	72	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Specific Conductance	µmhos/cm	642	120	360	460	570	690	800	1,000
Sulfate	mg/L	643	<1	15	20	28	45	82	150
Total Dissolved Solids	mg/L	643	120	230	270	330	410	490	620
Total Hardness (as CaCO ₃)	mg/L	643	55	180	220	290	360	410	550
Total Kjeldahl Nitrogen	mg/L	651	<0.1	0.4	0.6	0.9	1.4	2.4	19
Total Phosphorus	mg/L	651	0.03	0.09	0.14	0.23	0.41	0.78	7.6
Total Suspended Solids	mg/L	652	<1	4	17	59	160	540	16,000
Trifluralin	µg/L	72	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Turbidity	NTU	643	<1	2.6	8.8	28	81	260	4,100

µg/L – micrograms per liter (parts per billion)
 mg/L – milligrams per liter (parts per million)
 CFU/100 ml – Colony Forming Units per 100 milliliters of water
 CFS – Cubic Feet per Second (ft³/sec)
 µmhos/cm – micromhos per centimeter
 NTU – Nephelometric Turbidity Units
 < – less than detection limit shown
 BOD – Biological Oxygen Demand; Diss. – Dissolved

* Includes monthly samples for all stream sites from January through August and partial stream sites for September.

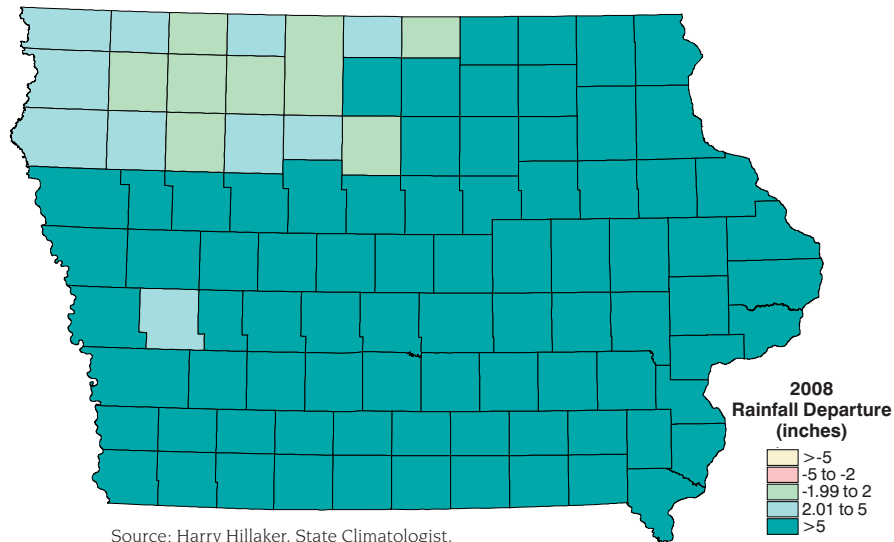
** Provisional data from the U.S. Geological Survey and University of Iowa Hygienic Laboratory

A total of 75 stream sites were sampled monthly.

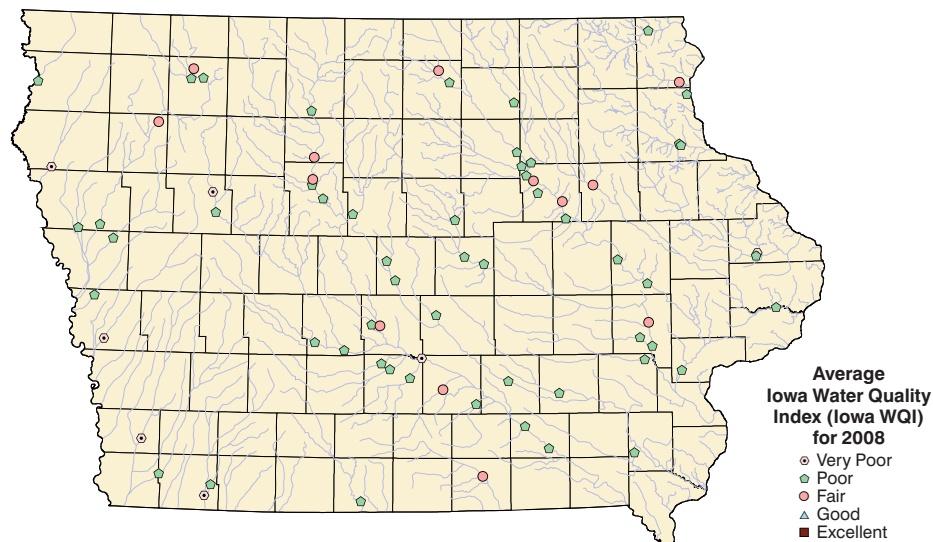
Raw data are available through STORET at wqm.igsb.uiowa.edu/iastoret

Due to budgetary constraints, sampling of monthly sites was discontinued at the beginning of September. A partial list of sites were sampled in September while no sites were sampled thereafter for 2008. This summary includes stream sites monitored as part of the fixed monthly network. Pesticides were analyzed at select sites during the summer months in response to the floods of 2008. Additional stream sites throughout Iowa were also monitored, but are not included in this summary.

Departure from Long-Term Average Annual Rainfall



Source: Harry Hillaker, State Climatologist,
Iowa Department of Agriculture & Land Stewardship.



Iowa Water Quality Index

In 2005, the Iowa Department of Natural Resources developed the Iowa Water Quality Index (WQI), a standardized method for comparing the water quality of various water bodies across the state. The Iowa WQI rates water quality using the following nine parameters: biological oxygen demand, dissolved oxygen, *E.coli* bacteria, nitrate+nitrite as nitrogen, total detected pesticides, pH, total phosphorus, total dissolved solids, and total suspended solids. If a result is missing for any of these parameters, the IWQI assigns a default value for the missing parameters. Values range from 0 – 100 and streams are classified as **very poor** (0 – 25), **poor** (25.1 – 50), **fair** (50.1 – 70), **good** (70.1 – 90), and **excellent** (90.1 – 100). For 2008, 0% of the monthly stream WQI values were in the **excellent** category, 4% were **good**, 32% were **fair**, 32% were **poor**, and 31% were **very poor**. (See map above for average WQI value for each site.) Water quality is affected by rainfall. For 2008, on average, rainfall was 9.5 inches above normal per county (see map above).



Prepared by
Iowa Department of Natural Resources, Geological and Water Survey
109 Trowbridge Hall, Iowa City, IA 52242-1319