

IOWA'S WATER

Ambient Monitoring Program

Water Quality Summary 2009*

Water Quality Parameter	Units	Number of Samples	Min Value	Percentiles					Max Value
				10th	25th	50th	75th	90th	
Ammonia (as N)	mg/L	675	<0.05	<0.05	<0.05	<0.05	<0.05	0.06	2.3
Carbonaceous BOD (5 day)	mg/L	450	<2	<2	<2	<2	<2	3	9
Chloride	mg/L	799	5	10	14	19	24	31	74
Chlorophyll free of pheophytin	µg/L	675	<1	3	5	9	25	75	290
Diss. Orthophosphate (as P)	mg/L	574	<0.1	<0.1	<0.1	<0.1	0.14	0.21	1.7
Dissolved Oxygen	mg/L	799	5.4	8.3	9.2	10.6	12.6	13.8	17.5
<i>E. coli</i> Bacteria	MPN/100 ml	675	<10	30	75	210	590	1,700	240,000
Field pH	pH units	792	7.0	7.9	8.0	8.2	8.4	8.5	10.9
Field Temperature	Celsius	799	0.0	0.2	4.6	12.4	18.8	22.8	28.8
Flow**	CFS	479	9	72	180	460	1,300	3,700	30,000
Nitrate+Nitrite (as N)	mg/L	675	<0.1	1.2	3.8	6.0	7.8	9.5	13
Specific Conductance	µmhos/cm	116	250	332	486	651	779	930	1,170
Sulfate	mg/L	574	9.6	18	22	30	51	99	285
Total Dissolved Solids	mg/L	675	10	260	290	340	420	480	890
Total Hardness (as CaCO ₃)	mg/L	450	100	210	240	300	360	410	530
Total Kjeldahl Nitrogen	mg/L	675	<0.1	0.4	0.5	0.7	1.0	1.3	5.9
Total Phosphorus	mg/L	675	<0.05	0.08	0.13	0.18	0.27	0.38	1.8
Total Suspended Solids	mg/L	676	<1	10	24	50	110	210	2,300
Turbidity	NTU	566	<1	3.3	7.0	18	39	78	1,700

µg/L – micrograms per liter (parts per billion)
 mg/L – milligrams per liter (parts per million)
 MPN/100 ml – Most Probable Number/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

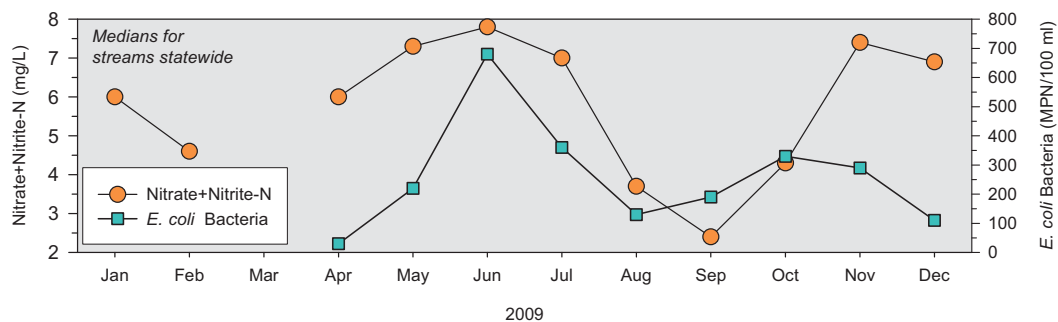
* Includes monthly samples for partial stream sites for January and February.

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

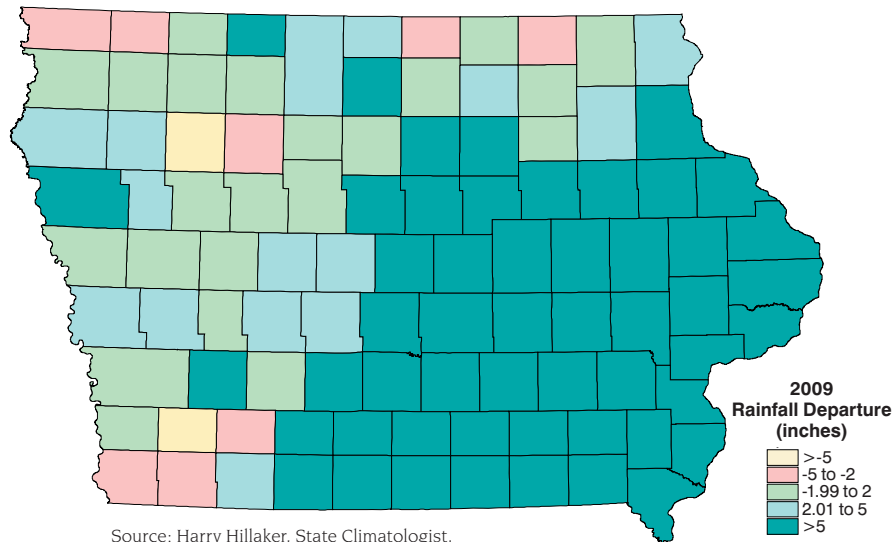
A total of 75 stream sites were sampled monthly.

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

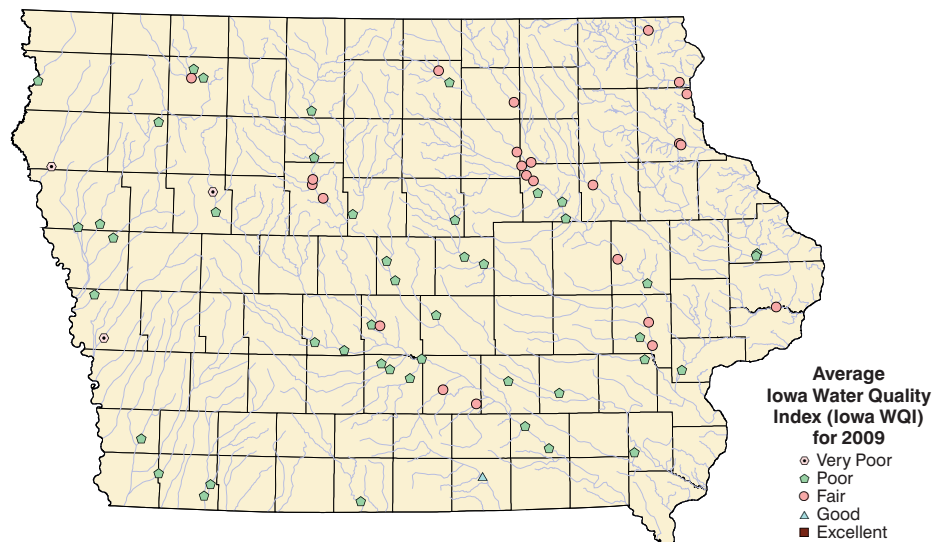
Due to budget constraints, sampling of monthly stream sites for a partial list of parameters and a reduced number of sites occurred for January and February 2009, while no sampling occurred in March 2009. Sampling of the 75 monthly stream sites resumed in April 2009. As of April 2009, monitoring for specific conductance was discontinued.



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 Iowa WQI 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 2009, 0% of the monthly stream WQI values were in the **excellent** category, 6% were **good**, 43% were **fair**, 36% were **poor**, and 15% were **very poor**. (See map above for average WQI rank for each site.) Water quality is affected by rainfall. For 2009, on average, rainfall was **5.7** inches above normal per county (see map above).



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