

# IOWA'S WATER

## Ambient Monitoring Program

### Water Quality Summary 2000-2006\*

Water Quality Parameter	Units	Number of Samples	Min Value	Percentiles					Max Value
				10th	25th	50th	75th	90th	
Acetochlor	µg/L	7,054	<0.1	<0.1	<0.1	<0.1	<0.1	0.16	21
Alachlor	µg/L	7,054	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	8.6
Ammonia (as N)	mg/L	7,320	<0.1	<0.1	<0.1	<0.1	<0.1	0.20	5.7
Atrazine	µg/L	7,062	<0.1	<0.1	<0.1	<0.1	0.23	0.74	53
Butylate	µg/L	6,973	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Carbonaceous BOD (5 day)	mg/L	6,813	<2	<2	<2	<2	3	5	35
Chloride	mg/L	6,087	2.2	12	17	23	31	42	170
Chlorophyll a <sup>†</sup>	µg/L	5,049	<1	2	5	13	43	120	640
Chlorophyll b <sup>†</sup>	µg/L	5,049	<1	<1	<1	<1	<1	2	70
Chlorophyll c <sup>†</sup>	µg/L	5,049	<1	<1	<1	<1	2	8	66
Chlorophyll free of pheophytin	µg/L	1,838	<1	3	6	15	41	110	870
Corrected Chlorophyll a <sup>†</sup>	µg/L	5,046	<1	<1	3	10	36	110	620
Cyanazine	µg/L	6,973	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	1.3
Deethylatrazine	µg/L	6,973	<0.1	<0.1	<0.1	<0.1	<0.1	0.17	2.6
Deisopropylatrazine	µg/L	6,973	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.57
Dimethenamid	µg/L	6,201	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	4.4
Diss. Orthophosphate (as P)	mg/L	7,208	<0.1	<0.1	<0.1	<0.1	0.16	0.29	5.1
Dissolved Oxygen	mg/L	7,238	0.7	7.7	8.7	10.5	13.0	14.5	21
<i>E. coli</i> Bacteria	CFU/100 ml	7,379	<10	<10	20	100	380	2,100	960,000
Field pH	pH units	6,884	5.0	7.8	8.0	8.3	8.4	8.6	10.4
Field Temperature	Celsius	7,283	0.0	0.2	2.6	12.9	20.7	24.4	34.3
Flow**	CFS	6,056	<1	15	66	260	1,000	2,900	78,500
Metolachlor	µg/L	7,054	<0.1	<0.1	<0.1	<0.1	<0.1	0.3	36
Metribuzin	µg/L	6,973	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	1.5
Nitrate+Nitrite (as N)	mg/L	7,322	<0.1	0.7	2.8	5.5	8.4	12	35
Pheophytin <sup>†</sup>	µg/L	5,049	<1	<1	1	3	9	19	204
Silica	mg/L	6,881	<1	4.4	8.3	12	16	20	190
Simazine	µg/L	6,695	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	20
Specific Conductance	µmhos/cm	7,046	120	420	510	620	720	830	1,700
Sulfate	mg/L	5,826	2.8	21	27	38	62	99	400
Total Dissolved Solids	mg/L	6,927	25	250	300	360	440	510	1,640
Total Hardness (as CaCO <sub>3</sub> )	mg/L	6,777	18	200	240	300	360	410	820
Total Kjeldahl Nitrogen	mg/L	6,958	<0.1	0.3	0.5	0.8	1.3	2.0	28
Total Phosphorus	mg/L	7,319	<0.1	<0.1	0.10	0.20	0.35	0.60	26
Total Suspended Solids	mg/L	8,348	<1	3	7	23	67	160	17,000
Trifluralin	µg/L	6,973	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.35
Turbidity	NTU	7,285	<1	2.7	5.8	17	42	100	8,500

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 (ft<sup>3</sup>/sec)  
 µmhos/cm – micromhos per centimeter  
 NTU – Nephelometric Turbidity Units  
 < – less than detection limit shown  
 BOD – Biological Oxygen Demand  
 Diss. – Dissolved

Raw data are available through STORET at [wqm.igsb.uiowa.edu/iastoret](http://wqm.igsb.uiowa.edu/iastoret)

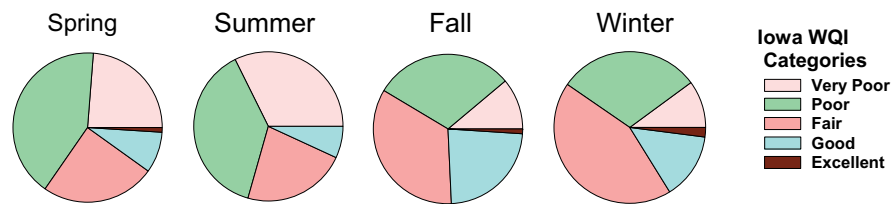
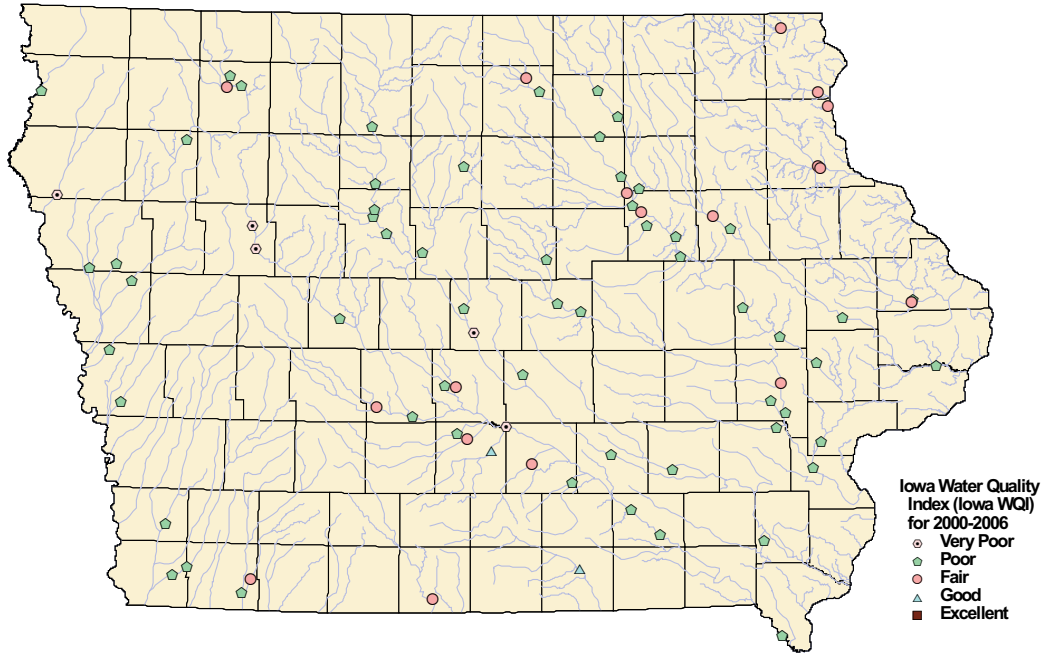
\* Includes monthly and event samples for all stream sites  
 \*\* Provisional data from the U.S. Geological Survey and University of Iowa Hygienic Laboratory  
 † Sampling discontinued in March 2005

Less than values have been standardized to account for decreases in detection limits through time.

A total of 80 stream sites were sampled monthly from 2000-2002. A total of 84 stream sites were sampled monthly from 2003-2006. Number of sites sampled from Aug-Dec 2006 varied from 75 to 83.

## Iowa Water Quality Index for 2000-2006

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. 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 2000-2006, 1% of the streams had an Iowa WQI in the **excellent** category, 13% were **good**, 31% were **fair**, 35% were **poor**, and 20% were **very poor**. (See map below.)



Streams in Iowa show seasonal Iowa WQI patterns. For the majority of streams, water quality is **poor** during the spring, followed by a decline in water quality during the summer months when the number of streams in the **poor** category remains relatively the same, however the number of streams in the **very poor** category increases. Water quality is at its best during the fall and winter months, with nearly 59% of the streams classified in the **fair**, **good**, and **excellent** categories during both the fall and winter months. (See pie charts above.)



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