IOWA'S WATER

Ambient Monitoring Program

Water Quality Summary 2000-2004*

Water Quality Parameter	Units	Number of Samples	Min Value	Percentiles					Max Value
				10th	25th	50th	75th	90th	
Acetochlor	µg/L	5,130	<0.1	<0.1	<0.1	<0.1	<0.1	0.19	21
Alachlor	µg/L	5,130	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	8.6
Ammonia (as N)	mg/L	5,253	<0.1	<0.1	<0.1	<0.1	<0.1	0.2	5.7
Atrazine	µg/L	5,138	<0.1	<0.1	<0.1	0.10	0.28	0.95	53
Butylate	µg/L	5,049	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Carbonaceous BOD (5 day)	mg/L	4,796	<2	<2	<2	<2	3	5	35
Chloride	mg/L	4,039	2.2	12	16	22	31	43	170
Chlorophyll a	µg/L	4,883	<1	2	5	14	44	126	640
Chlorophyll b	µg/L	4,883	<1	<1	<1	<1	<1	2	70
Chlorophyll c	µg/L	4,883	<1	<1	<1	<1	2	9	66
Corrected Chlorophyll a	µg/L	4,880	<1	<1	3	11	37	110	620
Cyanazine	µg/L	5,049	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	1.3
Deethylatrazine	µg/L	5,049	<0.1	<0.1	<0.1	<0.1	0.11	0.20	2.6
Deisopropylatrazine	µg/L	5,049	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.57
Dimethenamid	µg/L	4,277	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	4.4
Diss. Orthophosphate (as P)	mg/L	5,140	<0.1	<0.1	<0.1	<0.1	0.17	0.3	5.1
Dissolved Oxygen	mg/L	5,178	0.7	7.7	8.7	10.4	12.7	14.4	21
E.coli Bacteria	CFU/100 ml	5,085	<10	<10	20	100	400	2,300	960,000
Enterococci Bacteria[†]	CFU/100 ml	4,587	<10	<10	30	120	400	2,700	390,000
Fecal Coliform Bacteria[†]	CFU/100 ml	4,945	<10	<10	<10	130	610	3,800	920,000
Field pH	pH units	4,846	5.0	7.8	8.0	8.2	8.4	8.6	10.4
Field Temperature	Celsius	5,221	0.0	0.2	2.8	12.9	20.4	24.1	34.3
Flow**	CFS	4,424	<0.1	13	59	250	1,000	2,800	78,500
Metolachlor	µg/L	5,130	<0.1	<0.1	<0.1	<0.1	0.12	0.36	36
Metribuzin	µg/L	5,049	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	1.5
Nitrate+Nitrite (as N)	mg/L	5,253	<0.1	0.7	2.6	5.2	8.1	11.0	35.0
Pheophytin	µg/L	4,883	<1	<1	2	3	9	20	204
Silica	mg/L	4,887	<1	4.4	7.9	12.0	16.0	20.0	120
Simazine	µg/L	4,771	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.56
Specific Conductance	µmhos/cm	4,980	120	420	510	610	720	840	1,700
Sulfate	mg/L	3,829	2.8	21	27	39	63	100	400
Total Dissolved Solids	mg/L	4,887	25	250	300	360	440	510	1,640
Total Hardness (as CaCO3)	mg/L	4,780	64	190	240	300	350	410	820
Total Kjeldahl Nitrogen	mg/L	4,892	<0.1	0.3	0.5	0.8	1.4	2.2	28
Total Phosphorus	mg/L	5,250	<0.1	<0.1	0.1	0.20	0.4	0.7	26
Total Suspended Solids	mg/L	5,011	<1	3	8	30	82	200	17,000
Trifluralin	µg/L	5,049	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.35
Turbidity	NTU	5,240	<1	2.6	5.4	17.0	45.0	120	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 (ft³/sec)

µmhos/cm – micromhos per centimeter

NTU – Nephelometric Turbidity Units

< – less than detection limit shown
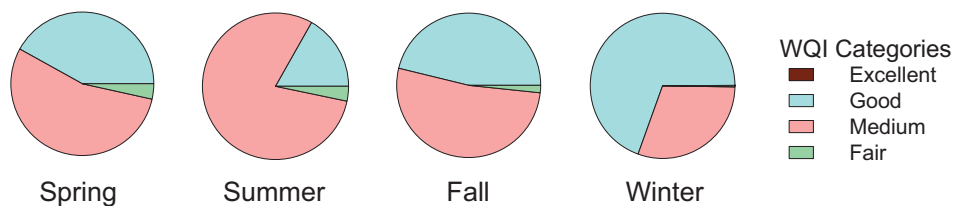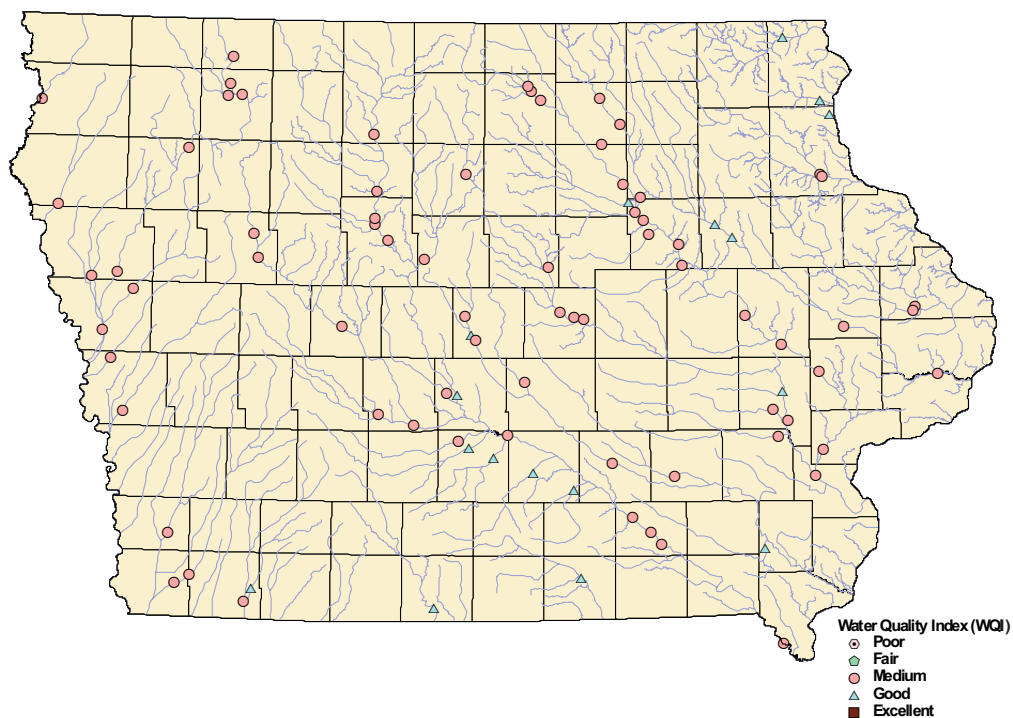
* Includes monthly and event samples for all stream sites.

** Provisional data from the USGS

† Sampling discontinued in August 2004

A total of 80 stream sites were sampled monthly from 2000-2002. A total of 85 stream sites were sampled monthly from 2003-2004.

Water Quality Index for 2000-2004

In 1970, the National Sanitation Foundation developed the Water Quality Index (WQI), a standardized method for comparing the water quality of various water bodies. In Iowa, the WQI is calculated by using eight common water quality parameters (dissolved oxygen, fecal coliform bacteria, pH, 5-day BOD, total phosphorus, nitrate-nitrogen, turbidity, and total dissolved solids). Values range from 0 – 100 and streams are classified as **poor** (0-25), **fair** (25-50), **medium** (50-70), **good** (70-90), or **excellent** (90-100). WQIs were calculated on the streams monitored monthly as part of Iowa's Ambient Water Monitoring Program. For 2000-2004, 81% of the streams had a WQI in the **medium** category while the remaining 19% were in the **good** category. (See map below.)

Water Quality Index (WQI)
- ⊙ Poor
- ⬠ Fair
- ◯ Medium
- △ Good
- ◼ Excellent

Spring   Summer   Fall   Winter

WQI Categories
- Excellent
- Good
- Medium
- Fair

Streams in Iowa show seasonal WQI patterns. For the majority of streams, water quality is **medium** during the spring, followed by a decline in water quality during the summer months when even more streams fall from the **good** category into the **medium** and **fair** categories. During the fall, just over half the streams exhibit medium water quality while the rest have **good** water quality. Water quality is at its best during the winter months, with nearly 70% of the streams classified as **good**. (See pie charts above.)