

**Nebraska Stream Classifications For The 2004-2005 Stream Biological Monitoring Program**

**Project Report**



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## **Introduction**

The stream biological monitoring program uses a unique probability-based (randomized) sample design that allows water quality status and trend assessments to be made with a known level of statistical confidence. This program was first initiated in 1997 using R-EMAP sampling methods and continued through the present biological monitoring program. Monitoring is conducted yearly for fish, aquatic macroinvertebrates, physical habitat and water chemistries at about 40 wadeable stream sites.

The primary objective of the stream biological monitoring program is to collect information necessary to characterize general stream water quality and make beneficial use support assessments. The secondary objective is to add more data for the further development and calibration of ecoregion metrics and stream types.

## **Methods**

Sampling protocols used during the stream biological monitoring program were those established by the EPA for the R-EMAP projects (USEPA 1994; Kaufman et al., 1999). These protocols were developed for use in wadeable streams. Survey crews consisted of five to seven persons, depending on the size of the streams. Further details of methods are discussed in the Nebraska Stream Classification report (Bazata, 2005).

## **Sampling sites**

The river basins sampled for this report were the Lower Platte and Nemaha in 2004 and the Elkhorn and Missouri River Tributaries in 2005 (Figure 1). The random list of sites was generated at the EPA's research lab in Corvallis, Oregon. The sites requirements for each selection include: 1) a perennial stream; intermittent stream sites and irrigation canals were rejected, 2) a reconnaissance visit to show the stream to have aquatic macroinvertebrates and fish, 3) the site was relatively accessible for sampling, and 4) the landowner's permission to sample. Several potential sites that normally had water in previous years were dry during 2004 and 2005 due to the drought. The lists of sampling sites and stream characteristics for each site are shown in Table 1 and 2.

## **Water chemistries and stream discharge measurements**

Field water quality measurements were collected prior to disturbance of the area by the sampling team. Water quality parameters measured at the site included: temperature, pH, dissolved oxygen, turbidity, conductivity, and stream discharge. These measurements were taken with a Hydro Lab Quanta meter or a Eureka multi-parameter meter. Stream discharge was calculated from measurements of depth and velocity with a wading rod and Marsh-McBirney flow meter at the best possible transect within the study reach.

Other water chemistry samples were collected by John and Aris Holz, School of Natural History, UNL twice or three times during the collection timeframe to get a seasonal differential (i.e., summer and fall). These water chemistry samples are not covered in this report.

## **Physical and habitat measurements**

The average width of the stream was determined and was used to determine the total length of the study reach using the equation of 40 times the average width. The length of stream sampled ranged from 150 to 300 m. Physical habitat was measured in the sample reach at 11 evenly spaced cross-sectional transects and at 100 points along the thalweg following the EPA EMAP protocol (Kaufmann and Robison 1998). At each transect, depth, substrate size class, and substrate embeddedness were measured at five equally spaced points between the wetted edges

of the stream. At both sides of the stream, the angle of the stream bank relative to the water surface, distance from water surface to bankfull height, stream incision depth, bankfull width and amount of overhang by undercut banks were measured. Canopy cover was measured at the sides and centers of transects. The amounts of fish cover in nine categories (filamentous algae, macrophytes, woody debris, brush, overhanging vegetation, undercut banks, boulders, artificial structures) were visually estimated. Riparian vegetation cover was assessed by visually estimating the amount of canopy (> 5 m high), understory (0.5-5.0 m), and ground cover (<0.5 m) on both banks at transect locations. The presence or absence and proximity of human disturbance (row crops, grazing, building, road, etc.) was visually assessed at each transect. Thalweg measurements included depth, presence of fine substrate (< 16 mm diameter), habitat unit type (pool, riffle, run, dry channel), and presence of side channels and backwaters. A visual Rapid Habitat Assessment (Lazorchak et al. 1998) based on 12 habitat parameters (instream fish cover, epifaunal substrate, pool substrate characterization, pool variability, channel alteration, sediment deposition, channel flow status, bank condition, bank vegetative protection, grazing or disruptive pressure, and riparian vegetated zone width) was also completed for each sampled reach. Water surface slope and azimuth were also measured.

### **Fish collections**

Fish samples were collected at each sampling location. Sampling was dependent on stream size and condition. A backpack shocker was used for small and medium sized streams (flows less than 10 cfs, Table 3). Larger, deeper streams were electroshocked utilizing a portable generator transported in a small boat. Block nets were used downstream on smaller streams when fish collection was hampered by turbidity or other factors. Stunned fish were netted and placed in buckets containing ambient water for holding and recovery. The length of stream sampled was by calculated to be 40 times the width of the stream as determined above under physical and habitat measurements and ranged from 150 to 300 m. Seining was conducted with a 30-foot long ¼ inch mesh bag seine. The number of seining attempts was determined by the complexity and size of the stream. Both methods were used to cover the biases of the other sampling method has toward particular sizes and species of fish. Large fish were identified in the field and released unless they were to be used for fish tissue samples. Small fish were mainly identified in the field, however, small hard to identify specimens were preserved for identification in the laboratory. A subsample of these specimens were sent to Dr. Mark Eberle at the Sternberg Museum of Natural History, Fort Hays University, Hays, Kansas for confirmation or identification. Total numbers were derived for all samples.

### **Macroinvertebrate collections**

Aquatic macroinvertebrates were collected at each site using a number of sampling methods and were combined for assessment. The different sampling methods were done to account for the different types of communities and habitats found in each stream. Overhanging vegetation samples were collected from the stream edge in the grasses bent into the water. The samples were collected by sweeping a D-net (500µm Nitex net, 18 inch wide base) in an upward vertical motion through the overhanging vegetation. The surface area sampled was approximately 1.67 m<sup>2</sup>. If habitat was limited, fewer sweeps were made, but was noted on the field sheet. Pool substrate was sampled by dragging a D-net through the substrate in a pool area with a silt bottom for a length of one foot and one inch deep. The total sample consisted of 6 drags and had a surface area of 1.67 m<sup>2</sup>. Riffles were sampled using a Surber Stream Bottom Sampler (12 inch X 12 inch opening). A riffle area was defined as an area of relatively shallow water with an accelerated velocity where the water surface is rough or broken. The riffle substrate consisted of gravel or larger stones. Six samples were taken from each riffle and were made by agitating the contents of the substrate to allow the contained and attached organisms to be washed



downstream into the Surber net (500 µm Nitex). Surface area was 0.56 m<sup>2</sup>. Qualitative samples were taken to include all other habitats not collected. Habitats included woody debris, log jams, larger rocks, submergent and emergent vegetation. An effort of 15 to 20 minutes for one person was made to sample these additional habitats.

In the field individual samples were placed in a No. 30 mesh sieve or wash bucket (595 µm openings) and washed to remove mud and small debris. Large debris was also removed by hand. Collections from each habitat were placed in plastic jars and preserved in 70 percent ethanol. In the laboratory, samples were rinsed in water and represerved in 70% ethanol. The samples were sent to Ripple Environmental, Inc. for sorting and identification.

Identifications of all organisms were made to the lowest possible taxon using taxonomic keys and literature. Organisms were enumerated per taxa for each sample. Subsampling was not required for most samples but was conducted when taxa numbers were high. This procedure was done by recovering a percent volume of the sample with use of a grid placed underneath the sorting pan. The unanalyzed portion of the subsample was quickly scanned for unusual or unexpected organisms. The remaining portion of the sample was represerved and retained. Final counts were extrapolated to account for 100 percent of the sample.

Several representatives of each taxon of macroinvertebrates were saved for a project reference collection. The specimens were placed in vials, preserved in 70% ethanol, labeled and saved for future reference and comparisons.

All macroinvertebrates were brought to the same taxonomic level for assessment purposes of the project. If an identification made to a lower than required level, the identification was changed to the next level. For example, if an invertebrate was identified to the species level and the other identifications were to the genus level as needed for analysis, the identification was changed to the genus level. However, the species level was recorded in EDAS and STORET.

## **Metrics**

The measurement of overall fish, macroinvertebrate, and habitat community condition present in this report were determined using the Index of Biotic Integrity (IBI), the Invertebrate Community Index (ICI), and Nebraska Habitat Index (NHI). The indices used for the fish, macroinvertebrates, and habitats are modifications of the Index of Biotic Integrity (IBI) as developed by Karr (1981) and modified by Fausch et al. (1984), Karr et al. (1986), Ohio EPA (1987), Plafkin et al. (1989), Barber et al. (1999). The fish IBI metrics used in this study were developed by the EPA Research Laboratory in Corvallis, Oregon and were selected from a list of metrics to best show responsiveness to disturbance, either natural or anthropogenic. The macroinvertebrate ICI consists of four community metrics and were modifications of the invertebrate indices of the Ohio EPA (1987), Heger and Hayslip (2000), and Wilton (2004). The habitat NHI consisted of ten metrics and were selected from a list of metrics to best portray an interaction of habitat and biotic ranges.

The metrics used to evaluate the fish, macroinvertebrate and habitat are discussed in the Nebraska Stream Classification report (Bazata, 2005). In general, relative abundances, rather than absolute abundances, were used for these metrics because the relative contribution of individuals to the total fauna or habitat is more informative than abundance data on populations without knowledge of the interaction among taxa and habitats. (Plafkin et al. 1989, Barbour et al. 1999). The premise is that a healthy and stable assemblage will be relatively consistent in its proportional representation, though individual abundances may vary in magnitude.

### **Fish Index of Biotic Integrity Metrics (IBI)**

The follow metrics are used for the Fish Index of Biotic Integrity (IBI8):

- Metric 1. Total number of native species (numnatsp).
- Metric 2. Total number of native families (numnatfm).
- Metric 3. Total number of sensitive species (nssen).
- Metric 4. Proportion of tolerant species in sample (ptole).
- Metric 5. Total number of benthic species (nsnbenth).
- Metric 6. Total number of long-lived species (nslunk).
- Metric 7. Proportion of alien species in the sample (pintro).
- Metric 8. Proportion of sample carnivore species (pncarn).

### **Invertebrate Community Index Metrics (ICI)**

The following metrics are used for the Invertebrate Community Index (Bugsc):

- Metric 1. Total number of invertebrate taxa (TotalTax).
- Metric 2. EPT taxa richness (EPTTax).
- Metric 3. Modified Hilsenhoff Biotic Index (HBI).
- Metric 4. Percent contribution of dominant taxon (Domn01Pct).

### **Nebraska Habitat Index Metrics (NHI)**

The following metrics are used for the Habitat Index (Habscore5):

- Metric 1. Incision/width ratio (Inciswid).
- Metric 2. Percent sand substrate (Pct\_sa\_).
- Metric 3. Percent rowcrop (w1h\_crop).
- Metric 4. Percent riffle (Pct\_ri).
- Metric 5. Percent undercut banks (xfc\_ucb).
- Metric 6. Percent overhanging vegetation (pfc\_ohc).
- Metric 7. Percent silt substrate (Pct\_fn).
- Metric 8. Middle Canopy layer along stream bank (xcm).
- Metric 9. Percent pools (Pct\_pl).
- Metric 10. Percent barren banks (xgb).

In order to compare the 2004-2005 sample sites with previous data, a set of reference scores for each metric and total index score and ecoregion and stream type was calculated in Nebraska Stream Classification report (Bazata 2005). The ratio between the score for the test station and the score for the reference condition provides a percent comparability measure for each station (Figure 2). The station of interest is then classified on the basis of its similarity to expected conditions (reference conditions), and it's apparent potential to support an acceptable level of biological health. The sampling sites and reference condition sites were sorted by ecoregion and stream type.

### **Data Analysis and Results**

There were a total of 79 surveyed during the 2004-2005 Stream Biological Monitoring Project (Table 1). Sites were located in the eastern third of the state and in two ecoregions and four stream basins, although the majority of sites were in the Western Corn Belt Plains (47)(Tables 1 and 2, Figure 1). Most streams surveyed (84%) were first through third order streams. All sites were warm water streams (Table 3).

## Fish

A total of 51 fish species were collected during the 2004-2005 sampling (Table 4). Fish species collected within each family consisted of 2 Lepisosteidae (Gar), 1 Clupeidae (Herrings), 2 Esocidae (Pikes), 22 Cyprinidae (Minnow), 4 Catostomidae (Sucker), 5 Ictaluridae (Catfish), 1 Poeciliidae (Livebearers), 1 Moronidae (Temperate Bass), 7 Centrarchidae (Sunfish), 5 Percidae (Perch), and 1 Sciaenidae (Drum) (Table 5). Four state sensitive species were collected: blacknose dace, longnose dace, shoal chub, and Iowa darter. The most commonly collected fish were all cyprinids and consisted of the red shiner (26%), sand shiner (23%), fathead minnow (12%), bigmouth shiner (11%), and creek chub (5%). The other 46 species were collected in less than 23 percent of the time from the sampling locations.

Species richness per collection ranged from 1 to 25 (Table 6, 7, and 8). The highest number of species richness was found at the Elkhorn River south of Stanton in Stanton County. The lowest number of fish was collected at the West Fork of the Maple Creek near Clarkson in Colfax County and Long Creek near Fort Calhoun in Washington County. The West Fork of the Maple Creek was pooled at the time of collection, so fish swimming between pools was minimal. The Long Creek site had a drop structure near the collection site preventing all fish migration. Numerous small dams were also located on Long Creek below the collection site. These dams also preventing fish migration.

IBI Scores ranged from 19 to 92 (Table 6). The average IBI score for the collection sites was 49.6 and was slightly lower than the 1997-2001 REMAP study averages where the IBI scores were 56.9 for perennial streams and 61.1 for reference streams.

## Macroinvertebrates

All ICI scoring are based on combined macroinvertebrate sampling. Because the streams of the state are not uniform, in regards to substrate and habitat types, different types of sampling methods at different habitat types (overhanging vegetation, pool and bottom substrates, riffles, and qualitative) were combined by station, and then evaluated. The taxa list from each station and from each sampling method was combined to form a total invertebrate list. A total of 264 taxa were collected from 2004-2005 (Table 9). Species richness per collection varied from 60 in the Nemaha Basin at Four Mile Creek near Humboldt in Richardson County to only one collected in the Elkhorn River near Inman in Holt County and six collected in the Middle Branch of the Big Nemaha River near Adams in Gage County and Hooper Creek near Palmyra in Otoe County (Table 10). The very low taxa numbers at the last three sites were unusual and could be attributed to very low water due to drought conditions.

The most abundant taxa collected from the four basins were the fingernail clams, *Sphaerium*, and the black flies (Simuliidae). Both of these organisms made up 60% of all samples combined. Other numerous organisms, although not as abundant (approximately 10% combined), were the caddis fly, *Cheumatopsyche*, the snail, *Physa*, the amphipod, *Hyalella azteca*, the midges, *Tanytarsus* and *Rheotanytarsus*, and the elmid beetle, *Dubiraphia*. Chironomidae (midges), Baetidae (one family of mayflies or blue winged olives), Physidae (left handed snails), Elmidae (riffle beetles), and Simuliidae (black flies) were the most abundant families collected.

ICI scores ranged from 4 to 24 (Tables 11 and 12). The average ICI score for the four basins was 14. The highest ICI score (24) was calculated for Whiskey Run in the Nemaha Basin near Humboldt in Richardson County. The lowest ICI scores (4) were found at Union Creek near Madison in Madison County, Shell Creek near Lindsay in Platte County, and Winnebago Creek near Rulo in Richardson County. Average ICI scores from the 1997-2004 R-EMAP statewide study were 16.5 for perennial streams and 20.8 for reference streams.

## **Physical Habitat**

The Nebraska Habitat Index (NHI) scores ranged from 22 to 46 (Table 13). The median score was 34, which is higher than the median score of 30 found in the Western Cornbelt Ecoregion for the 1997-2001 statewide stream survey report (Bazata 2005). Three sites had the highest scores: Pawnee Creek near South Bend in Cass County, Bazile Creek near Niobrara in Knox County, and Hoosier Creek near Palmyra in Otoe County. Wahoo Creek near Ashland in Saunders County had the lowest habitat score of 22 (Tables 14 and 15). Four of the ten metrics that appeared to have the strongest influence on the Habit Index score with this survey's data include: incision/width ratio, percent overhanging vegetation, middle canopy layer along the stream bank, and percent barren banks. The 1997-2001 R-EMAP studies averaged a NHI score of 32 for perennial sites and 46 for reference streams.

## **Field Parameters/Chemistries**

Data from six field variables were collected from 79 sites. Summary statistics from the field parameters are shown in Tables 16 and 17. Data interpretation of these results reflects a single collection in time. As such, water quality standards cannot be strictly applied to these samples, because only a single sample was taken and not a multiple set over time.

For temperature, a single value from a stream is of limited value because temperature is a temporal variable and dependent on climate conditions. Temperature ranged from 14.7° C to 31.8° C during the 2004-2005 sampling, but did not get above the standard limit of 32.0° C.

Dissolved oxygen (DO) concentrations are generally related to turbulence and temperature. Decreased DO levels are usually associated with inputs of organic matter, sedimentation, as well as increased temperature and reduced stream flow (Herger and Hay slip 2000). As with temperature, conclusions must be drawn with caution, as DO is temporally variable and a single measurement is of questionable value for characterizing stream condition. DO ranged from 1.66 mg/l to 16.37 mg/l. The water quality standard of 5 mg/l for a 1-day minimum was below standards at 5 sites: Bell Creek near Tekamah in Burt County, Union Creek near Madison in Madison County, Battle Creek near Battle Creek in Madison County, Wahoo Creek near Weston in Saunders County, and South Branch Papillion Creek near Gretna in Sarpy County.

The pH of the four water basins ranged from 5.39 to 9.01. Only the North Fork Big Nemaha River near Tecumseh in Johnson County was below the standard of 6.5 to 9.

The conductivity of the samples varied from 6.59  $\mu\text{mho/cm}$  to 1550  $\mu\text{mho/cm}$ . No collection sites were measured above the state standard of 2000  $\mu\text{mho/cm}$ .

Turbidities ranged from 4.5 NTU to 230 NTU with an average of 49 NTU. The majority (73%) of the samples were below 70 NTU. Nebraska does not have a turbidity standard.

Stream discharge varied between 0.09 cfs to 255 cfs. Stream discharge during 2004 through 2005 was impeded by drought conditions and the flow for all of the streams was affected by the lack of rainfall. The Nemaha and upper Elkhorn Basins were most affected with several of the streams having greatly reduced flows during collection. The low flows most likely affected the fauna of the streams because the instream habitats were greatly reduced.

## **Stream Classification**

The data from the 79 stations were grouped into their respective data type (habitat, fish or macroinvertebrate), ecoregion, stream size, cold-water stream, and warm water stream. Stream size was divided into the groupings of small (<1 cfs), medium (1-10 cfs), large (10-100 cfs) and river (>100 cfs) (Table 3). Since previous studies (Bazata 2005) have shown that metric values and stream ratings differ between ecoregions, it was necessary to have the classification scheme

reflect this difference between ecoregions. Summary statistics (i.e., mean, median, 25<sup>th</sup> percentile, 75<sup>th</sup> percentile, and maximum) within each group were calculated for the NHI habitat scores, IBI fish score, ICI macroinvertebrate scores, and NHI habitat scores (Tables 6, 12, and 13) and compared to the reference streams in the 1997-2005 studies. Figure 2 shows an example of the rating system. To rate the streams in this study, the 75<sup>th</sup> percentile and higher of the reference sites was given an excellent rating; the 0 percentile to 74.9 percentile of the reference streams was given a good rating. Below the reference site level, the median and above of the sites was given a fair rating. The scores below the median of the sites were given a poor rating.

The IBI and ICI were the only indices used to give a final rating to the streams. The habitat index still needs further evaluation and review before it can be incorporated for streams ratings. When looking at individual indices, IBI fish scores consisted of 17 excellent, 31 good, 10 fair, and 21 poor stream ratings and ICI macroinvertebrate scores had 4 excellent, 43 good, 15 fair, and 17 poor stream ratings (Table 18). For the overall stream ratings only the lowest ratings of either the IBI (IBIuse) and ICI (ICIuse) scores were used (Table 18). Using these criteria for the overall rating, there were 1 excellent, 30 good, 17 fair, and 31 poor stream ratings. Distribution maps of these stream ratings and aquatic life use support are shown in Figures 3 and 4.

The full support stream ratings for the aquatic life use support will include everything with a fair, good, or excellent overall rating. The poor overall stream ratings was established as the nonsupport use designations for the aquatic life use support, however, for the 303d listings, only those samples (six sites) with poor ratings in both the IBI fish rating and ICI macroinvertebrate ratings will be listed.

The high incidence of poor ratings were most likely due to the drought conditions over the last five years previous to sampling. Water levels were extremely low in the Nemaha and upper Elkhorn River Basins, thus reducing stream water levels and habitat and faunal counts. Many streams were reduced to a trickle compared to their "normal" summer flows.

## **Conclusions**

As in the 1997-2005 REMAP study, both the fish and macroinvertebrates reflect water and habitat quality of streams in Nebraska. The macroinvertebrates appear to be more sensitive to impacted streams through a reduction in both density and taxa present. The IBI fish metrics also reflect impacted streams, but because of the fish's ability to quickly move from a threat, the IBI is not quite as responsive as the macroinvertebrate ICI. The macroinvertebrates, in general, are not as mobile as the fish and become more reflective of the nature of a stream. The similarity of both groups allows a cross check of the stream classification and analysis.

The data values for fish, macroinvertebrates, habitat, and chemistries were all within the ranges established for West Cornbelt Plains Ecoregion (47) in the 2005 REMAP report.

Ecoregional differences were not established for anything beyond ecoregion 47 (Western Cornbelt Ecoregion) because only two sites were collected from other ecoregions (27 or Central Great Plains Ecoregion). Data from other river basins will be needed to see if there is a difference in data ranges from the 1997-2001 R-EMAP studies.

## **Summary**

1. A total of 79 sites were surveyed in the Elkhorn, Nemaha, Missouri Tributary, and Lower Platte River basins during 2004-2005 Nebraska Stream Biological Monitoring Program. The majority of streams surveyed were first through third order streams.

2. Fifty-one species of fish were collected, consisting of 12 families. Red shiners, sand shiners, fathead minnows, and bigmouth shiner were the four most abundantly collected fish and

consisted of 72 percent of all samples. The four sensitive species collected were the blacknose dace, longnose dace, shoal chub, and Iowa darter.

3. The fish IBI index consisted of eight metrics and averaged 49.6 and was slightly lower than the average IBI scores from previous studies in 1997-2001 where the average score was 56.9 for perennial streams and 61.1 for reference streams.

4. There were a total of 264 taxa of macroinvertebrates collected during 2004-2005. Individual station species richness varied from one to 60 for all the stream locations. Several sites (mainly the Nemaha and upper Elkhorn River basins) had low taxa counts, but this was attributed to the low water levels and the lessening habitat due to drought conditions. The most common taxa for the four basins were *Sphaerium*, Simuliidae, *Cheumatopsyche*, *Physa*, *Hyalella azteca*, *Tanytarsus*, *Rheotanytarsus* and *Dubiraphia*.

5. Macroinvertebrate ICI scores were calculated from four metrics with the average ICI score of 14. The 1997-2001 R-EMAP studies had averages of 16.5 for perennial streams and 20.8 for reference streams.

6. The habitat HBI index consisted of ten metrics and averaged 34. The 1997-2001 R-EMAP survey averaged 32 for perennial streams and 46 for reference streams.

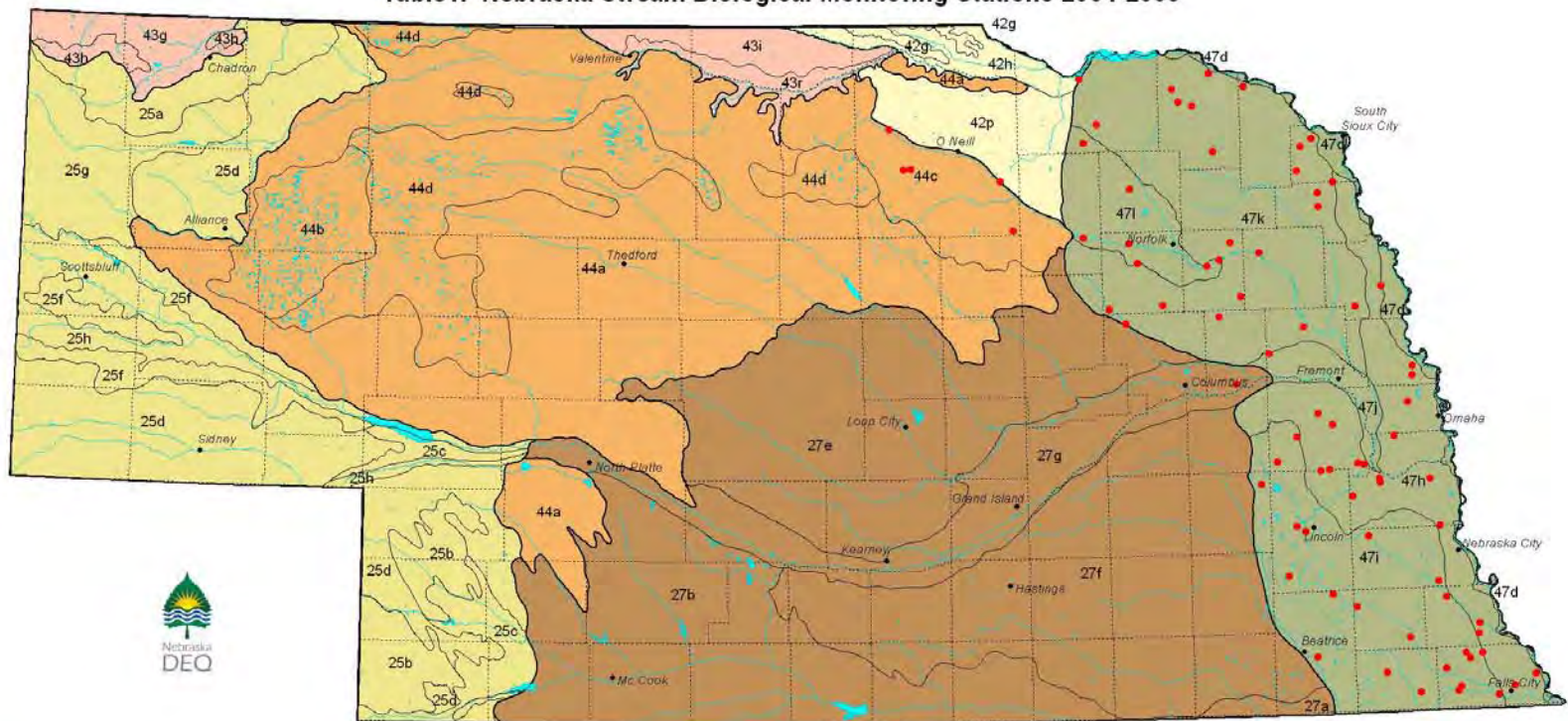
7. Field parameters consisted of temperature, dissolved oxygen, pH, conductivity, turbidity, and stream flow. All values were within the ranges of those recorded during previous studies. The dissolved oxygen water quality standard level of 5 mg/l for a 1-day minimum was exceeded at 5 sites. The pH standard of 5.39 to 9.01 was exceeded at one site. Temperature and conductivity standards were not exceeded. Turbidity has no state standards. The stream flow during 2004-2005 was affected by the lack of rainfall and other drought conditions.

8. The IBI and ICI were the only indices used for stream classifications. The evaluations are based on reference site criteria. The lesser score or value of the two indices was used when giving a stream rating. Using these criteria for the overall rating, there were 1 excellent, 30 good, 17 fair, and 31 poor stream ratings. Several of the poor ratings were due to the drought conditions and the accompanying low water levels and reduced habitat. Only six sites will go on the 303d listing, because both the IBI scores and ICI scores were rated as poor.

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**Table1. Nebraska Stream Biological Monitoring Stations 2004-2005**



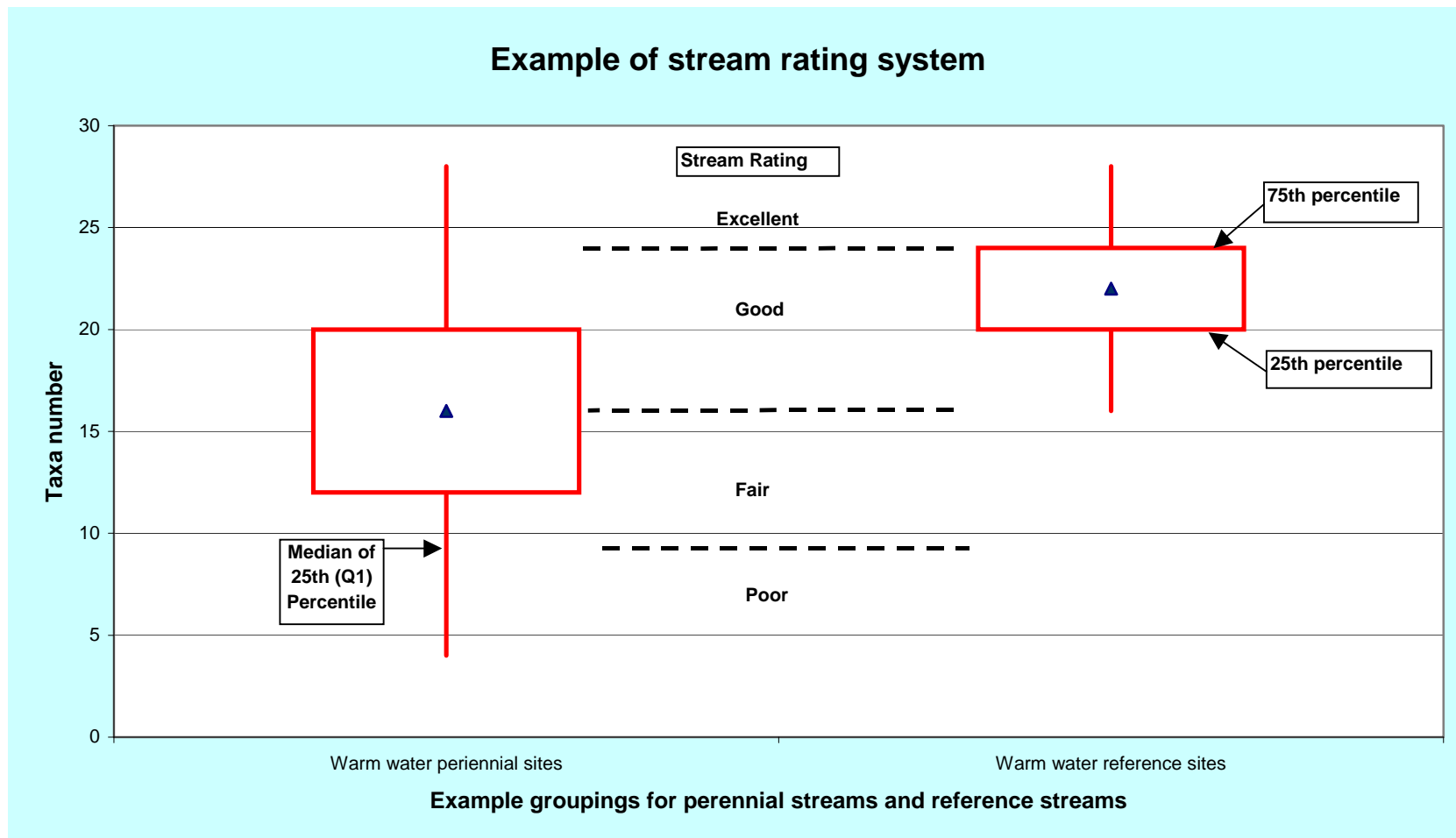
**Nebraska Ecoregions**

- |   |   |   |  |
|---|---|---|--|
| <ul style="list-style-type: none"> <li>25 - Western High Plains</li> <li>25a - Pine Ridge Escarpment</li> <li>25b - Rolling Sand Plains</li> <li>25c - Moderate Relief Rangeland</li> <li>25d - Flat to Rolling Cropland</li> <li>25f - Scotts Bluff and Wildcat Hills</li> <li>25g - Sandy and Silty Tablelands</li> <li>25h - North and South Platte Valley and Terraces</li> </ul> | <ul style="list-style-type: none"> <li>27 - Central Great Plains</li> <li>27a - Smoky Hills</li> <li>27b - Rolling Plains and Breaks</li> <li>27e - Central Nebraska Loess Plains</li> <li>27f - Rainwater Basin Plains</li> <li>27g - Platte River Valley</li> </ul> | <ul style="list-style-type: none"> <li>43 - Northwestern Great Plains</li> <li>43g - Semiarid Pierre Shale Plains</li> <li>43h - White River Badlands</li> <li>43i - Keya Paha Tablelands</li> <li>43r - Niobrara River Breaks</li> </ul> | <ul style="list-style-type: none"> <li>47 - Western Corn Belt Plains</li> <li>47d - Missouri Alluvial Plain</li> <li>47h - Nebraska/Kansas Loess Hills</li> <li>47i - Loess and Glacial Drift Hills</li> <li>47j - Lower Platte Alluvial Plain</li> <li>47k - Northeastern Nebraska Loess Hills</li> <li>47l - Transitional Sandy Plain</li> </ul> |
| <ul style="list-style-type: none"> <li>42 - Northwestern Glaciated Plains</li> <li>42g - Ponca Plains</li> <li>42h - Southern River Breaks</li> <li>42p - Holt Tablelands</li> </ul>  | <ul style="list-style-type: none"> <li>44 - Nebraska Sand Hills</li> <li>44a - Sand Hills</li> <li>44b - Alkaline Lakes Area</li> <li>44c - Wet Meadow and Marsh Plain</li> <li>44d - Lakes Area</li> </ul>   |   |  |

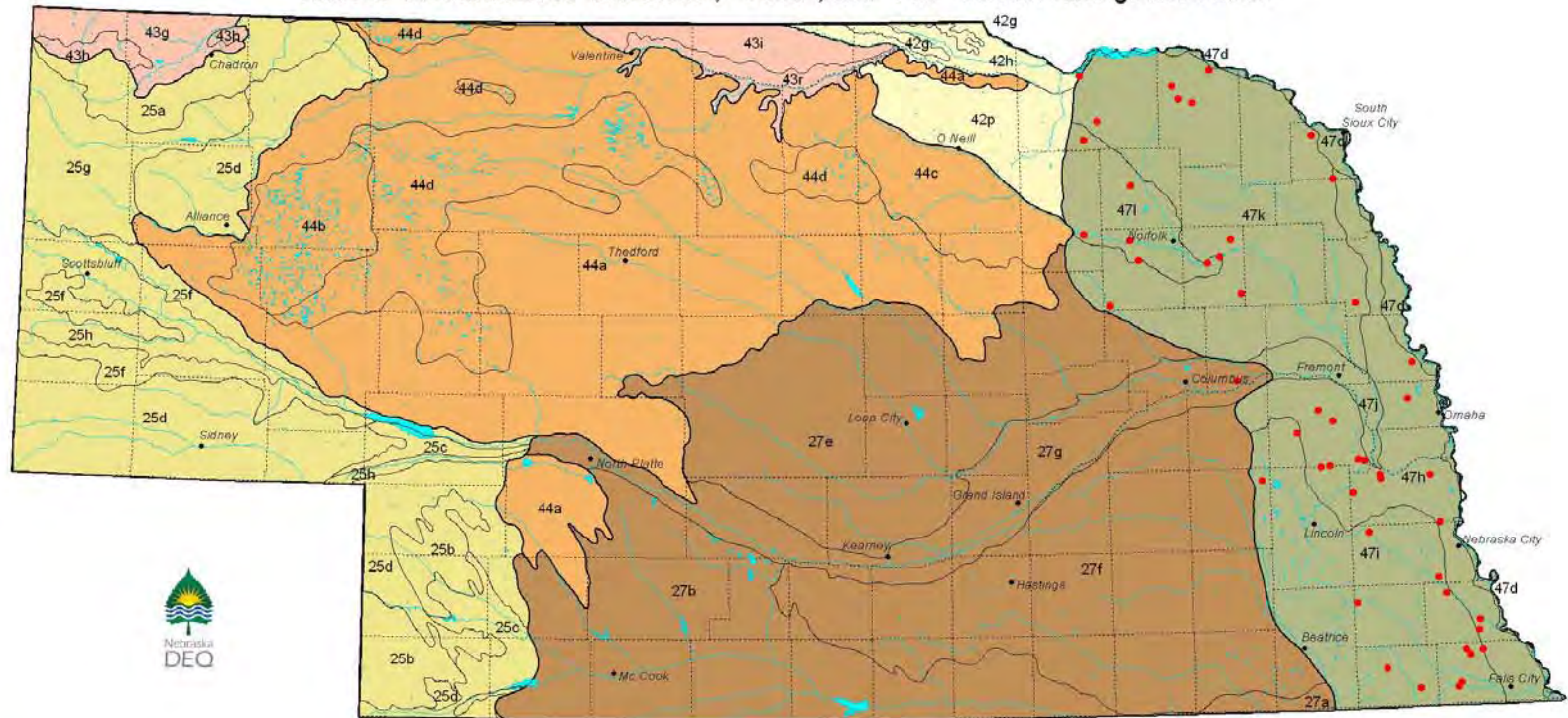
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Figure 2. Example of box plots used in rating a stream and how to compare the stream data with reference data.



**Table 3. Distribution of "Excellent", "Good", and "Fair" Stream Ratings 2004-2005**

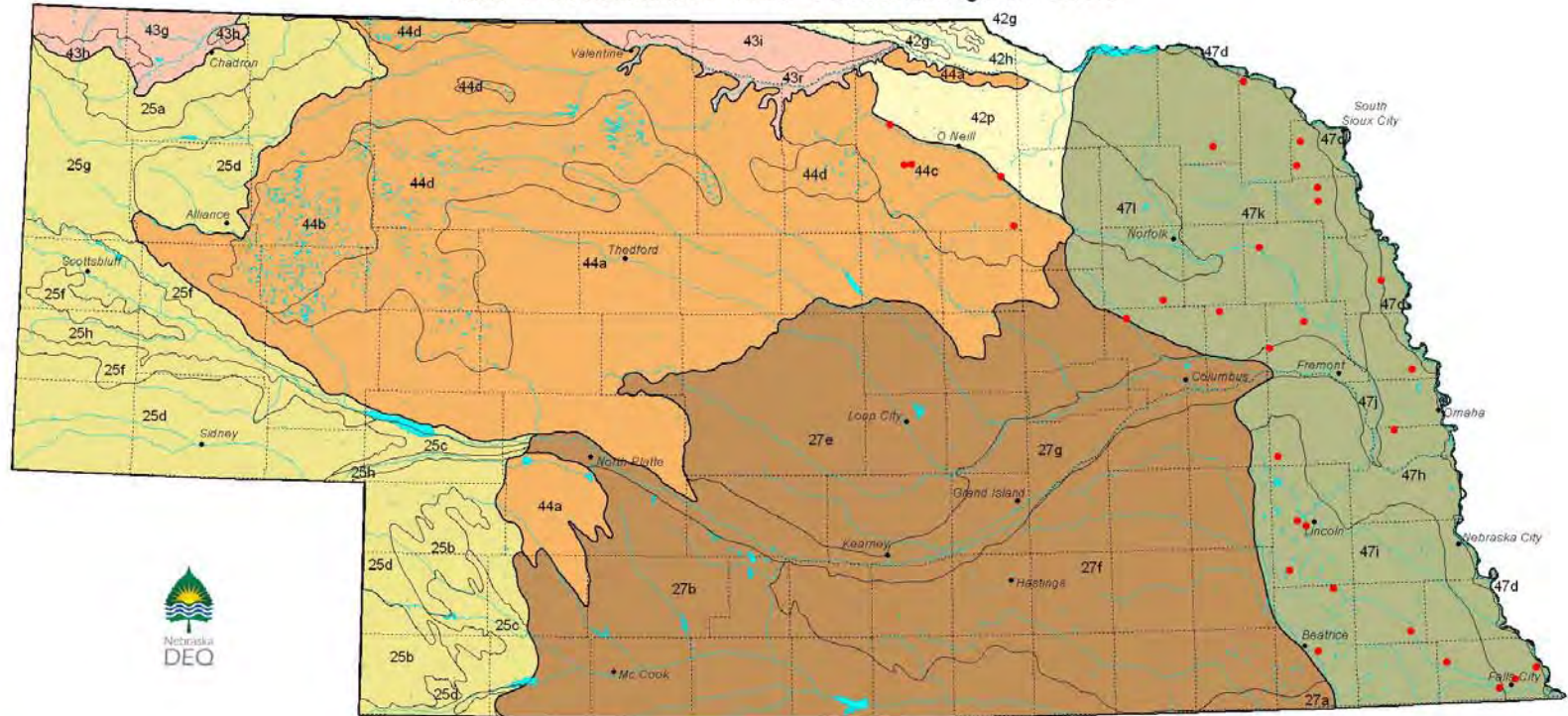


**Nebraska Ecoregions**

- |   |   |  |   |   |  |
|---|---|--|---|---|--|
| <ul style="list-style-type: none"> <li>25 - Western High Plains</li> <li>25a - Pine Ridge Escarpment</li> <li>25b - Rolling Sand Plains</li> <li>25c - Moderate Relief Rangeland</li> <li>25d - Flat to Rolling Cropland</li> <li>25f - Scotts Bluff and Wildcat Hills</li> <li>25g - Sandy and Silty Tablelands</li> <li>25h - North and South Platte Valley and Terraces</li> </ul> | <ul style="list-style-type: none"> <li>27 - Central Great Plains</li> <li>27a - Smoky Hills</li> <li>27b - Rolling Plains and Breaks</li> <li>27e - Central Nebraska Loess Plains</li> <li>27f - Rainwater Basin Plains</li> <li>27g - Platte River Valley</li> </ul> | <ul style="list-style-type: none"> <li>42 - Northwestern Glaciated Plains</li> <li>42g - Ponca Plains</li> <li>42h - Southern River Breaks</li> <li>42p - Holt Tablelands</li> </ul> | <ul style="list-style-type: none"> <li>43 - Northwestern Great Plains</li> <li>43g - Semiarid Pierre Shale Plains</li> <li>43h - White River Badlands</li> <li>43i - Keya Paha Tablelands</li> <li>43r - Niobrara River Breaks</li> </ul> | <ul style="list-style-type: none"> <li>44 - Nebraska Sand Hills</li> <li>44a - Sand Hills</li> <li>44b - Alkaline Lakes Area</li> <li>44c - Wet Meadow and Marsh Plain</li> <li>44d - Lakes Area</li> </ul> | <ul style="list-style-type: none"> <li>47 - Western Corn Belt Plains</li> <li>47d - Missouri Alluvial Plain</li> <li>47h - Nebraska/Kansas Loess Hills</li> <li>47i - Loess and Glacial Drift Hills</li> <li>47j - Lower Platte Alluvial Plain</li> <li>47k - Northeastern Nebraska Loess Hills</li> <li>47l - Transitional Sandy Plain</li> </ul> |
|---|---|--|---|---|--|

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**Table 4. Distribution of "Poor" Stream Ratings 2004-2005**



**Nebraska Ecoregions**

- |   |   |  |   |   |  |
|---|---|--|---|---|--|
| <ul style="list-style-type: none"> <li>25 - Western High Plains</li> <li>25a - Pine Ridge Escarpment</li> <li>25b - Rolling Sand Plains</li> <li>25c - Moderate Relief Rangeland</li> <li>25d - Flat to Rolling Cropland</li> <li>25f - Scotts Bluff and Wildcat Hills</li> <li>25g - Sandy and Silty Tablelands</li> <li>25h - North and South Platte Valley and Terraces</li> </ul> | <ul style="list-style-type: none"> <li>27 - Central Great Plains</li> <li>27a - Smoky Hills</li> <li>27b - Rolling Plains and Breaks</li> <li>27e - Central Nebraska Loess Plains</li> <li>27f - Rainwater Basin Plains</li> <li>27g - Platte River Valley</li> </ul> | <ul style="list-style-type: none"> <li>42 - Northwestern Glaciated Plains</li> <li>42g - Ponca Plains</li> <li>42h - Southern River Breaks</li> <li>42p - Holt Tablelands</li> </ul> | <ul style="list-style-type: none"> <li>43 - Northwestern Great Plains</li> <li>43g - Semiarid Pierre Shale Plains</li> <li>43h - White River Badlands</li> <li>43i - Keya Paha Tablelands</li> <li>43r - Niobrara River Breaks</li> </ul> | <ul style="list-style-type: none"> <li>44 - Nebraska Sand Hills</li> <li>44a - Sand Hills</li> <li>44b - Alkaline Lakes Area</li> <li>44c - Wet Meadow and Marsh Plain</li> <li>44d - Lakes Area</li> </ul> | <ul style="list-style-type: none"> <li>47 - Western Corn Belt Plains</li> <li>47d - Missouri Alluvial Plain</li> <li>47h - Nebraska/Kansas Loess Hills</li> <li>47i - Loess and Glacial Drift Hills</li> <li>47j - Lower Platte Alluvial Plain</li> <li>47k - Northeastern Nebraska Loess Hills</li> <li>47l - Transitional Sandy Plain</li> </ul> |
|---|---|--|---|---|--|

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Table 1. Nebraska Stream Biological Monitoring Program Station, 2004-2005.

STORET	NDEQ_ID	STRMNAME	STR_SEG	ORDER	FLOW CLASS	HUC	ECOREG	STR CLASS	LAT_DD	LONG_DD
009560	LP1153	PAWNEE CREEK	LP1.11600	1	2	10200202	47	WB	40.981703	-96.287152
009810	NE2185	LORES BRANCH	NE2.12110	1	1	10240007	47	WA	40.073176	-96.106752
010087	LP1023	PAWNEE CREEK	LP1.11500	2	2	10200202	47	WB	41.000045	-96.290683
010112	NE3193	INDIAN CREEK	NE3.10800	1	2	10240006	47	WA	40.317006	-95.769987
EL1113	EL1113	MAPLE CREEK	EL1.10900	3	2	10220003	47	WA	41.550640	-96.889620
EL1115	EL1115	PEBBLE CREEK	EL1.20100	3	4	10220003	47	WA	41.659960	-96.687100
EL1116	EL1116	BELL CREEK	EL1.10700	1	2	10220003	47	WB	41.741710	-96.386740
EL1117	EL1117	W. FORK MAPLE CREEK	EL1.10940	1	2	10220003	47	WB	41.714760	-97.169160
EL1118	EL1118	E. FORK MAPLE CREEK	EL1.10920	1	2	10220003	47	WB	41.799890	-97.038540
EL1119	EL1119	ELKHORN RIVER	EL1.20000	4	7	10220003	47	WA	41.934256	-97.230469
EL1120	EL1120	ELKHORN RIVER	EL1.20000	4	7	10220003	47	WA	41.959950	-97.158590
EL1121	EL1121	HUMBUG CREEK	EL1.21300	2	2	10220003	47	WB	42.034210	-97.090120
EL1122	EL1122	ELKHORN RIVER	EL1.20000	4	8	10220003	47	WA	41.985690	-96.928390
EL1123	EL1123	UNION CREEK	EL1.22100	1	1	10220003	47	WB	41.772450	-97.488380
EL2124	EL2124	MIDDLE LOGAN CREEK	EL2.40200	1	2	10220004	47	WB	42.427760	-97.174660
EL3125	EL3125	DRY CREEK	EL3.20400	1	1	10220002	47	WB	42.277900	-97.663210
EL4126	EL4126	BATTLE CREEK	EL4.10500	1	1	10220001	47	WA	41.957340	-97.625310
EL4127	EL4127	ELKHORN RIVER	EL4.10000	3	7	10220001	47	WA	42.040830	-97.676150
EL4128	EL4128	ELKHORN RIVER	EL4.10000	3	7	10220001	47	WA	42.070560	-97.934230
EL4129	EL4129	ELKHORN RIVER	EL4.20300	1	3	10220001	42	WA	42.108210	-98.338150
EL4130	EL4130	ELKHORN RIVER	EL4.30000	2	5	10220001	42	WA	42.318863	-98.408415
EL4131	EL4131	ELKHORN RIVER	EL4.40000	1	4	10220001	44	WA	42.551110	-99.048020
EL4132	EL4132	HOLT CREEK	EL4.30500	1	2	10220001	44	WA	42.376780	-98.965060
EL4133	EL4133	HOLT CREEK	EL4.30400	1	3	10220001	44	WA	42.378240	-98.926510
LP1170	LP1170	BACHELOR BR TO EIGHT MILE CR.	LP1.10110	2	2	10200202	47	WB	40.990110	-96.005070
LP1171	LP1171	LOST CREEK	LP1.21100	3	3	10200201	27	WB	41.426140	-97.081340
LP1172	LP1172	SHELL CREEK	LP1.20800	4	2	10200201	27	WB	41.698350	-97.704600
LP1173	LP1173	SHELL CREEK	LP1.20800	4	2	10220001	47	WB	41.762100	-97.794800
LP2174	LP2174	SALT CREEK	LP2.20000	4	3	10200203	47	WA	40.783260	-96.720240



Table 1. continued.

STORET	NDEQ_ID	STRMNAME	STR_SEG	ORDER	FLOW CLASS	HUC	ECOREG	STR CLASS	LAT_DD	LONG_DD
LP2175	LP2175	WAHOO CREEK	LP2.10100	5	5	10200203	47	WA	41.068120	-96.406970
LP2176	LP2176	BATES BRANCH	LP2.20612	3	2	10200203	47	WB	41.083410	-96.861640
LP2177	LP2177	MIDDLE CREEK	LP2.21000	3	2	10200203	47	WB	40.805380	-96.766280
LP2178	LP2178	MIDDLE OAK CREEK	LP2.20710	3	1	10200203	47	WB	40.989810	-96.959180
LP2179	LP2179	COTTONWOOD CREEK	LP2.10210	3	1	10200203	47	WB	40.239860	-96.677090
LP2180	LP2180	SILVER CREEK	LP2.10140	3	2	10200203	47	WB	41.235920	-96.541950
LP2181	LP2181	OLIVE BRANCH CREEK	LP2.40310	3	2	10200203	47	WB	40.592758	-96.821866
LP2182	LP2182	ROCK CREEK	LP2.11100	2	2	10200203	47	WB	41.040390	-96.620470
LP2183	LP2183	CLEAR CREEK	LP2.10110	4	3	10200203	47	WA	41.062120	-96.370770
LP2184	LP2184	SAND CREEK	LP2.10170	3	2	10200203	47	WB	41.284380	-96.625400
LP2185	LP2185	DEE CREEK	LP2.10800	2	2	10200203	47	WB	40.925540	-96.445040
LP2186	LP2186	WAHOO CREEK	LP2.10400	3	3	10200203	47	WB	41.189980	-96.748810
LP2187	LP2178	ROCK CREEK	LP2.11010	2	2	10200203	47	WB	41.045850	-96.569670
MT1148	MT1148	S. BRANCH PAPILLION CREEK	MT1.10240	1	1	10230006	47	WB	41.177930	-96.197750
MT1150	MT1150	BIG PAPILLION CREEK	MT1.10120	2	3	10230006	47	WA	41.321220	-96.109990
MT1151	MT1151	LONG CREEK	MT1.10800	1	1	10230006	47	WB	41.437600	-96.080810
MT1152	MT1152	MILL CREEK	MT1.10700	2	2	10230006	47	WB	41.475582	-96.075718
MT1153	MT1153	SILVER CREEK	MT1.11510	1	2	10230001	47	WB	41.822100	-96.235760
MT1154	MT1154	COW CREEK	MT1.12171	1	2	10230001	47	WB	42.174614	-96.577792
MT1156	MT1156	NORTH OMAHA CREEK	MT1.12150	2	3	10230001	47	WB	42.233560	-96.578190
MT1157	MT1157	OMAHA CREEK	MT1.12100	3	4	10230001	47	WB	42.278700	-96.487580
MT2158	MT2158	ELK CREEK	MT2.10300	2	3	10170101	47	WB	42.330480	-96.694550
MT2159	MT2159	ELK CREEK	MT2.10300	2	4	10170101	47	WB	42.433725	-96.667377
MT2160	MT2160	ELK CREEK	MT2.10200	3	4	10170101	47	WB	42.466230	-96.602570
MT2161	MT2161	LIME CREEK	MT2.11000	2	3	10170101	47	WB	42.700170	-96.984640
MT2162	MT2162	WEST BOW CREEK	MT2.11310	2	4	10170101	47	WB	42.763090	-97.183200
MT2163	MT2163	UNNAMED TRIB. NORWEGIAN BOW CREEK	MT2.11521	1	1	10170101	47	WB	42.624120	-97.287700
MT2164	MT2164	NORWEGIAN BOW CREEK	MT2.11520	2	2	10170101	47	WB	42.642300	-97.368350

Table 1. continued.

STORET	NDEQ_ID	STRMNAME	STR_SEG	ORDER	FLOW CLASS	HUC	ECOREG	STR CLASS	LAT_DD	LONG_DD
MT2165	MT2165	WEST BOW CREEK	MT2.11320	1	2	10170101	47	WB	42.699030	-97.401400
MT2166	MT2166	LITTLE BAZILE CREEK	MT2.12510	2	4	10170101	47	WB	42.555470	-97.842420
MT2167	MT2167	UNNAMED TRIB. BAZILE CREEK	MT2.12620	1	1	10170101	47	WB	42.477912	-97.923554
MT2168	MT2168	BAZILE CREEK	MT2.12400	3	6	10170101	47	WA	42.752080	-97.937150
NE1196	NE1196	BIG SLOUGH	NE1.12831	2	2	10240001	47	WB	40.785320	-95.959020
NE1197	NE1197	WINNEBAGO CREEK	NE1.10200	1	1	10240005	47	WB	40.129590	-95.460930
NE2198	NE2198	BIG NEMAHA RIVER	NE2.10000	4	6	10240008	47	WA	40.050470	-95.673070
NE2199	NE2199	WHISKEY RUN	NE2.10751	2	1	10240008	47	WB	40.208620	-95.823810
NE2200	NE2200	LONG BRANCH CREEK	NE2.12330	2	2	10240008	47	WA	40.171560	-95.959580
NE2201	NE2201	UNNAMED TRIB. BALLS BRANCH	NE2.12135.12	1	1	10240007	47	WB	40.164870	-96.292290
NE2202	NE2202	FOURMILE CREEK	NE2.12000	2	1	10240007	47	WA	40.072250	-95.897450
NE2203	NE2203	MIDDLE BRANCH BIG NEMAHA RIVER	NE2.12600	3	2	10240008	47	WB	40.452960	-96.444790
NE2204	NE2204	MUDDY CREEK	NE2.10600	4	4	10240008	47	WA	40.086180	-95.581340
NE2205	NE2205	S. FORK BIG NEMAHA RIVER	NE2.11900	5	4	10240007	47	WA	40.091590	-95.881670
NE2206	NE2206	N. FORK BIG NEMAHA RIVER	NE2.12500	4	5	10240008	47	WA	40.311590	-96.155220
NE2207	NE2207	MID. BR. BIG NEMAHA RIVER	NE2.12610	2	2	10240008	47	WB	40.508360	-96.578320
NE2208	NE2208	LITTLE MUDDY CREEK	NE2.10760	2	2	10240008	47	WB	40.234900	-95.847030
NE2209	NE2209	HOOSIER CREEK	NE2.10810	1	1	10240008	47	WB	40.232060	-95.754520
NE3210	NE3210	HOOPER CREEK	NE3.31200	2	3	10240006	47	WA	40.753460	-96.365230
NE3211	NE3211	LITTLE NEMAHA RIVER	NE3.10000	4	5	10240006	47	WA	40.479480	-95.941680
NE3212	NE3212	SAND CREEK	NE3.12700	2	1	10240006	47	WB	40.546440	-95.981460
NE3213	NE3213	LITTLE NEMAHA RIVER	NE3.10000	4	6	10240006	47	WA	40.360460	95.761050

Table 2. Station characteristics from the 2004-2005 Nebraska Stream Biological Monitoring Program.

STORET	NDEQ_ID	STRMNAME	COUNTY	BASIN	ECOGROUP	FLOWGRP	AQVEGCLS	TROUTCLS	SUB_TYPE
009560	LP1153	PAWNEE CREEK	CASS	LOWER PLATTE	EAST	MEDSTRM	NONE	NT	HARDBED
009810	NE2185	LORES BRANCH	PAWNEE	NEMAHA	EAST	SMLSTRM	NONE	NT	SAND
010087	LP1023	PAWNEE CREEK	CASS	LOWER PLATTE	EAST	MEDSTRM	NONE	NT	SILTCLAY
010112	NE3193	INDIAN CREEK	NEMAHA	NEMAHA	EAST	MEDSTRM	NONE	NT	SAND
EL1113	EL1113	MAPLE CREEK	DODGE	ELKHORN	EAST	MEDSTRM	NONE	NT	SAND
EL1114	EL1114	SILVER CREEK	DODGE	ELKHORN	EAST	MEDSTRM	NONE	NT	SAND
EL1115	EL1115	PEBBLE CREEK	DODGE	ELKHORN	EAST	LRGSTRM	NONE	NT	SAND
EL1116	EL1116	BELL CREEK	BURT	ELKHORN	EAST	MEDSTRM	SV	NT	HARDBED
EL1117	EL1117	W. FORK MAPLE CREEK	COLFAX	ELKHORN	EAST	MEDSTRM	NONE	NT	SILTCLAY
EL1118	EL1118	E. FORK MAPLE CREEK	STANTON	ELKHORN	EAST	MEDSTRM	NONE	NT	SILTCLAY
EL1119	EL1119	ELKHORN RIVER	STANTON	ELKHORN	EAST	RIVER	NONE	NT	SAND
EL1120	EL1120	ELKHORN RIVER	STANTON	ELKHORN	EAST	RIVER	NONE	NT	SAND
EL1121	EL1121	HUMBUG CREEK	STANTON	ELKHORN	EAST	MEDSTRM	SV	NT	SILTCLAY
EL1122	EL1122	ELKHORN RIVER	CUMING	ELKHORN	EAST	RIVER	NONE	NT	SAND
EL1123	EL1123	UNION CREEK	MADISON	ELKHORN	EAST	SMLSTRM	NONE	NT	SILTCLAY
EL2124	EL2124	MIDDLE LOGAN CREEK	CEDAR	ELKHORN	EAST	MEDSTRM	NONE	NT	SAND
EL3125	EL3125	DRY CREEK	PIERCE	ELKHORN	EAST	SMLSTRM	NONE	NT	SAND
EL4126	EL4126	BATTLE CREEK	MADISON	ELKHORN	EAST	SMLSTRM	NONE	NT	SILTCLAY
EL4127	EL4127	ELKHORN RIVER	MADISON	ELKHORN	EAST	RIVER	NONE	NT	SAND
EL4128	EL4128	ELKHORN RIVER	ANTELOPE	ELKHORN	EAST	RIVER	NONE	NT	SAND
EL4129	EL4129	ELKHORN RIVER	HOLT	ELKHORN	SANDHILLS	MEDSTRM	SV	NT	SAND
EL4130	EL4130	ELKHORN RIVER	HOLT	ELKHORN	SANDHILLS	LRGSTRM	NONE	NT	SAND
EL4131	EL4131	ELKHORN RIVER	HOLT	ELKHORN	SANDHILLS	LRGSTRM	SV	NT	SAND
EL4132	EL4132	HOLT CREEK	HOLT	ELKHORN	SANDHILLS	MEDSTRM	SV	NT	SAND
EL4133	EL4133	HOLT CREEK	HOLT	ELKHORN	SANDHILLS	MEDSTRM	SV	NT	SAND
LP1170	LP1170	BACHELOR BR TO EIGHT MILE CR.	CASS	LOWER PLATTE	EAST	MEDSTRM	NONE	NT	COBBLE
LP1171	LP1171	LOST CREEK	COLFAX	LOWER PLATTE	EAST	MEDSTRM	SV	NT	SAND
LP1172	LP1172	SHELL CREEK	PLATTE	LOWER PLATTE	EAST	SMLSTRM	NONE	NT	HARDBED
LP1173	LP1173	SHELL CREEK	MADISON	LOWER PLATTE	EAST	MEDSTRM	NONE	NT	SILTCLAY

Table 2. continued.

STORET	NDEQ_ID	STRMNAME	COUNTY	BASIN	ECOGROUP	FLOWGRP	AQVEGCLS	TROUTCLS	SUB_TYPE
LP2174	LP2174	SALT CREEK	LANCASTER	LOWER PLATTE	EAST	MEDSTRM	NONE	NT	SAND
LP2175	LP2175	WAHOO CREEK	SAUNDERS	LOWER PLATTE	EAST	LRGSTRM	NONE	NT	SAND
LP2176	LP2176	BATES BRANCH	SAUNDERS	LOWER PLATTE	EAST	MEDSTRM	NONE	NT	SILTCLAY
LP2177	LP2177	MIDDLE CREEK	LANCASTER	LOWER PLATTE	EAST	MEDSTRM	SV	NT	SILTCLAY
LP2178	LP2178	MIDDLE OAK CREEK	SEWARD	LOWER PLATTE	EAST	SMLSTRM	NONE	NT	SILTCLAY
LP2179	LP2179	COTTONWOOD CREEK	SAUNDERS	LOWER PLATTE	EAST	SMLSTRM	NONE	NT	SILTCLAY
LP2180	LP2180	SILVER CREEK	SAUNDERS	LOWER PLATTE	EAST	MEDSTRM	NONE	NT	SILTCLAY
LP2181	LP2181	OLIVE BRANCH CREEK	LANCASTER	LOWER PLATTE	EAST	MEDSTRM	NONE	NT	HARDBED
LP2182	LP2182	ROCK CREEK	LANCASTER	LOWER PLATTE	EAST	MEDSTRM	NONE	NT	SILTCLAY
LP2183	LP2183	CLEAR CREEK	SAUNDERS	LOWER PLATTE	EAST	MEDSTRM	NONE	NT	SAND
LP2184	LP2184	SAND CREEK	SAUNDERS	LOWER PLATTE	EAST	MEDSTRM	NONE	NT	SAND
LP2185	LP2185	DEE CREEK	CASS	LOWER PLATTE	EAST	MEDSTRM	NONE	NT	SAND
LP2186	LP2186	WAHOO CREEK	SAUNDERS	LOWER PLATTE	EAST	MEDSTRM	NONE	NT	SILTCLAY
LP2187	LP2178	ROCK CREEK	SAUNDERS	LOWER PLATTE	EAST	MEDSTRM	NONE	SV	SILTCLAY
MP1003	MP1003	CLEAR CREEK	POLK	MIDDLE PLATTE	EAST	MEDSTRM	WC	NT	SAND
MP2064	MP2064	PLATTE RIVER	BUFFALO	MIDDLE PLATTE	EAST	LRGSTRM	NONE	NT	SAND
MP2065	MP2065	SPRING CREEK	DAWSON	MIDDLE PLATTE	EAST	SMLSTRM	NONE	NT	SILTCLAY
MP2066	MP2066	PLATTE RIVER	LINCOLN	MIDDLE PLATTE	EAST	RIVER	NONE	NT	SAND
MP2067	MP2067	PLATTE RIVER	LINCOLN	MIDDLE PLATTE	EAST	RIVER	NONE	NT	SAND
MT1148	MT1148	S. BRANCH PAPILLION CREEK	SARPY	MISSOURI TRIBS	EAST	SMLSTRM	NONE	NT	SILTCLAY
MT1150	MT1150	BIG PAPILLION CREEK	DOUGLAS	MISSOURI TRIBS	EAST	MEDSTRM	NONE	NT	SILTCLAY
MT1151	MT1151	LONG CREEK	WASHINGTON	MISSOURI TRIBS	EAST	SMLSTRM	SV	NT	SILTCLAY
MT1152	MT1152	MILL CREEK	WASHINGTON	MISSOURI TRIBS	EAST	MEDSTRM	NONE	NT	SILTCLAY
MT1153	MT1153	SILVER CREEK	BURT	MISSOURI TRIBS	EAST	MEDSTRM	NONE	NT	SAND
MT1154	MT1154	COW CREEK	THURSTON	MISSOURI TRIBS	EAST	MEDSTRM	NONE	NT	HARDBED



Table 2. continued.

STORET	NDEQ_ID	STRMNAME	COUNTY	BASIN	ECOGROUP	FLOWGRP	AQVEGCLS	TROUTCLS	SUB_TYPE
MT1157	MT1157	OMAHA CREEK	DAKOTA	MISSOURI TRIBS	EAST	LRGSTRM	NONE	NT	SILTCLAY
MT2158	MT2158	ELK CREEK	DAKOTA	MISSOURI TRIBS	EAST	MEDSTRM	NONE	NT	SILTCLAY
MT2159	MT2159	ELK CREEK	DAKOTA	MISSOURI TRIBS	EAST	LRGSTRM	NONE	NT	SILTCLAY
MT2160	MT2160	ELK CREEK	DAKOTA	MISSOURI TRIBS	EAST	LRGSTRM	NONE	NT	GRAVEL
MT2161	MT2161	LIME CREEK	DIXON	MISSOURI TRIBS	EAST	LRGSTRM	NONE	NT	SILTCLAY
MT2162	MT2162	WEST BOW CREEK	CEDAR	MISSOURI TRIBS	EAST	LRGSTRM	NONE	NT	SAND
MT2163	MT2163	UNNAMED TRIB. NORWEGIAN BOW CREEK	CEDAR	MISSOURI TRIBS	EAST	SMLSTRM	NONE	NT	SAND
MT2164	MT2164	NORWEGIAN BOW CREEK	CEDAR	MISSOURI TRIBS	EAST	MEDSTRM	SV	NT	SAND
MT2165	MT2165	WEST BOW CREEK	CEDAR	MISSOURI TRIBS	EAST	MEDSTRM	NONE	NT	SAND
MT2166	MT2166	LITTLE BAZILE CREEK	KNOX	MISSOURI TRIBS	EAST	LRGSTRM	NONE	NT	SAND
MT2167	MT2167	UNNAMED TRIB. BAZILE CREEK	KNOX	MISSOURI TRIBS	EAST	SMLSTRM	NONE	NT	SAND
MT2168	MT2168	BAZILE CREEK	KNOX	MISSOURI TRIBS	EAST	LRGSTRM	NONE	NT	SAND
NE1196	NE1196	BIG SLOUGH	CASS	NEMAHA	EAST	MEDSTRM	NONE	NT	SILTCLAY
NE1197	NE1197	WINNEBAGO CREEK	RICHARDSON	NEMAHA	EAST	SMLSTRM	SV	NT	SILTCLAY
NE2198	NE2198	BIG NEMAHA RIVER	RICHARDSON	NEMAHA	EAST	LRGSTRM	NONE	NT	SAND
NE2199	NE2199	WHISKEY RUN	RICHARDSON	NEMAHA	EAST	SMLSTRM	NONE	NT	SAND
NE2200	NE2200	LONG BRANCH CREEK	RICHARDSON	NEMAHA	EAST	MEDSTRM	NONE	NT	SAND
NE2201	NE2201	UNNAMED TRIB. BALLS BRANCH	PAWNEE	NEMAHA	EAST	SMLSTRM	SV	NT	SILTCLAY
NE2202	NE2202	FOURMILE CREEK	RICHARDSON	NEMAHA	EAST	SMLSTRM	SV	NT	SAND
NE2203	NE2203	MIDDLE BRANCH BIG NEMAHA RIVER	JOHNSON	NEMAHA	EAST	MEDSTRM	NONE	NT	SAND
NE2204	NE2204	MUDDY CREEK	RICHARDSON	NEMAHA	EAST	LRGSTRM	NONE	NT	SAND
NE2205	NE2205	S. FORK BIG NEMAHA RIVER	RICHARDSON	NEMAHA	EAST	LRGSTRM	NONE	NT	SAND

Table 2. continued.

STORET	NDEQ_ID	STRMNAME	COUNTY	BASIN	ECOGROUP	FLOWGRP	AQVEGCLS	TROUTCLS	SUB_TYPE
NE2206	NE2206	N. FORK BIG NEMAHA RIVER	JOHNSON	NEMAHA	EAST	LRGSTRM	NONE	NT	SAND
NE2207	NE2207	MID. BR. BIG NEMAHA RIVER	GAGE	NEMAHA	EAST	MEDSTRM	NONE	NT	SAND
NE2208	NE2208	LITTLE MUDDY CREEK	RICHARDSON	NEMAHA	EAST	MEDSTRM	NONE	NT	SAND
NE2209	NE2209	HOOSIER CREEK	RICHARDSON	NEMAHA	EAST	SMLSTRM	NONE	NT	COBBLE
NE3210	NE3210	HOOPER CREEK	OTOE	NEMAHA	EAST	MEDSTRM	NONE	NT	SAND
NE3211	NE3211	LITTLE NEMAHA RIVER	NEMAHA	NEMAHA	EAST	LRGSTRM	NONE	NT	SAND
NE3212	NE3212	SAND CREEK	OTOE	NEMAHA	EAST	SMLSTRM	NONE	NT	SAND
NE3213	NE3213	LITTLE NEMAHA RIVER	NEMAHA	NEMAHA	EAST	LRGSTRM	NONE	NT	SAND

Table 3. Stream types, flow, vegetation, water temperature, flow groupings, stream conditions and definitions used during the Nebraska Stream Biological Monitoring Program.

<b>Levels</b>	<b>Conditions</b>	<b>Explanation</b>
Level 1 - Temperature or Ecoregion		
	Cold	Watercress or trout present
	East	Ecoregions 27,45,46,47
	Sandhills	Ecoregion 44
	West	Ecoregions 25 and 43
Level 2 - Flow Type		
	Small Stream (SMLSTRM)	Flow Class 1 (<1 cfs)
	Medium Stream (MEDSTRM)	Flow Class 2-3 (1-10 cfs)
	Large Stream (LGESTRM)	Flow Class 4-6 (10-100 cfs)
	River (River)	Flow Class 7-9 (>100 cfs)
Level 3 - Vegetation Type		
	Watercress (WC)	Watercress common to abundant. Cold water only
	Submerged (SV)	Submerged vegetation common to abundant, no watercress
	Emergent (EV)	Emergent vegetation common to abundant, no watercress or submerged vegetation
	None (NV)	No aquatic vegetation common or abundant
Level 4A - (Cold water only) - Trout Presence		
	No Trout (NT)	No trout collected in standard fish sampling
	Few Trout (FT)	1 to 9 trout collected in standard fish sampling
	Abundant Trout (AT)	10 or more trout collected in standard fish sampling
Level 4B - (Warm water only) - Substrate Type		
	Gravel	Gravel or larger is the dominant substrate
	Sand	Sand is the dominant substrate
	Silt-Clay	Silt or unconsolidated clay is the dominant substrate
	Detritus	Detritus (unconsolidated organic matter) is the dominant substrate
	Hardbed	Bedrock or hardpan clay is the dominant substrate

Table 3. continued

<b>Flow Class</b>	<b>Estimated Base Flow (cfs)</b>
1	>0.1 - <1.0
2	1 - 5
3	5 - 10
4	10 - 25
5	25 - 50
6	50 - 100
7	100 - 250
8	250 - 500
9	>500

Table 4. Summary of fish species by abundance collected during the Nebraska Stream Biological Monitoring Program, 2004-2005.

Common Name	Scientific Name	Family	Total Count	Percent
Red shiner	<i>Notropis lutrensis</i>	Cyprinidae	14198	26.39
Sand shiner	<i>Notropis stramineus</i>	Cyprinidae	12420	23.08
Fathead minnow	<i>Pimephales promelas</i>	Cyprinidae	6328	11.76
Bigmouth shiner	<i>Notropis dorsalis</i>	Cyprinidae	5770	10.72
Creek chub	<i>Semotilus atromaculatus</i>	Cyprinidae	2605	4.84
Green sunfish	<i>Lepomis cyanellus</i>	Centrarchidae	2336	4.34
Channel catfish	<i>Ictalurus punctatus</i>	Ictaluridae	1913	3.56
Brassy minnow	<i>Hybognathus hankinsoni</i>	Cyprinidae	1604	2.98
Central stoneroller	<i>Campostoma anomalum</i>	Cyprinidae	1497	2.78
River carpsucker	<i>Carpionodes carpio</i>	Cyprinidae	837	1.56
Common carp	<i>Cyprinus carpio</i>	Cyprinidae	591	1.10
Black bullhead	<i>Ameiurus melas</i>	Ictaluridae	419	0.78
Johnny darter	<i>Etheostoma nigrum</i>	Percidae	373	0.69
Suckermouth minnow	<i>Phenacobius mirabilis</i>	Cyprinidae	348	0.65
Gizzard shad	<i>Dorosoma cepedianum</i>	Clupeidae	292	0.54
Bluntnose minnow	<i>Pimephales notatus</i>	Cyprinidae	290	0.54
Yellow bullhead	<i>Ameiurus natalis</i>	Ictaluridae	222	0.41
Plains minnow	<i>Hybognathus placitus</i>	Cyprinidae	200	0.37
White sucker	<i>Catostomus commersoni</i>	Catostomidae	160	0.30
Largemouth bass	<i>Micropterus salmoides</i>	Centrarchidae	156	0.29
Flathead chub	<i>Platygobio gracilis</i>	Cyprinidae	144	0.27
Freshwater drum	<i>Aplodinotus grunniens</i>	Sciaenidae	124	0.23
Blacknose dace	<i>Rhinichthys atratulus</i>	Cyprinidae	110	0.20
Plains topminnow	<i>Fundulus sciadicus</i>	Cyprinidae	92	0.17
Flathead catfish	<i>Pylodictis olivaris</i>	Ictaluridae	89	0.17
Bluegill	<i>Lepomis macrochirus</i>	Centrarchidae	78	0.14
Emerald shiner	<i>Notropis atherinoides</i>	Cyprinidae	78	0.14
Stonecat	<i>Noturus flavus</i>	Ictaluridae	70	0.13
Longnose dace	<i>Rhinichthys cataractae</i>	Cyprinidae	66	0.12
Grass pickerel	<i>Esox americanus</i>	Esocidae	60	0.11
Shoal chub	<i>Hybopsis aestivalis</i>	Cyprinidae	57	0.11
River shiner	<i>Notropis blennioides</i>	Cyprinidae	49	0.09
Iowa darter	<i>Etheostoma exile</i>	Percidae	43	0.08
Northern pike	<i>Esox lucius</i>	Esocidae	27	0.05
Shorthead redhorse	<i>Moxostoma macrolepidotum</i>	Catostomidae	21	0.04
Orangespotted sunfish	<i>Lepomis humilis</i>	Percidae	18	0.03
Golden shiner	<i>Notemigonus crysoleucas</i>	Cyprinidae	15	0.03
Redear sunfish	<i>Lepomis microlophus</i>	Centrarchidae	15	0.03
Quillback	<i>Carpionodes cyprinus</i>	Catostomidae	13	0.02
Black crappie	<i>Pomoxis nigromaculatus</i>	Centrarchidae	10	0.02
White bass	<i>Morone chrysops</i>	Moronidae	10	0.02
White crappie	<i>Pomoxis annularis</i>	Centrarchidae	10	0.02
Shortnose gar	<i>Lepisosteus platostomus</i>	Lepisosteidae	9	0.02

Table 4. continued.

<b>Common Name</b>	<b>Scientific Name</b>	<b>Family</b>	<b>Total Count</b>	<b>Percent</b>
Yellow perch	<i>Perca flavescens</i>	Percidae	9	0.02
Mosquitofish	<i>Gambusia affinis</i>	Poeciliidae	8	0.01
Silver chub	<i>Macrhybopsis storeriana</i>	Cyprinidae	8	0.01
Black buffalo	<i>Ictiobus niger</i>	Catostomidae	4	0.01
Goldfish	<i>Carassius auratus</i>	Cyprinidae	2	0.00
Longnose gar	<i>Lepisosteus osseus</i>	Lepisosteidae	2	0.00
Smallmouth bass	<i>Micropterus dolomieu</i>	Centrarchidae	2	0.00
Walleye	<i>Stizostedion vitreum</i>	Percidae	2	0.00
		Total Count	53804	

Table 5. Fish families collected during the Nebraska Stream Biological Monitoring Program, 2004-2005.

<b>Family Name</b>	<b>Frequency</b>	<b>Percent</b>	<b>Cumulative Frequency</b>	<b>Cumulative Percent</b>
Cyprinidae	24305	40.67	24305	40.67
Ictaluridae	9713	16.25	34018	56.93
Centrarchidae	6586	11.02	40604	67.95
Catostomidae	5899	9.87	46503	77.82
Percidae	2907	4.86	49410	82.68
Clupeidae	2175	3.64	51585	86.32
Sciaenidae	2215	3.71	53800	90.03
Fundulidae	295	0.49	54095	90.52
Esocidae	2007	3.36	56102	93.88
Lepisosteidae	2004	3.35	58106	97.24
Moronidae	924	1.55	59030	98.78
Poeciliidae	727	1.22	59757	100.00
<b>Total Count</b>	<b>59757</b>		<b>59757</b>	

Table 6. Minimum, 25<sup>th</sup> percentile, median, 75<sup>th</sup> percentile, maximum, and number of samples for fish metrics and fish metric scores during the Nebraska Stream Biological Monitoring Program, 2004-2005.

<b>Metric</b>	<b>Minimum</b>	<b>25%tile</b>	<b>Median</b>	<b>75%tile</b>	<b>Maximum</b>	<b>Number Sampled</b>
IBI8	19.177	39.158	49.003	60.59.3	91.897	80
Numnatssp	1	6	9	13	25	80
Numfamily	1	2	3	4.5	8	80
Numsensitive	0	0	0	0	3	80
Propor tolerant	0.293	0.704	0.88	0.972	1	80
Propor benthosp	0	0.102	0.295	0.526	0.963	80
Num longlivesp	0	2	5	7.5	13	80
Propor carn	0	0.026	0.101	0.296	1	80
NatsspScore	0.932	3.844	5.25	8.042	10	80
NatfamScore	1.64	4.294	5.8	7.264	10	80
SensitScore	0	0	0	0	10	80
TolrntScore	0	0.323	1.411	3.482	8.31	80
BenthicScore	0	2.635	4.336	6.542	10	80
LongliveScore	0	2.978	4.707	7.297	10	80
Carn Score	0	1.586	6	10	10	80



Table 7. Table of fish raw metric values collected for the Nebraska Stream Biological Monitoring Program, 2004-2005. Column headings are explained at end of table.

STORET	NDEQ_ID	STRMNAME	ECOREG*	Numnatstp	Numnatfm	Nssen	Ptole	Nsnbenth	Nslunk	Pintro	Pncarn
009560	LP1153	PAWNEE CREEK	47	6	3	0	1.000	1	3	0	0.460
009810	NE2185	LORES BRANCH	47	6	3	0	0.792	1	4	0	0.631
010087	LP1023	PAWNEE CREEK	47	10	4	0	0.906	1	7	0	0.612
010112	NE3193	INDIAN CREEK	47	6	3	0	0.500	3	2	0	0.176
EL1113	EL1113	MAPLE CREEK	47	7	2	1	0.902	2	2	0	0.000
EL1115	EL1115	PEBBLE CREEK	47	4	2	0	1.000	1	1	0	0.167
EL1116	EL1116	BELL CREEK	47	10	4	0	0.921	3	3	0	0.070
EL1117	EL1117	W. FORK MAPLE CREEK	47	2	1	0	1.000	1	0	0	0.000
EL1118	EL1118	E. FORK MAPLE CREEK	47	4	1	0	0.888	2	1	0	0.463
EL1119	EL1119	ELKHORN RIVER	47	25	8	3	0.742	6	12	0	0.018
EL1120	EL1120	ELKHORN RIVER	47	23	8	3	0.926	7	9	0	0.007
EL1121	EL1121	HUMBUG CREEK	47	13	4	0	0.867	4	9	0	0.124
EL1122	EL1122	ELKHORN RIVER	47	19	6	3	0.707	5	8	0	0.004
EL1123	EL1123	UNION CREEK	47	7	3	0	1.000	1	4	0	0.026
EL2124	EL2124	MIDDLE LOGAN CREEK	47	5	1	0	0.875	2	1	0	0.116
EL3125	EL3125	DRY CREEK	47	12	5	2	0.576	5	4	0	0.075
EL4126	EL4126	BATTLE CREEK	47	5	3	0	1.000	1	2	0	0.288
EL4127	EL4127	ELKHORN RIVER	47	24	8	3	0.754	7	9	0	0.033
EL4128	EL4128	ELKHORN RIVER	47	24	8	2	0.767	7	13	0	0.032
EL4129	EL4129	CLEARWATER CREEK	42	12	5	2	0.572	4	5	0	0.027
EL4130	EL4130	ELKHORN RIVER	42	20	5	2	0.678	4	12	0	0.118
EL4131	EL4131	ELKHORN RIVER	44	17	5	0	0.508	4	11	0	0.041
EL4132	EL4132	HOLT CREEK	44	12	3	1	0.522	2	7	0	0.091
EL4133	EL4133	HOLT CREEK	44	13	3	1	0.533	2	8	0	0.021
LP1170	LP1170	BACHELOR BR TO EIGHT MILE CR.	47	9	3	0	0.989	2	5	0	0.445
LP1171	LP1171	LOST CREEK	27	13	5	1	0.943	1	10	0	0.772
LP1172	LP1172	SHELL CREEK	27	2	1	0	1.000	0	1	0	0.000
LP1173	LP1173	SHELL CREEK	47	7	3	0	1.000	1	4	0	0.231
LP2174	LP2174	SALT CREEK	47	11	4	0	0.895	2	7	0	0.092
LP2175	LP2175	WAHOO CREEK	47	15	7	0	0.806	5	9	0	0.021
LP2176	LP2176	BATES BRANCH	47	4	1	0	0.557	2	1	0	0.226

Table 7. continued.

STORET	NDEQ_ID	STRMNAME	ECOREG	Numnatsp	Numnatfm	Nssen	Ptole	Nsnbenth	Nslunk	Pintro	Pncarn
LP2177	LP2177	MIDDLE CREEK	47	12	4	0	0.993	1	9	0	0.070
LP2178	LP2178	MIDDLE OAK CREEK	47	4	2	0	0.808	2	2	0	0.781
LP2179	LP2179	COTTONWOOD CREEK	47	4	2	0	1.000	1	1	0	0.000
LP2180	LP2180	SILVER CREEK	47	6	3	0	1.000	1	3	0	0.101
LP2181	LP2181	OLIVE BRANCH CREEK	47	10	4	0	0.885	1	7	0	0.023
LP2182	LP2182	ROCK CREEK	47	8	3	0	0.986	1	5	0	0.248
LP2183	LP2183	CLEAR CREEK	47	18	8	0	0.869	3	12	0	0.332
LP2184	LP2184	SAND CREEK	47	11	3	0	0.947	4	6	0	0.052
LP2185	LP2185	DEE CREEK	47	8	3	0	0.894	2	4	0	0.288
LP2186	LP2186	WAHOO CREEK	47	7	3	0	1.000	1	4	0	0.345
LP2187	LP2178	ROCK CREEK	47	8	3	0	0.993	1	5	0	0.162
MT1148	MT1148	S. BRANCH PAPIILLION CREEK	47	4	2	0	1.000	1	2	0	0.080
MT1150	MT1150	BIG PAPIILLION CREEK	47	7	3	0	0.773	2	5	0	0.318
MT1151	MT1151	LONG CREEK	47	1	1	0	1.000	0	1	0	0.000
MT1152	MT1152	MILL CREEK	47	6	4	0	0.896	2	4	0	0.754
MT1153	MT1153	SILVER CREEK	47	4	2	0	0.943	1	2	0	0.019
MT1154	MT1154	COW CREEK	47	4	1	0	0.858	2	1	0	0.410
MT1156	MT1156	NORTH OMAHA CREEK	47	1	1	0	1.000	0	1	0	1.000
MT1157	MT1157	OMAHA CREEK	47	9	3	0	0.750	3	5	0	0.226
MT2158	MT2158	ELK CREEK	47	4	1	0	0.915	2	1	0	0.128
MT2159	MT2159	ELK CREEK	47	6	2	0	0.909	4	2	0	0.160
MT2160	MT2160	ELK CREEK	47	9	4	0	0.758	5	4	0	0.167
MT2161	MT2161	LIME CREEK	47	13	5	0	0.793	5	7	0	0.097
MT2162	MT2162	WEST BOW CREEK	47	14	7	0	0.508	3	9	0	0.056
MT2163	MT2163	UNNAMED TRIB. NORWEGIAN BOW CREEK	47	5	1	0	0.904	3	1	0	0.711
MT2164	MT2164	NORWEGIAN BOW CREEK	47	7	3	0	0.963	4	3	0	0.492
MT2165	MT2165	WEST BOW CREEK	47	10	4	0	0.647	4	6	0	0.113
MT2166	MT2166	LITTLE BAZILE CREEK	47	15	6	1	0.626	6	7	0	0.058
MT2167	MT2167	UNNAMED TRIB. BAZILE CREEK	47	10	4	2	0.701	4	3	0	0.453
MT2168	MT2168	BAZILE CREEK	47	20	8	1	0.533	3	13	0	0.101
NE1196	NE1196	BIG SLOUGH	47	5	2	0	1.000	1	2	0	0.685

Table 7. continued.

STORET	NDEQ_ID	STRMNAME	ECOREG	Numnatsp	Numnatfm	Nssen	Ptole	Nsnbenth	Nslunk	Pintro	Pncarn
NE1197	NE1197	WINNEBAGO CREEK	47	8	3	0	0.759	2	6	0	0.414
NE2198	NE2198	BIG NEMAHA RIVER	47	13	4	1	0.936	2	6	0	0.003
NE2199	NE2199	WHISKEY RUN	47	9	3	0	0.293	3	4	0	0.146
NE2200	NE2200	LONG BRANCH CREEK	47	6	3	0	0.982	1	3	0	0.053
NE2201	NE2201	UNNAMED TRIB. BALLS BRANCH	47	8	3	0	0.630	2	5	0	0.259
NE2202	NE2202	FOURMILE CREEK	47	12	4	0	0.861	2	9	0	0.230
NE2203	NE2203	MIDDLE BRANCH BIG NEMAHA RIVER	47	10	4	0	0.608	2	6	0	0.035
NE2204	NE2204	MUDDY CREEK	47	11	4	0	0.935	3	6	0	0.015
NE2205	NE2205	S. FORK BIG NEMAHA RIVER	47	15	5	0	0.758	3	10	0	0.015
NE2206	NE2206	N. FORK BIG NEMAHA RIVER	47	14	5	0	0.931	3	9	0	0.004
NE2207	NE2207	MID. BR. BIG NEMAHA RIVER	47	4	2	0	0.894	2	1	0	0.002
NE2208	NE2208	LITTLE MUDDY CREEK	47	12	4	0	0.640	4	7	0	0.057
NE2209	NE2209	HOOSIER CREEK	47	5	2	0	0.631	2	3	0	0.408
NE3210	NE3210	HOOPER CREEK	47	11	4	0	0.836	1	8	0	0.305
NE3211	NE3211	LITTLE NEMAHA RIVER	47	15	7	1	0.722	4	6	0	0.005
NE3212	NE3212	SAND CREEK	47	6	2	0	0.689	2	2	0	0.028
NE3213	NE3213	LITTLE NEMAHA RIVER	47	19	8	1	0.637	5	9	0	0.043

\*Ecoreg – Ecoregion

Numnatsp – Total number of native species

Numnatfm – Total number of native families

Nssen - Total number of sensitive species

Ptole - Proportion of tolerant species

Nsnbenth – Number of benthic species

Nslunk – Number of long-lived species

Pintro - Proportion of alien species

Pncarn – Proportion of carnivore species

Table 8. Table of fish metric scores collected for the Nebraska Stream Biological Monitoring Program, 2004-2005. Column headings are explained at end of table.

STORET	NDEQ_ID	STRMNAME	ECOREG*	Natstp	Natfam	Sensit	Tolrnt	Benthic	Longlive	Alien	Carn	IBI8
009560	LP1153	PAWNEE CREEK	47	10.00	10.00	0.00	0.00	8.21	10.00	10	10.00	72.76
009810	NE2185	LORES BRANCH	47	5.91	8.11	0.00	2.45	3.52	7.87	10	10.00	59.83
010087	LP1023	PAWNEE CREEK	47	5.24	6.33	0.00	1.11	1.70	6.23	10	10.00	50.77
010112	NE3193	INDIAN CREEK	47	5.91	8.11	0.00	5.88	10.00	3.94	10	10.00	67.31
EL1113	EL1113	MAPLE CREEK	47	3.04	2.68	2.34	1.15	2.78	1.43	10	0.00	29.28
EL1115	EL1115	PEBBLE CREEK	47	1.61	2.49	0.00	0.00	1.27	0.66	10	10.00	32.54
EL1116	EL1116	BELL CREEK	47	4.98	6.05	0.00	0.93	4.83	2.52	10	4.67	42.47
EL1117	EL1117	W. FORK MAPLE CREEK	47	1.98	2.71	0.00	0.00	3.53	0.00	10	0.00	22.79
EL1118	EL1118	E. FORK MAPLE CREEK	47	3.84	2.65	0.00	1.32	6.81	1.90	10	10.00	45.64
EL1119	EL1119	ELKHORN RIVER	47	9.26	6.67	2.73	3.04	5.45	7.06	10	1.20	56.75
EL1120	EL1120	ELKHORN RIVER	47	8.52	6.67	2.73	0.87	6.36	5.29	10	0.47	51.13
EL1121	EL1121	HUMBUG CREEK	47	8.24	7.47	0.00	1.56	8.41	10.00	10	8.27	67.45
EL1122	EL1122	ELKHORN RIVER	47	7.04	5.00	2.73	3.45	4.55	4.71	10	0.27	47.16
EL1123	EL1123	UNION CREEK	47	3.97	5.08	0.00	0.00	1.86	3.90	10	1.73	33.18
EL2124	EL2124	MIDDLE LOGAN CREEK	47	3.15	1.86	0.00	1.47	4.18	1.11	10	7.73	36.88
EL3125	EL3125	DRY CREEK	47	8.03	9.79	9.55	4.99	10.00	4.77	10	5.00	77.66
EL4126	EL4126	BATTLE CREEK	47	4.14	7.03	0.00	0.00	2.85	3.12	10	10.00	46.42
EL4127	EL4127	ELKHORN RIVER	47	8.89	6.67	2.79	2.89	6.36	5.29	10	2.20	56.38
EL4128	EL4128	ELKHORN RIVER	47	8.89	6.67	1.96	2.74	6.36	7.65	10	2.13	58.00
EL4129	EL4129	CLEARWATER CREEK	42	8.06	8.10	9.06	5.35	8.53	6.70	10	1.08	71.10
EL4130	EL4130	ELKHORN RIVER	42	9.75	5.67	6.23	4.03	6.67	10.00	10	4.72	71.33
EL4131	EL4131	ELKHORN RIVER	44	9.39	6.51	0.00	6.15	6.67	10.00	10	1.64	62.95
EL4132	EL4132	HOLT CREEK	44	8.64	5.27	4.93	5.98	4.70	10.00	10	3.64	66.45
EL4133	EL4133	HOLT CREEK	44	8.73	4.86	4.53	5.84	4.26	10.00	10	0.84	61.32
LP1170	LP1170	BACHELOR BR TO EIGHT MILE CR.	47	3.74	3.86	0.00	0.13	2.65	3.41	10	10.00	42.23
LP1171	LP1171	LOST CREEK	27	9.43	8.85	4.97	0.71	2.37	10.00	10	10.00	70.41
LP1172	LP1172	SHELL CREEK	27	1.83	2.32	0.00	0.00	0.00	1.95	10	0.00	20.11
LP1173	LP1173	SHELL CREEK	47	4.76	5.96	0.00	0.00	2.28	4.87	10	10.00	47.33
LP2174	LP2174	SALT CREEK	47	4.07	3.88	0.00	1.24	1.91	4.12	10	6.13	39.19
LP2175	LP2175	WAHOO CREEK	47	5.56	7.61	0.00	2.28	5.43	5.29	10	1.40	46.96
LP2176	LP2176	BATES BRANCH	47	2.18	1.64	0.00	5.21	3.56	0.93	10	10.00	41.91

Table 8. continued.

STORET	NDEQ_ID	STRMNAME	ECOREG	Natssp	Natfam	Sensit	ToIrrt	Benthic	Longlive	Alien	Carn	IBI8
LP2177	LP2177	MIDDLE CREEK	47	4.54	4.72	0.00	0.08	1.20	5.52	10	4.67	38.42
LP2178	LP2178	MIDDLE OAK CREEK	47	3.96	5.43	0.00	2.26	7.07	3.96	10	10.00	53.35
LP2179	LP2179	COTTONWOOD CREEK	47	4.42	5.93	0.00	0.00	4.05	2.32	10	0.00	33.40
LP2180	LP2180	SILVER CREEK	47	3.93	5.77	0.00	0.00	2.18	3.49	10	6.73	40.14
LP2181	LP2181	OLIVE BRANCH CREEK	47	6.12	7.25	0.00	1.35	2.02	7.49	10	1.53	44.72
LP2182	LP2182	ROCK CREEK	47	5.42	5.94	0.00	0.16	2.27	6.05	10	10.00	49.80
LP2183	LP2183	CLEAR CREEK	47	8.26	10.00	0.00	1.54	4.41	9.15	10	10.00	66.69
LP2184	LP2184	SAND CREEK	47	6.55	5.31	0.00	0.62	7.84	6.21	10	3.47	50.01
LP2185	LP2185	DEE CREEK	47	5.30	5.82	0.00	1.25	4.42	4.71	10	10.00	51.87
LP2186	LP2186	WAHOO CREEK	47	3.49	4.53	0.00	0.00	1.61	3.35	10	10.00	41.22
LP2187	LP2178	ROCK CREEK	47	8.17	8.34	0.00	0.08	3.67	10.00	10	10.00	62.83
MT1148	MT1148	S. BRANCH PAPILLION CREEK	47	2.43	3.60	0.00	0.00	2.00	2.12	10	5.33	31.86
MT1150	MT1150	BIG PAPILLION CREEK	47	3.47	4.51	0.00	2.67	3.20	4.17	10	10.00	47.52
MT1151	MT1151	LONG CREEK	47	0.93	2.58	0.00	0.00	0.00	1.82	10	0.00	19.18
MT1152	MT1152	MILL CREEK	47	5.48	10.00	0.00	1.22	6.42	7.11	10	10.00	62.79
MT1153	MT1153	SILVER CREEK	47	4.28	5.78	0.00	0.67	3.89	4.42	10	1.27	37.89
MT1154	MT1154	COW CREEK	47	2.43	1.80	0.00	1.67	4.01	1.06	10	10.00	38.73
MT1156	MT1156	NORTH OMAHA CREEK	47	1.04	2.83	0.00	0.00	0.00	2.13	10	10.00	32.51
MT1157	MT1157	OMAHA CREEK	47	4.77	4.79	0.00	2.94	5.17	4.50	10	10.00	52.71
MT2158	MT2158	ELK CREEK	47	2.34	1.74	0.00	1.00	3.85	1.01	10	8.53	35.61
MT2159	MT2159	ELK CREEK	47	2.22	2.27	0.00	1.07	4.57	1.18	10	10.00	39.13
MT2160	MT2160	ELK CREEK	47	4.94	6.59	0.00	2.85	8.95	3.76	10	10.00	58.86
MT2161	MT2161	LIME CREEK	47	10.00	10.00	0.00	2.44	10.00	10.00	10	6.47	73.63
MT2162	MT2162	WEST BOW CREEK	47	6.53	9.97	0.00	5.79	4.49	6.99	10	3.73	59.37
MT2163	MT2163	UNNAMED TRIB. NORWEGIAN BOW CREEK	47	10.00	7.58	0.00	1.13	10.00	10.00	10	10.00	73.39
MT2164	MT2164	NORWEGIAN BOW CREEK	47	5.97	7.20	0.00	0.44	10.00	4.86	10	10.00	60.58
MT2165	MT2165	WEST BOW CREEK	47	3.77	4.70	0.00	4.15	4.76	3.66	10	7.53	48.21
MT2166	MT2166	LITTLE BAZILE CREEK	47	5.85	7.28	2.01	4.40	7.41	4.44	10	3.87	56.58
MT2167	MT2167	UNNAMED TRIB. BAZILE CREEK	47	10.00	10.00	10.00	3.52	10.00	10.00	10	10.00	91.90
MT2168	MT2168	BAZILE CREEK	47	7.41	6.69	1.19	5.49	2.73	7.65	10	6.73	59.86
NE1196	NE1196	BIG SLOUGH	47	3.85	4.41	0.00	0.00	2.63	2.84	10	10.00	42.16

Table 8. continued.

STORET	NDEQ_ID	STRMNAME	ECOREG	Natsp	Natfam	Sensit	Tolrnt	Benthic	Longlive	Alien	Carn	IBI8
NE1197	NE1197	WINNEBAGO CREEK	47	9.62	9.49	0.00	2.84	9.00	10.00	10	10.00	76.18
NE2198	NE2198	BIG NEMAHA RIVER	47	4.81	3.33	1.10	0.75	1.82	3.53	10	0.20	31.94
NE2199	NE2199	WHISKEY RUN	47	8.57	7.89	0.00	8.32	10.00	7.51	10	9.73	77.51
NE2200	NE2200	LONG BRANCH CREEK	47	2.47	3.82	0.00	0.21	1.31	2.02	10	3.53	29.22
NE2201	NE2201	UNNAMED TRIB. BALLS BRANCH	47	8.82	8.87	0.00	4.35	8.07	10.00	10	10.00	75.15
NE2202	NE2202	FOURMILE CREEK	47	5.57	5.67	0.00	1.64	2.98	6.95	10	10.00	53.50
NE2203	NE2203	MIDDLE BRANCH BIG NEMAHA RIVER	47	3.94	4.90	0.00	4.61	2.50	3.85	10	2.33	40.17
NE2204	NE2204	MUDDY CREEK	47	4.07	3.70	0.00	0.76	2.73	3.53	10	1.00	32.24
NE2205	NE2205	S. FORK BIG NEMAHA RIVER	47	5.56	4.47	0.00	2.85	2.73	5.88	10	1.00	40.60
NE2206	NE2206	N. FORK BIG NEMAHA RIVER	47	5.19	4.69	0.00	0.81	2.76	5.29	10	0.27	36.26
NE2207	NE2207	MID. BR. BIG NEMAHA RIVER	47	2.65	3.88	0.00	1.25	4.42	1.18	10	0.13	29.38
NE2208	NE2208	LITTLE MUDDY CREEK	47	7.41	7.31	0.00	4.24	8.17	7.57	10	3.80	60.60
NE2209	NE2209	HOOSIER CREEK	47	3.71	4.28	0.00	4.34	5.03	4.06	10	10.00	51.77
NE3210	NE3210	HOOPER CREEK	47	5.26	5.83	0.00	1.93	1.54	6.39	10	10.00	51.18
NE3211	NE3211	LITTLE NEMAHA RIVER	47	5.56	5.92	1.21	3.27	3.64	3.53	10	0.33	41.81
NE3212	NE3212	SAND CREEK	47	4.50	4.31	0.00	3.66	5.09	2.75	10	1.87	40.21
NE3213	NE3213	LITTLE NEMAHA RIVER	47	7.04	6.67	1.10	4.27	4.55	5.29	10	2.87	52.22

\*Ecoreg – Ecoregion

Natsp – Native species richness score (0-10)

Natfam – Native family richness score (0-10)

Sensit – Sensitive species richness score (0-10)

Tolrnt – Percent tolerant score (0-10)

Benthic – Native Benthic species richness score (0-10)

Longlive – Native long-lived species richness score (0-10)

Carn – Percent carnivores scores (0-10)

IBI8 – Index of biotic integrity scores (total of fish metric scores)

Table 9. Summary of macroinvertebrate taxa and total number collected from the Nebraska Stream Biological Monitoring Program, 2004-2005. Macroinvertebrates names are sorted alphabetically by Class, Order, and Family.

Class	Order	Family	Final ID	Total counts	Percent
Arachnida			Arachnida	24	0.007
Crustacea	Amphipoda	Crangonyctidae	Crangonyx	36	0.010
Crustacea	Amphipoda	Talitridae	Hyalella azteca	7519	2.064
Crustacea	Decapoda	Cambaridae	Orconectes	24	0.007
Crustacea	Decapoda	Cambaridae	Cambarus	5	0.001
Crustacea	Isopoda	Asellidae	Caecidotea	2423	0.665
Gastropoda	Basommatophora	Lymnaeidae	Fossaria	176	0.048
Gastropoda	Basommatophora	Lymnaeidae	Stagnicola	55	0.015
Gastropoda	Pulmonata	Ancylidae	Ferrissia	53	0.015
Gastropoda	Pulmonata	Physidae	Physa	7992	2.194
Gastropoda	Pulmonata	Planorbidae	Helisoma	233	0.064
Gastropoda	Pulmonata	Planorbidae	Gyraulus	14	0.004
Hirudinea	Arhynchobdellida	Erpobdellidae	Erpobdella punctata	33	0.009
Hirudinea	Pharyngobdellida	Erpobdellidae	Mooreobdella microstoma	372	0.102
Hirudinea	Rhynchobdellida	Glossiphoniidae	Placobdella	54	0.015
Hirudinea	Rhynchobdellida	Glossiphoniidae	Glossiphonia complanata	51	0.014
Hirudinea	Rhynchobdellida	Glossiphoniidae	Helobdella triserialis	51	0.014
Hirudinea	Rhynchobdellida	Glossiphoniidae	Placobdella parasitica	46	0.013
Hirudinea	Rhynchobdellida	Glossiphoniidae	Placobdella ornata	43	0.012
Hirudinea	Rhynchobdellida	Glossiphoniidae	Helobdella stagnalis	41	0.011
Hirudinea	Rhynchobdellida	Glossiphoniidae	Desserobdella picta	2	0.001
Hirudinea	Rhynchobdellida	Glossiphoniidae	Placobdella papillifera	2	0.001
Insecta	Coleoptera	Dryopidae	Helichus	480	0.132
Insecta	Coleoptera	Dytiscidae	Hydroporus	306	0.084
Insecta	Coleoptera	Dytiscidae	Ilybius	40	0.011
Insecta	Coleoptera	Dytiscidae	Laccophilus	33	0.009
Insecta	Coleoptera	Dytiscidae	Liodessus affinis	6	0.002
Insecta	Coleoptera	Dytiscidae	Agabus	4	0.001
Insecta	Coleoptera	Dytiscidae	Dytiscidae	4	0.001
Insecta	Coleoptera	Dytiscidae	Coptotomus	1	0.000
Insecta	Coleoptera	Elmidae	Dubiraphia	5979	1.641
Insecta	Coleoptera	Elmidae	Stenelmis	2112	0.580
Insecta	Coleoptera	Elmidae	Macronychus glabratus	233	0.064
Insecta	Coleoptera	Elmidae	Microcyloepus	31	0.009
Insecta	Coleoptera	Gyrinidae	Dineutus	34	0.009
Insecta	Coleoptera	Gyrinidae	Gyrinus	19	0.005
Insecta	Coleoptera	Halipidae	Peltodytes	560	0.154
Insecta	Coleoptera	Hydrophilidae	Tropisternus	2296	0.630
Insecta	Coleoptera	Hydrophilidae	Berosus	1139	0.313
Insecta	Coleoptera	Hydrophilidae	Enochrus	99	0.027
Insecta	Coleoptera	Hydrophilidae	Paracymus	57	0.016
Insecta	Coleoptera	Hydrophilidae	Hydrophilidae	41	0.011
Insecta	Coleoptera	Hydrophilidae	Laccobius	11	0.003

Table 9. continued.

Class	Order	Family	Final ID	Total counts	Percent
Insecta	Coleoptera	Hydrophilidae	Culicidae	4	0.001
Insecta	Coleoptera	Hydrophilidae	Helophorus	2	0.001
Insecta	Coleoptera	Scirtidae	Scirtes	200	0.055
Insecta	Diptera	Ceratopogonidae	Ceratopogonidae	749	0.206
Insecta	Diptera	Ceratopogonidae	Forcipomyia	16	0.004
Insecta	Diptera	Ceratopogonidae	Atrichopogon	12	0.003
Insecta	Diptera	Ceratopogonidae	Sphaeromias	9	0.002
Insecta	Diptera	Ceratopogonidae	Palpomyia	6	0.002
Insecta	Diptera	Ceratopogonidae	Dasyhelea	5	0.001
Insecta	Diptera	Ceratopogonidae	Mallochohelea	2	0.001
Insecta	Diptera	Ceratopogonidae	Bezzia	1	0.000
Insecta	Diptera	Chironomidae	Tanytarsus	6254	1.717
Insecta	Diptera	Chironomidae	Rheotanytarsus	5585	1.533
Insecta	Diptera	Chironomidae	Polypedilum tritum	4984	1.368
Insecta	Diptera	Chironomidae	Polypedilum	2099	0.576
Insecta	Diptera	Chironomidae	Thienemannimyia	2008	0.551
Insecta	Diptera	Chironomidae	Cricotopus bicinctus	1757	0.482
Insecta	Diptera	Chironomidae	Procladius	1743	0.479
Insecta	Diptera	Chironomidae	Stictochironomus	1602	0.440
Insecta	Diptera	Chironomidae	Orthocladius	1358	0.373
Insecta	Diptera	Chironomidae	Tanypus	1130	0.310
Insecta	Diptera	Chironomidae	Chironomus	1062	0.292
Insecta	Diptera	Chironomidae	Polypedilum scalaenum	963	0.264
Insecta	Diptera	Chironomidae	Polypedilum fallax	879	0.241
Insecta	Diptera	Chironomidae	Dicrotendipes	869	0.239
Insecta	Diptera	Chironomidae	Paratanytarsus	837	0.230
Insecta	Diptera	Chironomidae	Cryptochironomus	714	0.196
Insecta	Diptera	Chironomidae	Cricotopus tremulus	700	0.192
Insecta	Diptera	Chironomidae	Ablabesmyia	677	0.186
Insecta	Diptera	Chironomidae	Glyptotendipes	612	0.168
Insecta	Diptera	Chironomidae	Cryptotendipes	598	0.164
Insecta	Diptera	Chironomidae	Cladotanytarsus	552	0.152
Insecta	Diptera	Chironomidae	Saetheria	550	0.151
Insecta	Diptera	Chironomidae	Orthoclaadiinae	423	0.116
Insecta	Diptera	Chironomidae	Rheocricotopus	271	0.074
Insecta	Diptera	Chironomidae	Paraphaenocladus	241	0.066
Insecta	Diptera	Chironomidae	Paracladopelma	218	0.060
Insecta	Diptera	Chironomidae	Pentaneura	184	0.051
Insecta	Diptera	Chironomidae	Polypedilum illinoense	166	0.046
Insecta	Diptera	Chironomidae	Labrundinia	160	0.044
Insecta	Diptera	Chironomidae	Paraleptophlebia	140	0.038
Insecta	Diptera	Chironomidae	Nanocladus	139	0.038
Insecta	Diptera	Chironomidae	Cricotopus	135	0.037
Insecta	Diptera	Chironomidae	Harnischia	119	0.033
Insecta	Diptera	Chironomidae	Thienemanniella	98	0.027



Table 9. continued.

Class	Order	Family	Final ID	Total counts	Percent
Insecta	Diptera	Chironomidae	Clinotanypus	93	0.026
Insecta	Diptera	Chironomidae	Larsia	90	0.025
Insecta	Diptera	Chironomidae	Chironomini	83	0.023
Insecta	Diptera	Chironomidae	Endochironomus	76	0.021
Insecta	Diptera	Chironomidae	Coelotanypus	71	0.019
Insecta	Diptera	Chironomidae	Chaetocladius	67	0.018
Insecta	Diptera	Chironomidae	Stenochironomus	59	0.016
Insecta	Diptera	Chironomidae	Paratendipes	55	0.015
Insecta	Diptera	Chironomidae	Pseudochironomus	53	0.015
Insecta	Diptera	Chironomidae	Brillia	42	0.012
Insecta	Diptera	Chironomidae	Zavreliomyia	42	0.012
Insecta	Diptera	Chironomidae	Parametricnemus	41	0.011
Insecta	Diptera	Chironomidae	Polypedilum convictum	39	0.011
Insecta	Diptera	Chironomidae	Cricotopus sylvestris	36	0.010
Insecta	Diptera	Chironomidae	Lopescladius	30	0.008
Insecta	Diptera	Chironomidae	Parachironomus	30	0.008
Insecta	Diptera	Chironomidae	Xenochironomus	30	0.008
Insecta	Diptera	Chironomidae	Microtendipes	23	0.006
Insecta	Diptera	Chironomidae	Parakiefferiella	23	0.006
Insecta	Diptera	Chironomidae	Tribelos	23	0.006
Insecta	Diptera	Chironomidae	Limnophyes	20	0.005
Insecta	Diptera	Chironomidae	Cricotopus trifascia	19	0.005
Insecta	Diptera	Chironomidae	Conchapelopia	14	0.004
Insecta	Diptera	Chironomidae	Paralauterborniella	14	0.004
Insecta	Diptera	Chironomidae	Tvetenia	13	0.004
Insecta	Diptera	Chironomidae	Tanypodinae	11	0.003
Insecta	Diptera	Chironomidae	Phaenopsectra	8	0.002
Insecta	Diptera	Chironomidae	Psectrocladius	8	0.002
Insecta	Diptera	Chironomidae	Robackia demeijerei	8	0.002
Insecta	Diptera	Chironomidae	Axarus	6	0.002
Insecta	Diptera	Chironomidae	Eukiefferiella	2	0.001
Insecta	Diptera	Chironomidae	Gillotia	2	0.001
Insecta	Diptera	Chironomidae	Chernovskiiia	1	0.000
Insecta	Diptera	Chironomidae	Cladopelma	1	0.000
Insecta	Diptera	Chironomidae	Micropsectra	1	0.000
Insecta	Diptera	Culicidae	Anopheles	273	0.075
Insecta	Diptera	Culicidae	Culex	3	0.001
Insecta	Diptera	Dixidae	Dixella	7	0.002
Insecta	Diptera	Empididae	Hemerodromia	234	0.064
Insecta	Diptera	Ephydriidae	Ephydra	152	0.042
Insecta	Diptera	Muscidae	Muscidae	30	0.008
Insecta	Diptera	Muscidae	Limnophora	11	0.003
Insecta	Diptera	Psychodidae	Psychoda	4	0.001
Insecta	Diptera	Psychodidae	Pericoma	3	0.001
Insecta	Diptera	Sciomyzidae	Sciomyzidae	3	0.001

Table 9. continued.

Class	Order	Family	Final ID	Total counts	Percent
Insecta	Diptera	Simuliidae	Simuliidae	109380	30.029
Insecta	Diptera	Stratiomyidae	Stratiomyidae	14	0.004
Insecta	Diptera	Stratiomyidae	Caloparyphus	1	0.000
Insecta	Diptera	Tabanidae	Chrysops	41	0.011
Insecta	Diptera	Tabanidae	Tabanus	24	0.007
Insecta	Diptera	Tipulidae	Tipula	113	0.031
Insecta	Diptera	Tipulidae	Limonia	37	0.010
Insecta	Diptera	Tipulidae	Hexatoma	6	0.002
Insecta	Diptera	Tipulidae	Ormosia	5	0.001
Insecta	Diptera	Tipulidae	Erioptera	4	0.001
Insecta	Diptera	Tipulidae	Limnophila	4	0.001
Insecta	Diptera	Tipulidae	Pilaria	4	0.001
Insecta	Diptera	Tipulidae	Antocha	2	0.001
Insecta	Diptera	Tipulidae	Pseudolimnophila	2	0.001
Insecta	Ephemeroptera	Baetidae	Fallceon	5327	1.462
Insecta	Ephemeroptera	Baetidae	Baetis	4613	1.266
Insecta	Ephemeroptera	Baetidae	Paracloeodes	1164	0.320
Insecta	Ephemeroptera	Baetidae	Callibaetis	512	0.141
Insecta	Ephemeroptera	Baetidae	Acentrella	200	0.055
Insecta	Ephemeroptera	Baetidae	Pseudocloeon	192	0.053
Insecta	Ephemeroptera	Baetidae	Apobaetis lakota	121	0.033
Insecta	Ephemeroptera	Baetidae	Labiobaetis	59	0.016
Insecta	Ephemeroptera	Baetidae	Camelobaetidius	56	0.015
Insecta	Ephemeroptera	Baetidae	Centroptilum	11	0.003
Insecta	Ephemeroptera	Caenidae	Caenis	4757	1.306
Insecta	Ephemeroptera	Caenidae	Amercaenis	44	0.012
Insecta	Ephemeroptera	Caenidae	Brachycercus	34	0.009
Insecta	Ephemeroptera	Caenidae	Cercobrachys	31	0.009
Insecta	Ephemeroptera	Ephemeridae	Hexagenia	133	0.037
Insecta	Ephemeroptera	Heptageniidae	Heptagenia	1675	0.460
Insecta	Ephemeroptera	Heptageniidae	Stenacron interpunctatum	867	0.238
Insecta	Ephemeroptera	Heptageniidae	Leucrocuta	64	0.018
Insecta	Ephemeroptera	Heptageniidae	Stenonema tripunctatum	61	0.017
Insecta	Ephemeroptera	Heptageniidae	Stenonema terminatum	25	0.007
Insecta	Ephemeroptera	Heptageniidae	Stenonema mexicanum	8	0.002
Insecta	Ephemeroptera	Heptageniidae	Stenonema femoratum	7	0.002
Insecta	Ephemeroptera	Heptageniidae	Stenonema	4	0.001
Insecta	Ephemeroptera	Heptageniidae	Stenonema integrum	4	0.001
Insecta	Ephemeroptera	Oligoneuriidae	Isonychia	1072	0.294
Insecta	Ephemeroptera	Polymitarcyidae	Tortopus	4	0.001
Insecta	Ephemeroptera	Tricorythidae	Tricorythodes	3251	0.893
Insecta	Hemiptera	Belostomatidae	Belostoma	75	0.021
Insecta	Hemiptera	Corixidae	Trichocorixa	1387	0.381
Insecta	Hemiptera	Corixidae	Corixidae	1236	0.339

Table 9. continued.

Class	Order	Family	Final ID	Total counts	Percent
Insecta	Hemiptera	Corixidae	Sigara	273	0.075
Insecta	Hemiptera	Corixidae	Palmacorixa	34	0.009
Insecta	Hemiptera	Gerridae	Gerridae	36	0.010
Insecta	Hemiptera	Gerridae	Rheumatobates	28	0.008
Insecta	Hemiptera	Gerridae	Trepobates	17	0.005
Insecta	Hemiptera	Gerridae	Metrobates	6	0.002
Insecta	Hemiptera	Mesoveliidae	Mesovelia	74	0.020
Insecta	Hemiptera	Naucoridae	Ambrysus	224	0.061
Insecta	Hemiptera	Nepidae	Ranatra	1	0.000
Insecta	Hemiptera	Notonectidae	Notonecta	2	0.001
Insecta	Hemiptera	Pleidae	Neoplea striola	19	0.005
Insecta	Hemiptera	Pleidae	Paraplea	3	0.001
Insecta	Hemiptera	Veliidae	Rhagovelia	259	0.071
Insecta	Hemiptera	Veliidae	Microvelia	136	0.037
Insecta	Megaloptera	Corydalidae	Corydalis cornutus	22	0.006
Insecta	Megaloptera	Corydalidae	Nigronia	2	0.001
Insecta	Megaloptera	Corydalidae	Chauliodes	1	0.000
Insecta	Megaloptera	Sialidae	Sialis	316	0.087
Insecta	Odonata	Aeshnidae	Nasiaeschna pentacantha	197	0.054
Insecta	Odonata	Aeshnidae	Aeschna	33	0.009
Insecta	Odonata	Aeshnidae	Anax	3	0.001
Insecta	Odonata	Aeshnidae	Boyeria	1	0.000
Insecta	Odonata	Calopterygidae	Hetaerina	1053	0.289
Insecta	Odonata	Calopterygidae	Calopteryx	183	0.050
Insecta	Odonata	Calopterygidae	Cambaridae	9	0.002
Insecta	Odonata	Coenagrionidae	Enallagma	2653	0.728
Insecta	Odonata	Coenagrionidae	Argia	859	0.236
Insecta	Odonata	Coenagrionidae	Amphiagrion	1	0.000
Insecta	Odonata	Cordulegastridae	Epithea princeps	1	0.000
Insecta	Odonata	Gomphidae	Gomphus	135	0.037
Insecta	Odonata	Gomphidae	Ophiogomphus	63	0.017
Insecta	Odonata	Gomphidae	Progomphus	54	0.015
Insecta	Odonata	Gomphidae	Dromogomphus	24	0.007
Insecta	Odonata	Libellulidae	Plathemis	680	0.187
Insecta	Odonata	Libellulidae	Libellula	28	0.008
Insecta	Odonata	Libellulidae	Erythemis	3	0.001
Insecta	Odonata	Libellulidae	Perithemis	1	0.000
Insecta	Plecoptera	Perlidae	Phasganophora	4	0.001
Insecta	Plecoptera	Perlidae	Acroneuria abnormis	1	0.000
Insecta	Plecoptera	Pteronarcyidae	Pteronarcys	3	0.001
Insecta	Trichoptera	Brachycentridae	Brachycentridae	23	0.006
Insecta	Trichoptera	Helicopsychidae	Helicopsyche	199	0.055
Insecta	Trichoptera	Hydropsychidae	Cheumatopsyche	8417	2.311
Insecta	Trichoptera	Hydropsychidae	Hydropsyche betteni	4035	1.108
Insecta	Trichoptera	Hydropsychidae	Hydropsyche simulans	2931	0.805

Table 9. continued.

Class	Order	Family	Final ID	Total counts	Percent
Insecta	Trichoptera	Hydropsychidae	Potamyia flava	2487	0.683
Insecta	Trichoptera	Hydropsychidae	Hydropsyche occidentalis	528	0.145
Insecta	Trichoptera	Hydropsychidae	Ceratopsyche morosa	193	0.053
Insecta	Trichoptera	Hydropsychidae	Hydropsyche orris	73	0.020
Insecta	Trichoptera	Hydropsychidae	Hydropsyche	60	0.016
Insecta	Trichoptera	Hydropsychidae	Hydropsyche bidens	46	0.013
Insecta	Trichoptera	Hydropsychidae	Ceratopsyche bronta	9	0.002
Insecta	Trichoptera	Hydropsychidae	Ceratopsyche	7	0.002
Insecta	Trichoptera	Hydroptilidae	Hydroptila	343	0.094
Insecta	Trichoptera	Hydroptilidae	Ochrotrichia	45	0.012
Insecta	Trichoptera	Hydroptilidae	Mayatrichia	7	0.002
Insecta	Trichoptera	Leptoceridae	Nectopsyche diarina	570	0.156
Insecta	Trichoptera	Leptoceridae	Nectopsyche	396	0.109
Insecta	Trichoptera	Leptoceridae	Oecetis	22	0.006
Insecta	Trichoptera	Leptoceridae	Ceraclea	2	0.001
Insecta	Trichoptera	Leptoceridae	Triadenodes	2	0.001
Insecta	Trichoptera	Polycentropodidae	Polycentropus	661	0.181
Insecta	Trichoptera	Polycentropodidae	Neureclipsis	4	0.001
Oligochaeta	Branchiobdellida	Branchiobdellidae	Cambarincola	2	0.001
Oligochaeta	Haplotaxida	Enchytraeidae	Enchytraeidae	2	0.001
Oligochaeta	Haplotaxida	Lumbricidae	Lumbricidae	14	0.004
Oligochaeta	Haplotaxida	Naididae	Dero	296	0.081
Oligochaeta	Haplotaxida	Naididae	Nais variabilis	129	0.035
Oligochaeta	Haplotaxida	Naididae	Dero digitata	120	0.033
Oligochaeta	Haplotaxida	Naididae	Nais pardalis	52	0.014
Oligochaeta	Haplotaxida	Naididae	Nais	40	0.011
Oligochaeta	Haplotaxida	Naididae	Ophidonais serpentina	34	0.009
Oligochaeta	Haplotaxida	Naididae	Nais communis	23	0.006
Oligochaeta	Haplotaxida	Naididae	Nais behningi	2	0.001
Oligochaeta	Haplotaxida	Tubificidae	Tubificidae	3234	0.888
Oligochaeta	Haplotaxida	Tubificidae	Branchiura sowerbyi	68	0.019
Oligochaeta	Haplotaxida	Tubificidae	Limnodrilus	12	0.003
Oligochaeta	Haplotaxida	Tubificidae	Aulodrilus	10	0.003
Oligochaeta	Haplotaxida	Tubificidae	Ilyodrilus templetoni	7	0.002
Oligochaeta	Haplotaxida	Tubificidae	Limnodrilus udekemianus	7	0.002
Oligochaeta	Haplotaxida	Tubificidae	Quistradrilus multisetosus	3	0.001
Ologochaeta	Haplotaxida	Tubificidae	Limnodrilus hoffmeisteri	223	0.061
Pelecypoda	Unionoida	Unionidae	Unionidae	1	0.000
Pelecypoda	Veneroida	Pisidiidae	Musculium transversum	2431	0.667
Pelecypoda	Veneroida	Pisidiidae	Pisidium	611	0.168
Pelecypoda	Veneroida	Sphaeriidae	Sphaeridium	114269	31.371
Turbellaria	Tricladida	Planariidae	Dugesia tigrina	2101	0.577
			Total taxa collected: 264		

Table 10. Table of macroinvertebrate raw metric values collected from the Nebraska Stream Biological Monitoring Program, 2004-2005. Column headings are explained at end of table.

STORET	NDEQ_ID	STRMNAME	COLLDATE	ECOREG	STR_CLASS	TotalTax	EPTTax	HBI	Dom01Pct
009560	LP1153	PAWNEE CREEK	09-02-2004	47	WB	58	13	5.72	20.56
009810	NE2185	LORES BRANCH	07-27-2004	47	WA	32	6	5.97	60.50
010087	LP1023	PAWNEE CREEK	08-19-2004	47	WB	56	13	5.32	28.93
010112	NE3193	INDIAN CREEK	07-28-2004	47	WA	54	13	6.03	23.63
010112	NE3193	INDIAN CREEK	07-28-2004	47	WA	54	13	6.03	23.63
EL1113	EL1113	MAPLE CREEK	09-14-2005	47	WA	31	11	6.49	20.79
EL1115	EL1115	PEBBLE CREEK	07-21-2005	47	WA	24	6	6.37	16.01
EL1116	EL1116	BELL CREEK	09-21-2005	47	WB	34	6	5.32	38.08
EL1117	EL1117	W. FORK MAPLE CREEK	08-05-2005	47	WB	13	3	4.66	47.37
EL1118	EL1118	E. FORK MAPLE CREEK	08-05-2005	47	WB	27	6	5.18	34.93
EL1119	EL1119	ELKHORN RIVER	08-08-2005	47	WA	22	8	6.15	21.20
EL1120	EL1120	ELKHORN RIVER	09-18-2005	47	WA	22	9	7.57	42.69
EL1121	EL1121	HUMBUG CREEK	08-08-2005	47	WB	46	11	5.15	31.48
EL1122	EL1122	ELKHORN RIVER	08-15-2005	47	WA	12	7	7.23	41.98
EL1123	EL1123	UNION CREEK	08-10-2005	47	WB	13	0	6.41	76.49
EL2124	EL2124	MIDDLE LOGAN CREEK	08-30-2005	47	WB	31	10	5.68	28.84
EL3125	EL3125	DRY CREEK	08-09-2005	47	WB	43	7	5.47	18.28
EL4126	EL4126	BATTLE CREEK	08-09-2005	47	WA	19	2	6.62	17.28
EL4127	EL4127	ELKHORN RIVER	08-26-2005	47	WA	33	13	6.32	35.98
EL4128	EL4128	ELKHORN RIVER	08-16-2005	47	WA	38	16	6.18	20.45
EL4129	EL4129	CLEARWATER CREEK	08-09-2005	42	WA	45	12	5.61	42.03
EL4130	EL4130	ELKHORN RIVER	08-16-2005	42	WA	1	0	6.00	100.00
EL4131	EL4131	ELKHORN RIVER	08-10-2005	44	WA	34	9	5.87	60.39
EL4132	EL4132	HOLT CREEK	08-11-2005	44	WA	35	8	5.94	39.93
EL4133	EL4133	HOLT CREEK	08-12-2005	44	WA	41	7	5.66	31.43
LP1170	LP1170	BACHELOR BR TO EIGHT MILE CR.	08-18-2004	47	WB	46	13	5.25	16.06
LP1171	LP1171	LOST CREEK	08-27-2004	27	WB	46	9	5.27	17.90
LP1172	LP1172	SHELL CREEK	08-31-2004	27	WB	14	0	6.51	284.52

Table 10. continued.

STORET	NDEQ_ID	STRMNAME	COLLDATE	ECOREG	STR_CLASS	TotalTax	EPTTax	HBI	Dom01Pct
LP1173	LP1173	SHELL CREEK	08-31-2004	47	WB	19	2	5.01	20.72
LP2174	LP2174	SALT CREEK	07-20-2004	47	WA	28	6	4.11	29.24
LP2175	LP2175	WAHOO CREEK	08-16-2004	47	WA	35	11	2.52	41.72
LP2176	LP2176	BATES BRANCH	07-21-2004	47	WB	33	6	5.80	48.66
LP2177	LP2177	MIDDLE CREEK	08-09-2004	47	WB	38	6	5.90	56.69
LP2178	LP2178	MIDDLE OAK CREEK	07-21-2004	47	WB	26	5	3.47	35.50
LP2179	LP2179	COTTONWOOD CREEK	08-02-2004	47	WB	40	3	3.78	43.65
LP2180	LP2180	SILVER CREEK	08-02-2004	47	WB	36	6	3.76	38.60
LP2181	LP2181	OLIVE BRANCH CREEK	07-19-2004	47	WB	37	6	6.83	48.91
LP2182	LP2182	ROCK CREEK	08-24-2004	47	WB	36	4	5.42	45.34
LP2183	LP2183	CLEAR CREEK	08-18-2004	47	WA	56	14	5.60	70.29
LP2184	LP2184	SAND CREEK	08-03-2004	47	WB	49	12	4.72	23.25
LP2185	LP2185	DEE CREEK	07-26-2004	47	WB	47	7	4.20	27.84
LP2186	LP2186	WAHOO CREEK	09-10-2004	47	WB	25	2	6.23	18.85
LP2187	LP2178	ROCK CREEK	07-16-2004	47	WB	42	7	5.56	25.84
MT1148	MT1148	S. BRANCH PAPILLION CREEK	07-05-2005	47	WB	32	8	5.64	152.23
MT1150	MT1150	BIG PAPILLION CREEK	09-15-2005	47	WA	30	13	5.16	45.61
MT1151	MT1151	LONG CREEK	07-20-2005	47	WB	31	8	5.47	26.96
MT1152	MT1152	MILL CREEK	08-04-2005	47	WB	36	7	5.82	15.89
MT1153	MT1153	SILVER CREEK	07-21-2005	47	WB	31	9	4.68	25.65
MT1154	MT1154	COW CREEK	08-24-2005	47	WB	30	6	5.46	33.85
MT1156	MT1156	NORTH OMAHA CREEK	08-24-2005	47	WB	20	8	5.29	31.05
MT1157	MT1157	OMAHA CREEK	08-25-2005	47	WB	23	10	5.24	38.07
MT2158	MT2158	ELK CREEK	09-08-2005	47	WB	24	4	5.64	74.09
MT2159	MT2159	ELK CREEK	08-25-2005	47	WB	20	7	4.89	33.45
MT2160	MT2160	ELK CREEK	09-09-2005	47	WB	23	9	5.70	40.12
MT2161	MT2161	LIME CREEK	08-30-2005	47	WB	21	5	6.73	47.86
MT2162	MT2162	WEST BOW CREEK	09-08-2005	47	WB	29	9	5.73	44.88

Table 10. continued.

STORET	NDEQ_ID	STRMNAME	COLLDATE*	ECOREG	STR_CLASS	TotalTax	EPPTax	HBI	Dom01Pct
MT2163	MT2163	UNNAMED TRIB. NORWEGIAN BOW CREEK	08-31-2005	47	WB	23	5	5.93	29.50
MT2164	MT2164	NORWEGIAN BOW CREEK	09-01-2005	47	WB	32	12	5.38	25.85
MT2165	MT2165	WEST BOW CREEK	09-01-2005	47	WB	42	15	5.80	31.71
MT2166	MT2166	LITTLE BAZILE CREEK	08-31-2005	47	WB	45	14	6.45	22.32
MT2167	MT2167	UNNAMED TRIB. BAZILE CREEK	08-31-2005	47	WB	36	8	5.81	19.64
MT2168	MT2168	BAZILE CREEK	09-07-2005	47	WA	45	15	7.93	53.53
NE1196	NE1196	BIG SLOUGH	09-09-2004	47	WB	44	7	5.75	67.82
NE1197	NE1197	WINNEBAGO CREEK	08-12-2004	47	WB	26	4	6.33	62.11
NE2198	NE2198	BIG NEMAHA RIVER	08-04-2004	47	WA	26	9	6.16	111.64
NE2199	NE2199	WHISKEY RUN	08-04-2004	47	WB	60	17	5.87	24.32
NE2200	NE2200	LONG BRANCH CREEK	08-11-2004	47	WA	34	11	3.82	26.69
NE2201	NE2201	UNNAMED TRIB. BALLS BRANCH	07-27-2004	47	WB	43	13	6.72	32.53
NE2202	NE2202	FOURMILE CREEK	08-06-2004	47	WA	60	13	6.01	20.11
NE2203	NE2203	MIDDLE BRANCH BIG NEMAHA RIVER	07-29-2004	47	WB	43	10	5.63	16.58
NE2204	NE2204	MUDDY CREEK	08-12-2004	47	WA	42	14	5.26	23.86
NE2205	NE2205	S. FORK BIG NEMAHA RIVER	08-03-2004	47	WA	52	21	6.15	38.90
NE2206	NE2206	N. FORK BIG NEMAHA RIVER	08-11-2004	47	WA	32	8	5.61	34.89
NE2207	NE2207	MID. BR. BIG NEMAHA RIVER	07-19-2004	47	WB	28	6	4.30	30.66
NE2208	NE2208	LITTLE MUDDY CREEK	08-04-2004	47	WB	56	17	6.61	46.91
NE2209	NE2209	HOOSIER CREEK	07-28-2004	47	WB	46	9	5.54	23.97
NE3210	NE3210	HOOPER CREEK	07-26-2004	47	WA	31	6	4.33	33.53
NE3211	NE3211	LITTLE NEMAHA RIVER	08-13-2004	47	WA	45	15	4.29	28.40
NE3212	NE3212	SAND CREEK	07-28-2004	47	WB	48	13	5.20	13.09
NE3213	NE3213	LITTLE NEMAHA RIVER	08-13-2004	47	WA	35	17	2.93	33.07

\*CollDate – Collection Date

Ecoreg – Ecoregion

Str\_Class - Stream classification: WA – Warm Water A, WB – Warm Water B, CA – Coldwater A, and CB – Coldwater B

TotalTax – Total macroinvertebrate species collected

Table 10. continued.

EPTTax – EPT (Ephemeropter, Plecoptera, and Trichoptera) Taxa collected  
HBI - Hilsenhoff Biotic Index (tolerance value are slightly modified for Nebraska)  
Dom01Pct - Percent value of dominant taxon in sample



Table 11. Table of macroinvertebrate metric scores collected for the Nebraska Stream Biological Monitoring Program, 2004-2005. Column headings are explained at end of table.

STORET	NDEQ_ID	STRMNAME	COLLDATE	TotTxSc	EPTSc	HBISc	Dom01Sc	ICI or BugSc
009560	LP1153	PAWNEE CREEK	09-02-2004	5	3	5	7	20
009810	NE2185	LORES BRANCH	07-27-2004	1	1	3	1	6
010087	LP1023	PAWNEE CREEK	08-19-2004	5	3	7	7	22
010112	NE3193	INDIAN CREEK	07-28-2004	5	3	3	7	18
010112	NE3193	INDIAN CREEK	07-28-2004	5	3	3	7	18
EL1113	EL1113	MAPLE CREEK	09-14-2005	1	3	1	7	12
EL1115	EL1115	PEBBLE CREEK	07-21-2005	1	1	1	7	10
EL1116	EL1116	BELL CREEK	09-21-2005	1	1	7	5	14
EL1117	EL1117	W. FORK MAPLE CREEK	08-05-2005	1	1	7	3	12
EL1118	EL1118	E. FORK MAPLE CREEK	08-05-2005	1	1	7	5	14
EL1119	EL1119	ELKHORN RIVER	08-08-2005	1	1	3	7	12
EL1120	EL1120	ELKHORN RIVER	09-18-2005	1	3	1	5	10
EL1121	EL1121	HUMBUG CREEK	08-08-2005	3	3	7	7	20
EL1122	EL1122	ELKHORN RIVER	08-15-2005	1	1	1	5	8
EL1123	EL1123	UNION CREEK	08-10-2005	1	1	1	1	4
EL2124	EL2124	MIDDLE LOGAN CREEK	08-30-2005	1	3	5	7	16
EL3125	EL3125	DRY CREEK	08-09-2005	3	1	5	7	16
EL4126	EL4126	BATTLE CREEK	08-09-2005	1	1	1	7	10
EL4127	EL4127	ELKHORN RIVER	08-26-2005	1	3	1	5	10
EL4128	EL4128	ELKHORN RIVER	08-16-2005	1	5	3	7	16
EL4129	EL4129	CLEARWATER CREEK	08-09-2005	3	5	5	5	18
EL4130	EL4130	ELKHORN RIVER	08-16-2005	1	1	3	1	6
EL4131	EL4131	ELKHORN RIVER	08-10-2005	1	1	5	1	8
EL4132	EL4132	HOLT CREEK	08-11-2005	1	1	3	5	10
EL4133	EL4133	HOLT CREEK	08-12-2005	1	1	5	7	14
LP1170	LP1170	BACHELOR BR TO EIGHT MILE CR.	08-18-2004	3	3	7	7	20
LP1171	LP1171	LOST CREEK	08-27-2004	3	1	7	7	18

Table 11. continued.

STORET	NDEQ_ID	STRMNAME	COLLDATE	TotTxSc	EPTSc	HBISc	Dom01Sc	ICI or BugSc
LP1172	LP1172	SHELL CREEK	08-31-2004	1	1	1	1	4
LP1173	LP1173	SHELL CREEK	08-31-2004	1	1	7	7	16
LP2174	LP2174	SALT CREEK	07-20-2004	1	1	7	7	16
LP2175	LP2175	WAHOO CREEK	08-16-2004	1	3	7	5	16
LP2176	LP2176	BATES BRANCH	07-21-2004	1	1	5	1	8
LP2177	LP2177	MIDDLE CREEK	08-09-2004	1	1	5	1	8
LP2178	LP2178	MIDDLE OAK CREEK	07-21-2004	1	1	7	5	14
LP2179	LP2179	COTTONWOOD CREEK	08-02-2004	1	1	7	3	12
LP2180	LP2180	SILVER CREEK	08-02-2004	1	1	7	5	14
LP2181	LP2181	OLIVE BRANCH CREEK	07-19-2004	1	1	1	1	4
LP2182	LP2182	ROCK CREEK	08-24-2004	1	1	5	3	10
LP2183	LP2183	CLEAR CREEK	08-18-2004	5	5	5	1	16
LP2184	LP2184	SAND CREEK	08-03-2004	3	3	7	7	20
LP2185	LP2185	DEE CREEK	07-26-2004	3	1	7	7	18
LP2186	LP2186	WAHOO CREEK	09-10-2004	1	1	1	7	10
LP2187	LP2178	ROCK CREEK	07-16-2004	1	1	5	7	14
MT1148	MT1148	S. BRANCH PAPILLION CREEK	07-05-2005	1	1	5	1	8
MT1150	MT1150	BIG PAPILLION CREEK	09-15-2005	1	3	7	3	14
MT1151	MT1151	LONG CREEK	07-20-2005	1	1	5	7	14
MT1152	MT1152	MILL CREEK	08-04-2005	1	1	5	7	14
MT1153	MT1153	SILVER CREEK	07-21-2005	1	3	7	7	18
MT1154	MT1154	COW CREEK	08-24-2005	1	1	5	7	14
MT1156	MT1156	NORTH OMAHA CREEK	08-24-2005	1	1	7	7	16
MT1157	MT1157	OMAHA CREEK	08-25-2005	1	3	7	5	16
MT2158	MT2158	ELK CREEK	09-08-2005	1	1	5	1	8
MT2159	MT2159	ELK CREEK	08-25-2005	1	1	7	7	16
MT2160	MT2160	ELK CREEK	09-09-2005	1	3	5	5	14

Table 11. continued.

STORET	NDEQ_ID	STRMNAME	COLLDATE	TotTxSc	EPTSc	HBISc	Dom01Sc	ICI or BugSc
MT2161	MT2161	LIME CREEK	08-30-2005	1	1	1	3	6
MT2162	MT2162	WEST BOW CREEK	09-08-2005	1	3	5	3	12
MT2163	MT2163	UNNAMED TRIB. NORWEGIAN BOW CREEK	08-31-2005	1	1	3	7	12
MT2164	MT2164	NORWEGIAN BOW CREEK	09-01-2005	1	3	7	7	18
MT2165	MT2165	WEST BOW CREEK	09-01-2005	1	5	5	7	18
MT2166	MT2166	LITTLE BAZILE CREEK	08-31-2005	3	5	1	7	16
MT2167	MT2167	UNNAMED TRIB. BAZILE CREEK	08-31-2005	1	1	5	7	14
MT2168	MT2168	BAZILE CREEK	09-07-2005	3	5	1	1	10
NE1196	NE1196	BIG SLOUGH	09-09-2004	3	1	5	1	10
NE1197	NE1197	WINNEBAGO CREEK	08-12-2004	1	1	1	1	4
NE2198	NE2198	BIG NEMAHA RIVER	08-04-2004	1	3	3	1	8
NE2199	NE2199	WHISKEY RUN	08-04-2004	5	7	5	7	24
NE2200	NE2200	LONG BRANCH CREEK	08-11-2004	1	3	7	7	18
NE2201	NE2201	UNNAMED TRIB. BALLS BRANCH	07-27-2004	3	3	1	7	14
NE2202	NE2202	FOURMILE CREEK	08-06-2004	5	3	3	7	18
NE2203	NE2203	MIDDLE BRANCH BIG NEMAHA RIVER	07-29-2004	3	3	5	7	18
NE2204	NE2204	MUDDY CREEK	08-12-2004	1	5	7	7	20
NE2205	NE2205	S. FORK BIG NEMAHA RIVER	08-03-2004	5	7	3	5	20
NE2206	NE2206	N. FORK BIG NEMAHA RIVER	08-11-2004	1	1	5	5	12
NE2207	NE2207	MID. BR. BIG NEMAHA RIVER	07-19-2004	1	1	7	7	16
NE2208	NE2208	LITTLE MUDDY CREEK	08-04-2004	5	7	1	3	16
NE2209	NE2209	HOOSIER CREEK	07-28-2004	3	3	5	7	18
NE3210	NE3210	HOOPER CREEK	07-26-2004	1	1	7	7	16
NE3211	NE3211	LITTLE NEMAHA RIVER	08-13-2004	3	5	7	7	22
NE3212	NE3212	SAND CREEK	07-28-2004	3	3	7	7	20
NE3213	NE3213	LITTLE NEMAHA RIVER	08-13-2004	1	7	7	7	22

\*CollDate – Collection date

Table 11. continued.

TotTxSc – Total number of taxa scores (1-7)

EPTSc – EPT taxa richness scores (1-7)

HBISc – Hilsenhoff Biotic Index scores (1-7)

Dom01Sc – Percent dominant taxon scores (1-7)

BugSC - ICI Score (sum of TotTxSc, EPTSc, HBISc, and Dom01Sc)

Table 12. Minimum, 25<sup>th</sup> percentile, median, 75<sup>th</sup> percentile, maximum, and number of samples for macroinvertebrate metrics and macroinvertebrate scores during the Nebraska Stream Biological Monitoring Program, 2004-2005.

<b>Metric</b>	<b>Minimum</b>	<b>25%tile</b>	<b>Median</b>	<b>75%tile</b>	<b>Maximum</b>	<b>Number Sampled</b>
ICI	4	10	14	18	24	80
TotalTax	1	26	34	44.5	60	80
EPTTax	0	6	8	13	21	80
HBI	2.51	5.22	5.65	6.08	7.93	80
Dom01Pct	13.09	23.74	32.8	45.11	100	80
TotTxScore	1	1	1	3	5	80
EPTScore	1	1	1	3	7	80
HBIScore	1	3	5	7	7	80
Dom01Score	1	3	7	7	7	80

Table 13. Minimum, 25<sup>th</sup> percentile, median, 75<sup>th</sup> percentile, maximum, and number of samples for habitat metrics and habitat metric scores during the Nebraska Stream Biological Monitoring Program, 2004-2005.

<b>Metric</b>	<b>Minimum</b>	<b>25%tile</b>	<b>Median</b>	<b>75%tile</b>	<b>Maximum</b>	<b>Number Sampled</b>
Nebr.Habitat Index (Habscore5)	22	30	34	38	46	80
Incision/width ratio (Inciswid)	0.01	0.33	0.79	1.28	3.21	80
Percent sand substrate (Pct_SA)	0	0	23.63	92.72	100	80
Percent rowcrop (w1h_crop)	0	0	0.4545	0.7576	1.0454	80
Percent riffle (Pct_RI)	0	0	0	4	72	80
Percent undercut banks (xfc_ucb)	0	0	0	0.0045	0.0409	80
Percent overhanging vegetation (pfc_ohc)	0	0.0909	0.6363	0.909	0.409	80
Percent silt substrate (Pct_FN)	0	0	23.63	63.63	100	80
Middle Canopy layer along stream bank (xcm)	0.02045	0.1284	0.2431	0.3488	0.6136	80
Percent pools (Pct_PL)	0	0	0	15	70	80
Percent barren banks (xgb)	0	0.0181	0.0454	0.125	0.3829	80
Incwidscore	1	1	1	1	7	80
Sandscore	1	1	5	7	7	80
Rcopscore	1	1	3	7	7	80
Riffscore	1	1	1	1	7	80
Ubankscore	1	1	1	1	3	80
Ohvegscore	1	1	1	5	7	80
Siltscore	1	3	7	7	7	80
Mcanpyscore	1	3	7	7	7	80
Poolscore	1	1	1	3	7	80
Barrenscore	1	3	7	7	7	80

Table 14. Table of habitat raw metric values collected from the Nebraska Stream Biological Monitoring Program, 2004-2005. Column headings are explained at end of table.

Storet	NDEQ_ID	STRMNAME	Inciswid	W1h_crop	Xfc_ucb	Pfc_ohv	Pct_PI	Pct_RI	Pct_Sa	Pct_Fn	Xgb	Xcm
009560	LP1153	PAWNEE CREEK	1.55	0.000	0.000	1.000	27.0	13.0	0.0	21.8	0.057	0.225
009810	NE2185	LORES BRANCH	1.51	0.000	0.000	0.273	0.0	39.0	14.5	23.6	0.095	0.366
010087	LP1023	PAWNEE CREEK	0.58	0.000	0.000	0.909	30.0	8.0	0.0	43.6	0.030	0.123
010112	NE3193	INDIAN CREEK	1.33	0.000	0.005	0.636	0.0	36.0	0.0	0.0	0.030	0.345
EL1113	EL1113	MAPLE CREEK	0.54	0.667	0.000	0.083	1.0	0.0	100.0	0.0	0.034	0.309
EL1115	EL1115	PEBBLE CREEK	0.53	0.955	0.000	0.273	0.0	0.0	34.5	30.9	0.023	0.405
EL1116	EL1116	BELL CREEK	0.64	1.000	0.000	0.000	0.0	0.0	0.0	23.6	0.051	0.228
EL1117	EL1117	W. FORK MAPLE CREEK	1.28	0.000	0.000	0.000	28.0	13.0	0.0	80.0	0.027	0.357
EL1118	EL1118	E. FORK MAPLE CREEK	1.87	1.000	0.009	1.000	0.0	0.0	0.0	25.5	0.000	0.183
EL1119	EL1119	ELKHORN RIVER	0.03	0.000	0.000	0.364	0.0	0.0	100.0	0.0	0.089	0.473
EL1120	EL1120	ELKHORN RIVER	0.02	0.000	0.000	0.364	0.0	0.0	100.0	0.0	0.039	0.195
EL1121	EL1121	HUMBUG CREEK	1.14	1.000	0.009	0.909	21.0	0.0	10.9	41.8	0.011	0.260
EL1122	EL1122	ELKHORN RIVER	0.01	0.667	0.018	0.909	0.0	0.0	100.0	0.0	0.097	0.349
EL1123	EL1123	UNION CREEK	0.79	0.333	0.000	0.000	60.0	0.0	0.0	100.0	0.048	0.261
EL2124	EL2124	MIDDLE LOGAN CREEK	1.05	0.939	0.000	0.727	11.0	10.0	20.0	56.4	0.002	0.233
EL3125	EL3125	DRY CREEK	0.57	0.000	0.000	0.909	50.0	0.0	100.0	0.0	0.066	0.050
EL4126	EL4126	BATTLE CREEK	0.98	0.000	0.009	1.000	38.0	0.0	0.0	100.0	0.005	0.150
EL4127	EL4127	ELKHORN RIVER	0.03	0.712	0.000	0.091	0.0	0.0	100.0	0.0	0.099	0.432
EL4128	EL4128	ELKHORN RIVER	0.01	0.000	0.000	0.333	70.0	0.0	100.0	0.0	0.176	0.075
EL4129	EL4129	CLEARWATER CREEK	0.2	0.000	0.009	1.000	0.0	0.0	100.0	0.0	0.002	0.116
EL4130	EL4130	ELKHORN RIVER	0.08	0.000	0.000	0.636	60.0	0.0	100.0	0.0	0.167	0.128
EL4131	EL4131	ELKHORN RIVER	0.22	0.000	0.000	0.182	48.0	0.0	25.5	0.0	0.153	0.070
EL4132	EL4132	HOLT CREEK	0.22	0.000	0.000	0.727	0.0	0.0	100.0	0.0	0.189	0.034
EL4133	EL4133	HOLT CREEK	0.09	0.000	0.005	0.636	0.0	0.0	90.9	9.1	0.268	0.030
LP1170	LP1170	BACHELOR BR TO EIGHT MILE CR.	0.5	0.349	0.000	1.000	0.0	18.0	0.0	32.7	0.052	0.227
LP1171	LP1171	LOST CREEK	0.1	0.409	0.014	0.727	7.0	0.0	45.5	54.5	0.020	0.064
LP1172	LP1172	SHELL CREEK	1.49	0.803	0.000	0.000	0.0	0.0	0.0	9.1	0.216	0.219
LP1173	LP1173	SHELL CREEK	0.81	0.833	0.000	0.000	51.0	0.0	0.0	100.0	0.041	0.110
LP2174	LP2174	SALT CREEK	0.35	0.000	0.000	0.727	0.0	0.0	100.0	0.0	0.041	0.023
LP2175	LP2175	WAHOO CREEK	0.31	0.682	0.005	0.091	9.0	0.0	89.1	5.5	0.059	0.111
LP2176	LP2176	BATES BRANCH	1.28	1.000	0.000	1.000	0.0	0.0	0.0	92.7	0.018	0.358

Table 14. continued.

Storet	NDEQ_ID	STRMNAME	Inciswid	W1h_crop	Xfc_ucb	Pfc_ohv	Pct_PI	Pct_RI	Pct_Sa	Pct_Fn	Xgb	Xcm
LP2177	LP2177	MIDDLE CREEK	0.29	0.939	0.000	0.909	0.0	0.0	0.0	63.6	0.018	0.270
LP2178	LP2178	MIDDLE OAK CREEK	1.29	0.000	0.009	0.000	0.0	0.0	92.7	0.0	0.061	0.328
LP2179	LP2179	COTTONWOOD CREEK	1.76	1.045	0.005	1.000	0.0	0.0	0.0	100.0	0.050	0.389
LP2180	LP2180	SILVER CREEK	0.62	1.015	0.000	1.000	0.0	0.0	0.0	100.0	0.125	0.375
LP2181	LP2181	OLIVE BRANCH CREEK	0.88	0.121	0.000	0.091	28.0	0.0	29.1	54.5	0.177	0.433
LP2182	LP2182	ROCK CREEK	0.72	0.000	0.000	0.455	12.0	0.0	0.0	100.0	0.045	0.080
LP2183	LP2183	CLEAR CREEK	0.37	0.667	0.000	0.727	0.0	0.0	45.5	54.5	0.000	0.075
LP2184	LP2184	SAND CREEK	0.89	0.500	0.000	0.909	13.0	0.0	96.4	1.8	0.049	0.414
LP2185	LP2185	DEE CREEK	1.56	1.000	0.000	1.000	5.0	0.0	18.2	49.1	0.052	0.411
LP2186	LP2186	WAHOO CREEK	0.43	0.364	0.000	0.364	0.0	0.0	0.0	65.5	0.018	0.395
LP2187	LP2178	ROCK CREEK	1.3	0.000	0.009	0.727	0.0	0.0	0.0	100.0	0.030	0.091
MT1148	MT1148	S. BRANCH PAPILLION CREEK	1.12	0.606	0.000	0.909	0.0	15.0	0.0	60.0	0.193	0.290
MT1150	MT1150	BIG PAPILLION CREEK	0.9	0.333	0.000	0.091	0.0	7.0	0.0	49.1	0.025	0.214
MT1151	MT1151	LONG CREEK	1.37	0.273	0.000	0.909	0.0	0.0	0.0	100.0	0.007	0.324
MT1152	MT1152	MILL CREEK	2.89	0.333	0.023	0.364	28.0	5.0	5.5	36.4	0.016	0.422
MT1153	MT1153	SILVER CREEK	2.73	0.000	0.000	0.909	0.0	0.0	23.6	36.4	0.000	0.102
MT1154	MT1154	COW CREEK	0.98	1.000	0.000	0.818	0.0	0.0	0.0	61.8	0.032	0.070
MT1156	MT1156	NORTH OMAHA CREEK	1.78	1.000	0.000	1.000	0.0	0.0	0.0	94.5	0.000	0.265
MT1157	MT1157	OMAHA CREEK	0.77	0.758	0.000	0.364	5.0	10.0	0.0	54.5	0.032	0.314
MT2158	MT2158	ELK CREEK	1.25	0.697	0.000	0.727	5.0	17.0	0.0	85.5	0.040	0.220
MT2159	MT2159	ELK CREEK	0.33	0.636	0.000	0.333	20.0	0.0	0.0	63.6	0.018	0.155
MT2160	MT2160	ELK CREEK	1.06	0.773	0.000	0.909	5.0	28.0	3.6	23.6	0.007	0.105
MT2161	MT2161	LIME CREEK	1.57	0.439	0.018	0.909	13.0	0.0	23.6	0.0	0.119	0.239
MT2162	MT2162	WEST BOW CREEK	0.6	0.409	0.000	0.818	0.0	0.0	100.0	0.0	0.000	0.180
MT2163	MT2163	UNNAMED TRIB. NORWEGIAN BOW CREEK	2.1	0.439	0.000	0.909	0.0	0.0	0.0	74.5	0.000	0.222
MT2164	MT2164	NORWEGIAN BOW CREEK	1.11	0.000	0.000	0.727	26.0	0.0	3.6	47.3	0.005	0.189
MT2165	MT2165	WEST BOW CREEK	0.32	0.000	0.000	1.000	6.0	0.0	36.4	0.0	0.147	0.101
MT2166	MT2166	LITTLE BAZILE CREEK	0.27	0.000	0.014	0.636	7.0	9.0	67.3	0.0	0.211	0.274
MT2167	MT2167	UNNAMED TRIB. BAZILE CREEK	1.06	0.455	0.005	1.000	2.0	0.0	85.5	14.5	0.000	0.020
MT2168	MT2168	BAZILE CREEK	0.03	0.000	0.000	1.000	0.0	0.0	100.0	0.0	0.016	0.280



Table 14. continued.

Storet	NDEQ_ID	STRMNAME	Inciswid	W1h_crop	Xfc_ucb	Pfc_ohv	Pct_PI	Pct_Ri	Pct_Sa	Pct_Fn	Xgb	Xcm
NE1196	NE1196	BIG SLOUGH	0.95	0.000	0.000	0.545	50.0	0.0	0.0	74.5	0.020	0.383
NE1197	NE1197	WINNEBAGO CREEK	3.04	0.712	0.000	1.000	10.0	5.0	0.0	67.3	0.023	0.243
NE2198	NE2198	BIG NEMAHA RIVER	0.19	0.697	0.005	0.000	15.0	0.0	70.9	27.3	0.383	0.466
NE2199	NE2199	WHISKEY RUN	3.21	0.924	0.000	0.455	23.0	34.0	60.0	5.5	0.199	0.253
NE2200	NE2200	LONG BRANCH CREEK	0.66	0.697	0.014	0.091	0.0	0.0	92.7	3.6	0.064	0.373
NE2201	NE2201	UNNAMED TRIB. BALLS BRANCH	1.04	0.000	0.000	0.636	7.0	0.0	34.5	65.5	0.025	0.143
NE2202	NE2202	FOURMILE CREEK	1.23	0.742	0.000	0.364	0.0	4.0	5.5	14.5	0.045	0.331
NE2203	NE2203	MIDDLE BRANCH BIG NEMAHA RIVER	0.62	0.682	0.009	0.000	0.0	0.0	96.4	0.0	0.169	0.342
NE2204	NE2204	MUDDY CREEK	0.33	0.773	0.000	0.000	0.0	0.0	100.0	0.0	0.043	0.614
NE2205	NE2205	S. FORK BIG NEMAHA RIVER	0.46	0.667	0.000	0.000	0.0	34.0	56.4	0.0	0.169	0.191
NE2206	NE2206	N. FORK BIG NEMAHA RIVER	0.41	0.803	0.000	0.000	0.0	0.0	54.5	43.6	0.300	0.174
NE2207	NE2207	MID. BR. BIG NEMAHA RIVER	1.42	0.727	0.000	0.000	0.0	0.0	100.0	0.0	0.159	0.243
NE2208	NE2208	LITTLE MUDDY CREEK	1.13	0.667	0.000	0.273	18.0	18.0	47.3	5.5	0.143	0.285
NE2209	NE2209	HOOSIER CREEK	1.09	0.000	0.000	0.273	9.0	72.0	3.6	12.7	0.048	0.405
NE3210	NE3210	HOOPER CREEK	0.69	1.000	0.041	1.000	0.0	0.0	25.5	74.5	0.039	0.273
NE3211	NE3211	LITTLE NEMAHA RIVER	0.26	0.742	0.000	0.000	27.0	0.0	100.0	0.0	0.339	0.223
NE3212	NE3212	SAND CREEK	1.61	0.439	0.000	0.182	10.0	0.0	74.5	0.0	0.191	0.455
NE3213	NE3213	LITTLE NEMAHA RIVER	0.18	0.667	0.000	0.000	7.0	0.0	100.0	0.0	0.093	0.314

\*Inciswid – Incision/width ratio  
W1h\_crop – Percent crop  
Xfc\_ucb - Percent undercut banks  
Pfc\_ohv – Percent overhanging vegetation  
Pct\_PI – Percent pools  
Pct\_Ri – Percent riffle  
Pct\_Sa – Percent sand  
Pct\_Fn – Percent fines or silt substrate  
Xgb – Percent barren banks  
Xcm – Middle canopy layer along stream bank

Table 15. Table of habitat metric values collected from the Nebraska Stream Biological Monitoring Program, 2004-2005. Column headings are explained at end of table.

Storet	NDEQ_ID	STRMNAME	Incwidsc	Rcropsc	Barrensc	Siltsc	Riffsc	Sandsc	Poolsc	Ubanksc	Mcanpysc	Ohvegsc	Habscore5
009560	LP1153	PAWNEE CREEK	1	7	5	7	3	7	3	1	5	7	46
009810	NE2185	LORES BRANCH	1	7	5	7	5	7	1	1	7	1	42
010087	LP1023	PAWNEE CREEK	1	7	7	5	1	7	5	1	3	5	42
010112	NE3193	INDIAN CREEK	1	7	7	7	5	7	1	1	7	1	44
EL1113	EL1113	MAPLE CREEK	1	1	7	7	1	1	1	1	7	1	28
EL1115	EL1115	PEBBLE CREEK	1	1	7	7	1	5	1	1	7	1	32
EL1116	EL1116	BELL CREEK	1	1	5	7	1	7	1	1	5	1	30
EL1117	EL1117	W. FORK MAPLE CREEK	1	7	7	1	3	7	3	1	7	1	38
EL1118	EL1118	E. FORK MAPLE CREEK	1	1	7	7	1	7	1	1	5	7	38
EL1119	EL1119	ELKHORN RIVER	7	7	5	7	1	1	1	1	7	1	38
EL1120	EL1120	ELKHORN RIVER	7	7	7	7	1	1	1	1	5	1	38
EL1121	EL1121	HUMBUG CREEK	1	1	7	5	1	7	3	1	7	5	38
EL1122	EL1122	ELKHORN RIVER	7	1	5	7	1	1	1	3	7	5	38
EL1123	EL1123	UNION CREEK	1	5	7	1	1	7	7	1	7	1	38
EL2124	EL2124	MIDDLE LOGAN CREEK	1	1	7	5	1	7	3	1	7	1	34
EL3125	EL3125	DRY CREEK	1	7	5	7	1	1	7	1	1	5	36
EL4126	EL4126	BATTLE CREEK	1	7	7	1	1	7	7	1	5	7	44
EL4127	EL4127	ELKHORN RIVER	7	1	5	7	1	1	1	1	7	1	32
EL4128	EL4128	ELKHORN RIVER	7	7	3	7	1	1	7	1	1	1	36
EL4129	EL4129	CLEARWATER CREEK	5	7	7	7	1	1	1	1	3	7	40
EL4130	EL4130	ELKHORN RIVER	7	7	3	7	1	1	7	1	3	1	38
EL4131	EL4131	ELKHORN RIVER	5	7	3	7	1	5	7	1	1	1	38
EL4132	EL4132	HOLT CREEK	5	7	3	7	1	1	1	1	1	1	28
EL4133	EL4133	HOLT CREEK	7	7	1	7	1	1	1	1	1	1	28
LP1170	LP1170	BACHELOR BR TO EIGHT MILE CR.	1	5	5	7	3	7	1	1	5	7	42
LP1171	LP1171	LOST CREEK	7	5	7	5	1	5	1	1	1	1	34
LP1172	LP1172	SHELL CREEK	1	1	3	7	1	7	1	1	5	1	28
LP1173	LP1173	SHELL CREEK	1	1	7	1	1	7	7	1	3	1	30
LP2174	LP2174	SALT CREEK	1	7	7	7	1	1	1	1	1	1	28
LP2175	LP2175	WAHOO CREEK	1	1	5	7	1	1	1	1	3	1	22
LP2176	LP2176	BATES BRANCH	1	1	7	1	1	7	1	1	7	7	34

Table 15. continued.

Storet	NDEQ_ID	STRMNAME	Incwidsc	Rcropsc	Barrensc	Siltsc	Riffsc	Sandsc	Poolsc	Ubanksc	Mcanpysc	Ohvegsc	Habscore5
LP2177	LP2177	MIDDLE CREEK	3	1	7	3	1	7	1	1	7	5	36
LP2178	LP2178	MIDDLE OAK CREEK	1	7	5	7	1	1	1	1	7	1	32
LP2179	LP2179	COTTONWOOD CREEK	1	1	5	1	1	7	1	1	7	7	32
LP2180	LP2180	SILVER CREEK	1	1	3	1	1	7	1	1	7	7	30
LP2181	LP2181	OLIVE BRANCH CREEK	1	7	3	5	1	5	3	1	7	1	34
LP2182	LP2182	ROCK CREEK	1	7	7	1	1	7	3	1	1	1	30
LP2183	LP2183	CLEAR CREEK	1	1	7	5	1	5	1	1	1	1	24
LP2184	LP2184	SAND CREEK	1	3	7	7	1	1	3	1	7	5	36
LP2185	LP2185	DEE CREEK	1	1	5	5	1	7	1	1	7	7	36
LP2186	LP2186	WAHOO CREEK	1	5	7	3	1	7	1	1	7	1	34
LP2187	LP2178	ROCK CREEK	1	7	7	1	1	7	1	1	1	1	28
MT1148	MT1148	S. BRANCH PAPILLION CREEK	1	3	3	5	3	7	1	1	7	5	36
MT1150	MT1150	BIG PAPILLION CREEK	1	5	7	5	1	7	1	1	5	1	34
MT1151	MT1151	LONG CREEK	1	5	7	1	1	7	1	1	7	5	36
MT1152	MT1152	MILL CREEK	1	5	7	5	1	7	3	3	7	1	40
MT1153	MT1153	SILVER CREEK	1	7	7	5	1	5	1	1	1	5	34
MT1154	MT1154	COW CREEK	1	1	7	5	1	7	1	1	1	3	28
MT1156	MT1156	NORTH OMAHA CREEK	1	1	7	1	1	7	1	1	7	7	34
MT1157	MT1157	OMAHA CREEK	1	1	7	5	1	7	1	1	7	1	32
MT2158	MT2158	ELK CREEK	1	1	7	1	3	7	1	1	5	1	28
MT2159	MT2159	ELK CREEK	1	1	7	3	1	7	3	1	5	1	30
MT2160	MT2160	ELK CREEK	1	1	7	7	5	7	1	1	1	5	36
MT2161	MT2161	LIME CREEK	1	3	5	7	1	5	3	3	7	5	40
MT2162	MT2162	WEST BOW CREEK	1	5	7	7	1	1	1	1	5	3	32
MT2163	MT2163	UNNAMED TRIB. NORWEGIAN BOW CREEK	1	3	7	1	1	7	1	1	5	5	32
MT2164	MT2164	NORWEGIAN BOW CREEK	1	7	7	5	1	7	3	1	5	1	38
MT2165	MT2165	WEST BOW CREEK	1	7	3	7	1	5	1	1	1	7	34
MT2166	MT2166	LITTLE BAZILE CREEK	3	7	3	7	1	3	1	1	7	1	34
MT2167	MT2167	UNNAMED TRIB. BAZILE CREEK	1	3	7	7	1	1	1	1	1	7	30
MT2168	MT2168	BAZILE CREEK	7	7	7	7	1	1	1	1	7	7	46

Table 15. continued.

Storet	NDEQ_ID	STRMNAME	Incwidsc	Rcropsc	Barrensc	Siltsc	Riffsc	Sandsc	Poolsc	Ubanksc	Mcanpysc	Ohvegsc	Habscore5
NE1196	NE1196	BIG SLOUGH	1	7	7	1	1	7	7	1	7	1	40
NE1197	NE1197	WINNEBAGO CREEK	1	1	7	3	1	7	1	1	7	7	36
NE2198	NE2198	BIG NEMAHA RIVER	5	1	1	7	1	3	3	1	7	1	30
NE2199	NE2199	WHISKEY RUN	1	1	3	7	5	5	3	1	7	1	34
NE2200	NE2200	LONG BRANCH CREEK	1	1	5	7	1	1	1	1	7	1	26
NE2201	NE2201	UNNAMED TRIB. BALLS BRANCH	1	7	7	3	1	5	1	1	5	1	32
NE2202	NE2202	FOURMILE CREEK	1	1	7	7	1	7	1	1	7	1	34
NE2203	NE2203	MIDDLE BRANCH BIG NEMAHA RIVER	1	1	3	7	1	1	1	1	7	1	24
NE2204	NE2204	MUDDY CREEK	1	1	7	7	1	1	1	1	7	1	28
NE2205	NE2205	S. FORK BIG NEMAHA RIVER	1	1	3	7	5	5	1	1	5	1	30
NE2206	NE2206	N. FORK BIG NEMAHA RIVER	1	1	1	5	1	5	1	1	5	1	22
NE2207	NE2207	MID. BR. BIG NEMAHA RIVER	1	1	3	7	1	1	1	1	7	1	24
NE2208	NE2208	LITTLE MUDDY CREEK	1	1	3	7	3	5	3	1	7	1	32
NE2209	NE2209	HOOSIER CREEK	1	7	7	7	7	7	1	1	7	1	46
NE3210	NE3210	HOOPER CREEK	1	1	7	1	1	5	1	3	7	7	34
NE3211	NE3211	LITTLE NEMAHA RIVER	3	1	1	7	1	1	3	1	5	1	24
NE3212	NE3212	SAND CREEK	1	3	3	7	1	3	1	1	7	1	28
NE3213	NE3213	LITTLE NEMAHA RIVER	5	1	5	7	1	1	1	1	7	1	30

\*Incwidsc – Incision/width score  
Rcropsc – Percent rowcrop score  
Barrensc - Percent barren banks score  
Siltsc – Percent silt/fines score  
Riffsc – Percent riffle score  
Sandsc – Percent sand score  
Poolsc – Percent pool score  
Ubanksc – Percent undercut banks score  
Mcanpysc – Middle canopy layer along stream bank score  
Ohvegsc – Percent overhanging vegetation  
Habscore5 – Habitat Index metrics score

Table 16. Minimum, 25<sup>th</sup> percentile, median, 75<sup>th</sup> percentile, maximum, and number of samples for parameters measured in the field during the Nebraska Stream Biological Monitoring Program, 2004-2005.

<b>Field parameter</b>	<b>Minimum</b>	<b>25%tile</b>	<b>Median</b>	<b>75%tile</b>	<b>Maximum</b>	<b>Number Sampled</b>
Conductivity, umho/cm	6.59	442	587	690	1550	79
Dissolved Oxygen, mg/l	1.66	7.62	9.47	11.64	16.37	79
pH	5.39	7.71	7.97	8.25	9.01	79
Stream discharge, cfs	0.09	1	3.79	10.44	255	79
Turbidity, NTU	4.5	17.9	31.65	70.5	230	75
Water Temperature, C	14.72	20.14	22.4	25.63	31.81	79

Table17. Table of field parameters measured for the Nebraska Stream Biological Monitoring Program, 2004-2005.

StationID	ChemSampID	Conductivity umho/cm	Dissolved Oxygen mg/l	pH	Stream Discharge, Instant cfs	Turbidity NTU	Water Temperature C
009560	211	421	10.2	7.4	0.67	15.2	20.14
009810	230	587	16.37	7.71	0.09	26.3	25.75
010087	210	490	5.19	7.9	0.49	.	20
010112	243	645	12.03	7.95	0.77	70.5	20.77
EL1113	249	690	7.57	8.37	4.97	32	15.85
EL1115	252	670	6.33	7.81	18.04	.	25.15
EL1116	253	604	3.53	8.28	5.98	.	20.5
EL1117	254	691	11.51	8.12	1.13	91	27.26
EL1118	255	788	9.79	8	1.65	54.4	18.12
EL1119	256	397	13.01	8.93	228.35	52.5	30.59
EL1120	257	442	12.25	9.01	135	25.7	19
EL1121	258	860	10.84	7.95	3.79	9.7	26.13
EL1122	259	346	13.48	8.89	255	110	26.26
EL1123	260	643	3.8	7.58	0.8	54.8	24.07
EL2124	261	1040	10.06	7.44	3	18.1	20.62
EL3125	262	410	5.74	7.7	0.92	22.2	25.32
EL4126	263	55	1.66	7.38	0.28	31.3	14.72
EL4127	264	331	10.19	8.31	187.9	36.8	21.58
EL4128	265	251	11.64	8.8	164.4	37.1	29
EL4129	266	235	7.3	7.96	6.58	8.1	31.18
EL4130	267	224	10.18	8.25	46	12.5	21.51
EL4131	268	187	13.86	8.72	11.4	4.5	25.61
EL4132	269	126	7.53	7.67	4.11	5.8	30.07
EL4133	270	138	8.88	7.3	5.38	4.6	19.65
LP1170	212	485	9.04	8.12	1.81	32.5	21.18
LP1171	213	340	8.28	7.93	6.01	82.4	23.65
LP1172	214	496	12.16	8.76	1.66	20	28.02
LP1173	215	667	9.73	8.11	1.2	22	22.8
LP2174	216	911	10.4	8	8.01	.	22.8
LP2176	217	746	4.88	7.4	1.4	120	24.59
LP2177	218	1550	10.1	7.82	1	24.7	23.37
LP2178	219	639	9.41	8.21	0.5	10.2	30.05
LP2179	220	604	10.75	7.93	0.64	26.4	28.56
LP2180	221	451	8.35	7.27	1.42	24	24.91
LP2181	222	606	9.08	7.51	2.2	.	21.47
LP2182	223	872	10.63	8.06	4.7	70.6	23.85
LP2183	224	593	7.46	7.78	5.9	77	25.36
LP2184	225	512	11.4	7.69	3.5	8.3	22.7

Table 17. continued.

StationID	ChemSampID	Conductivity umho/cm	Dissolved Oxygen mg/l	pH	Stream Flow, Instant cfs	Turbidity NTU	Water Temperature C
LP2185	226	626	12.1	7.57	2.37	35.6	18.26
LP2186	227	565	3.25	7.38	2	22	18.7
LP2187	228	587	16.37	8.51	1.37	37	25.75
MT1148	271	6.59	3.72	7.66	0.15	230	25
MT1150	272	646	5.52	8.13	7	220	16.94
MT1151	273	624	6.97	7.65	0.34	67	23.78
MT1152	274	621	7.62	7.96	1.1	29.7	22.15
MT1153	275	591	8.37	7.94	4.6	76.5	18.63
MT1154	276	746	9.84	7.96	2.38	60.7	18.28
MT1156	277	734	8.65	7.86	5.27	65.7	18.43
MT1157	278	713	8.42	8.05	18.4	122	20.25
MT2158	279	850	8.67	7.8	6.62	150	17.67
MT2159	280	795	8.64	7.98	11.47	121	19.74
MT2160	281	746	7.73	7.97	21.1	78.3	20.17
MT2161	282	688	8.12	7.88	5.47	20.6	20.68
MT2162	283	1154	7.25	7.83	12.6	64.3	27.73
MT2163	284	878	7.86	8.07	0.18	17.9	20.6
MT2164	285	884	9.4	7.92	2.18	35.5	17.67
MT2165	286	827	9.49	7.96	4.63	64.4	15.53
MT2166	287	665	9.47	8.03	15.76	13.8	17.5
MT2167	288	497	8.19	7.69	0.7	29.6	22.4
MT2168	289	614	7.22	8.03	56.59	77.4	29.48
NE1196	229	359	7.51	7.2	4.08	30.8	17.42
NE1197	248	475	14.23	8.48	0.303	11.8	20.01
NE2198	231	611	10.17	8.34	53	43.6	27.09
NE2199	232	520	12.4	8.31	0.32	9	27.78
NE2200	233	440	11.85	8.91	4.7	11.9	25.1
NE2201	234	289	7.02	7.45	0.71	10	25.63
NE2202	235	382	8.42	7.8	0.17	16.6	21.16
NE2203	236	439	12.11	8.1	4.52	59	21.92
NE2204	237	526	12.16	8.63	15.95	7.5	22.12
NE2205	238	450	13.12	8.43	10.44	17.9	30.35
NE2206	239	510	9.47	5.39	42.66	194	21.58
NE2207	240	557	12.36	8.2	3.09	76.8	31.81
NE2208	241	532	10.87	7.97	1.29	110	25.1
NE2209	242	485	9.17	8.11	0.13	46	22.07
NE3210	244	458	15.32	8.63	5.66	80	25.36
NE3211	245	598	10.64	8.46	49.1	20.5	21.85
NE3212	246	458	11.68	8.18	0.66	14.7	20.92
NE3213	247	581	11.36	8.61	76.7	20.1	24.21

Table 18. Table of 2004-2005 Nebraska Stream Biological Monitoring Program stream ratings using IBI fish scores and ICI macroinvertebrate scores.

sStoret	NDEQ_ID	STRMNAME	STR_SEG	Habscore5	Habuse	ibi8	IBIuse	BugSc	ICluse	Final Rating	Comments
009560	LP1153	PAWNEE CREEK	LP1.11600	46	Excellent	72.76	Excellent	20	Good	<b>Good</b>	
009810	NE2185	LORES BRANCH	NE2.12110	42	Excellent	59.83	Good	6	Poor	<b>Good</b>	Almost dry; little H2O
010087	LP1023	PAWNEE CREEK	LP1.11500	42	Excellent	50.77	Good	22	Excellent	<b>Good</b>	
010112	NE3193	INDIAN CREEK	NE3.10800	44	Excellent	67.31	Excellent	18	Good	<b>Good</b>	
EL1113	EL1113	MAPLE CREEK	EL1.10900	28	Poor	29.28	Poor	12	Fair	<b>Poor</b>	Low H2O, No habitat
EL1115	EL1115	PEBBLE CREEK	EL1.20100	32	Fair	32.54	Poor	10	Fair	<b>Poor</b>	Fish kill 2 days before sample
EL1116	EL1116	BELL CREEK	EL1.10700	30	Fair	42.47	Fair	14	Good	<b>Fair</b>	
EL1117	EL1117	W. FORK MAPLE CREEK	EL1.10940	38	Excellent	22.79	Poor	12	Fair	<b>Poor</b>	Pooled; low H2O; Low fish, No habitat
EL1118	EL1118	E. FORK MAPLE CREEK	EL1.10920	38	Excellent	45.64	Good	14	Good	<b>Good</b>	
EL1119	EL1119	ELKHORN RIVER	EL1.20000	38	Excellent	56.75	Good	12	Fair	<b>Fair</b>	
EL1120	EL1120	ELKHORN RIVER	EL1.20000	38	Excellent	51.13	Good	10	Fair	<b>Fair</b>	
EL1121	EL1121	HUMBUG CREEK	EL1.21300	38	Excellent	67.45	Excellent	20	Good	<b>Good</b>	
EL1122	EL1122	ELKHORN RIVER	EL1.20000	38	Excellent	47.16	Good	8	Poor	<b>Poor</b>	Low H2O, No habitat, few bugs
EL1123	EL1123	UNION CREEK	EL1.22100	38	Excellent	33.18	Poor	4	Poor	<b>Poor</b>	Low H2O, No habitat; High tolerant fish; 303d listing
EL2124	EL2124	MIDDLE LOGAN CREEK	EL2.40200	34	Good	36.88	Poor	16	Good	<b>Poor</b>	Low H2O, Few bugs, High tolerant fish
EL3125	EL3125	DRY CREEK	EL3.20400	36	Good	77.66	Excellent	16	Good	<b>Good</b>	
EL4126	EL4126	BATTLE CREEK	EL4.10500	44	Excellent	46.42	Good	10	Fair	<b>Fair</b>	
EL4127	EL4127	ELKHORN RIVER	EL4.10000	32	Fair	56.38	Good	10	Fair	<b>Fair</b>	
EL4128	EL4128	ELKHORN RIVER	EL4.10000	36	Good	58.00	Good	16	Good	<b>Good</b>	
EL4129	EL4129	CLEARWATER CREEK	EL4.20300	40	Fair	71.10	Good	18	Poor	<b>Poor</b>	Few bugs, High fish
EL4130	EL4130	ELKHORN RIVER	EL4.30000	38	Fair	71.33	Good	6	Poor	<b>Poor</b>	Low H2O; No habitat; No OV; Hi Fish
EL4131	EL4131	ELKHORN RIVER	EL4.40000	38	Good	62.95	Good	8	Poor	<b>Poor</b>	Low H2O; No habitat; Few bugs, Hi fish
EL4132	EL4132	HOLT CREEK	EL4.30500	28	Poor	66.45	Excellent	10	Poor	<b>Poor</b>	Low flows, Few bugs, High fish
EL4133	EL4133	HOLT CREEK	EL4.30400	28	Poor	61.32	Good	14	Poor	<b>Poor</b>	Low flows, Few bugs, High fish
LP1170	LP1170	BACHELOR BR TO EIGHT MILE CR.	LP1.10110	42	Excellent	42.23	Fair	20	Good	<b>Fair</b>	
LP1171	LP1171	LOST CREEK	LP1.21100	34	Fair	70.41	Excellent	18	Good	<b>Good</b>	
LP1172	LP1172	SHELL CREEK	LP1.20800	28	Poor	20.11	Poor	4	Poor	<b>Poor</b>	No habitat, bugs or fish/poor site; 303d listing
LP1173	LP1173	SHELL CREEK	LP1.20800	30	Fair	47.33	Good	16	Good	<b>Good</b>	
LP2174	LP2174	SALT CREEK	LP2.20000	28	Poor	39.19	Poor	16	Good	<b>Poor</b>	No habitat or bugs



Table 18. continued.

Storet	NDEQ_ID	STRMNAME	STR_SEG	Habscore5	Habuse	ibi8	IBIuse	BugSc	ICluse	Final Rating	Comments
LP2175	LP2175	WAHOO CREEK	LP2.10100	22	Poor	46.96	Good	16	Good	Good	
LP2176	LP2176	BATES BRANCH	LP2.20612	34	Good	41.91	Fair	8	Poor	Poor	Tolerant fish; few bugs
LP2177	LP2177	MIDDLE CREEK	LP2.21000	36	Good	38.42	Poor	8	Poor	Poor	Few bugs, High fish; 303d listing
LP2178	LP2178	MIDDLE OAK CREEK	LP2.20710	32	Fair	53.35	Good	14	Good	Good	
LP2179	LP2179	COTTONWOOD CREEK	LP2.10210	32	Fair	33.40	Poor	12	Fair	Poor	Few bugs, Few fish, poor habitat
LP2180	LP2180	SILVER CREEK	LP2.10140	30	Fair	40.14	Fair	14	Good	Fair	
LP2181	LP2181	OLIVE BRANCH CREEK	LP2.40310	34	Good	44.72	Good	4	Poor	Poor	Below reservoir; No habitat for bugs
LP2182	LP2182	ROCK CREEK	LP2.11100	30	Fair	49.80	Good	10	Fair	Fair	
LP2183	LP2183	CLEAR CREEK	LP2.10110	24	Poor	66.69	Excellent	16	Good	Good	
LP2184	LP2184	SAND CREEK	LP2.10170	36	Good	50.01	Good	20	Good	Good	
LP2185	LP2185	DEE CREEK	LP2.10800	36	Good	51.87	Good	18	Good	Good	
LP2186	LP2186	WAHOO CREEK	LP2.10400	34	Good	41.22	Fair	10	Fair	Fair	
LP2187	LP2178	ROCK CREEK	LP2.11010	28	Poor	62.83	Excellent	14	Good	Good	
MT1148	MT1148	S. BRANCH PAPILLION CREEK	MT1.10240	36	Good	31.86	Poor	8	Poor	Poor	Tolerant fish; few bugs; 303d listing
MT1150	MT1150	BIG PAPILLION CREEK	MT1.10120	34	Good	47.52	Good	14	Good	Good	
MT1151	MT1151	LONG CREEK	MT1.10800	36	Good	19.18	Poor	14	Good	Poor	Drop structure; No fish
MT1152	MT1152	MILL CREEK	MT1.10700	40	Excellent	62.79	Excellent	14	Good	Good	
MT1153	MT1153	SILVER CREEK	MT1.11510	34	Good	37.89	Poor	18	Good	Poor	Few fish; No habitat; High levees
MT1154	MT1154	COW CREEK	MT1.12171	28	Poor	38.73	Poor	14	Good	Poor	No habitat; Tolerant fish
MT1156	MT1156	NORTH OMAHA CREEK	MT1.12150	34	Good	32.51	Poor	16	Good	Poor	Tolerant fish
MT1157	MT1157	OMAHA CREEK	MT1.12100	32	Fair	52.71	Good	16	Good	Good	
MT2158	MT2158	ELK CREEK	MT2.10300	28	Poor	35.61	Poor	8	Poor	Poor	No habitat, bugs or fish/poor site; 303d listing
MT2159	MT2159	ELK CREEK	MT2.10300	30	Fair	39.13	Poor	16	Good	Poor	No habitat, few fish
MT2160	MT2160	ELK CREEK	MT2.10200	36	Good	58.86	Good	14	Good	Good	
MT2161	MT2161	LIME CREEK	MT2.11000	40	Excellent	73.63	Excellent	6	Poor	Poor	Few bugs; High fish
MT2162	MT2162	WEST BOW CREEK	MT2.11310	32	Fair	59.37	Good	12	Fair	Fair	
MT2163	MT2163	UN. TRIB. NORWEGIAN BOW CREEK	MT2.11521	32	Fair	73.39	Excellent	12	Fair	Fair	
MT2164	MT2164	NORWEGIAN BOW CREEK	MT2.11520	38	Excellent	60.58	Excellent	18	Good	Good	
MT2165	MT2165	WEST BOW CREEK	MT2.11320	34	Good	48.21	Good	18	Good	Good	
MT2166	MT2166	LITTLE BAZILE CREEK	MT2.12510	34	Good	56.58	Good	16	Good	Good	

Table 18. continued.

Storet	NDEQ_ID	STRMNAME	STR_SEG	Habscore5	Habuse	ibi8	IBluse	BugSc	ICluse	Final Rating	Comments
MT2167	MT2167	UNNAMED TRIB. BAZILE CREEK	MT2.12620	30	Fair	91.90	Excellent	14	Good	<b>Good</b>	
MT2168	MT2168	BAZILE CREEK	MT2.12400	46	Excellent	59.86	Good	10	Fair	<b>Fair</b>	
NE1196	NE1196	BIG SLOUGH	NE1.12831	40	Excellent	42.16	Fair	10	Fair	<b>Fair</b>	
NE1197	NE1197	WINNEBAGO CREEK	NE1.10200	36	Good	76.18	Excellent	4	Poor	<b>Poor</b>	Few bugs; No habitat; Deep silt
NE2198	NE2198	BIG NEMAHA RIVER	NE2.10000	30	Fair	31.94	Poor	8	Poor	<b>Poor</b>	303d listing
NE2199	NE2199	WHISKEY RUN	NE2.10751	34	Good	77.51	Excellent	24	Excellent	<b>Excellent</b>	
NE2200	NE2200	LONG BRANCH CREEK	NE2.12330	26	Poor	29.22	Poor	18	Good	<b>Poor</b>	Few fish; No habitat
NE2201	NE2201	UNNAMED TRIB. BALLS BRANCH	NE2.12135.12	32	Fair	75.15	Excellent	14	Good	<b>Good</b>	
NE2202	NE2202	FOURMILE CREEK	NE2.12000	34	Good	53.50	Good	18	Good	<b>Good</b>	
NE2203	NE2203	MIDDLE BRANCH BIG NEMAHA RIVER	NE2.12600	24	Poor	40.17	Fair	18	Good	<b>Fair</b>	
NE2204	NE2204	MUDDY CREEK	NE2.10600	28	Poor	32.24	Poor	20	Good	<b>Poor</b>	All tolerant fish collected=low score
NE2205	NE2205	S. FORK BIG NEMAHA RIVER	NE2.11900	30	Fair	40.60	Fair	20	Good	<b>Fair</b>	
NE2206	NE2206	N. FORK BIG NEMAHA RIVER	NE2.12500	22	Poor	36.26	Poor	12	Fair	<b>Poor</b>	Very Low flow; No habitat
NE2207	NE2207	MID. BR. BIG NEMAHA RIVER	NE2.12610	24	Poor	29.38	Poor	16	Good	<b>Poor</b>	Low flow; all tolerant fish
NE2208	NE2208	LITTLE MUDDY CREEK	NE2.10760	32	Fair	60.60	Excellent	16	Good	<b>Good</b>	
NE2209	NE2209	HOOSIER CREEK	NE2.10810	46	Excellent	51.77	Good	18	Good	<b>Good</b>	
NE3210	NE3210	HOOPER CREEK	NE3.31200	34	Good	51.18	Good	16	Good	<b>Good</b>	
NE3211	NE3211	LITTLE NEMAHA RIVER	NE3.10000	24	Poor	41.81	Fair	22	Excellent	<b>Fair</b>	
NE3212	NE3212	SAND CREEK	NE3.12700	28	Poor	40.21	Fair	20	Good	<b>Fair</b>	
NE3213	NE3213	LITTLE NEMAHA RIVER	NE3.10000	30	Fair	52.22	Good	22	Excellent	<b>Good</b>	