

**USE OF DIATOMS AND SOFT ALGAE AS INDICATORS
OF STREAM ABIOTIC DETERMINANTS IN THE
LAHONTAN BASIN, USA.**

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ABSTRACT

This study tests the efficacy of diatoms and soft algae (non-diatoms) as indicators of environmental conditions in streams located throughout the Lahontan Basin, USA. Potential diatom assemblages indicative of land-use practices that augment the degree of sedimentation, nutrient concentrations, and secondary salinization were identified.

Diatom and soft algal communities were analyzed in 65 stream habitats in the Lahontan Basin during 1996 through 1999 and 2001. In addition to elevation, twenty-five abiotic parameters were measured at each site and tested as determinants of diatom and soft algal distributions. Stream sites ranged from 5340 to 9340 feet asl and had a wide range of gradients, discharge, substrate, canopy cover, and water quality conditions.

Two hundred and twenty-five diatom taxa and over 30 soft algal taxa were identified in the stream habitats, with indications that algal assemblages were closely correlated with stream abiotic determinants. Diatoms were better indicators of stream conditions than soft algal communities, although species of the filamentous green alga, *Stigeoclonium* were abundant in habitats considered to have low ecosystem integrity. Also, density of cyanobacteria showed a strong positive relationship with %fines + sand and a negative association with hard substrates in stream channels. Diatom density showed the reverse associations with substrates.

Several metrics were used to test the efficacy of diatom assemblages and individual species as determinants of stream conditions in the Lahontan Basin. A multidimensional ordination showed elevation, canopy, specific conductance, pH, total Kjeldahl nitrogen, total phosphorus, and substrate conditions to be significantly correlated with diatom community structure. Diatom communities ordinated stream habitats into systems with coarse substrates, high canopy cover, and low and nutrient conditions from streams with fine substrates, low canopy cover, and elevated nutrient conditions. The latter systems were considered to have low ecosystem integrity.

An ANOSIM analysis of *a priori* grouping designations based on general stream conditions showed that diatom communities in habitats with abiotic conditions that correlated with high ecosystem integrity had significantly different diatom community compositions than those with low ecosystem integrity. Based on multidimensional ordination analyses, the diatom assemblages in the Lahontan Basin with high ecosystem integrity included *Achnantheidium minutissima*, *Eunotia bilunaris*, *Fragilaria arcus*, *Fragilaria tenera*, *Tabellaria flocculosa*, and *Tetracyclus rupestris*. In contrast, diatom assemblages with low ecosystem integrity included *Cyclotella meneghiniana*, *Melosira varians*, *Nitzschia frustulum*, *Nitzschia frustulum*, *Nitzschia palea*, and *Nitzschia sigmoidea*. The diatom taxa of *Amphipleura pellucida*, *Amphora coffeaeformis*, *Melosira varians*, *Nitzschia frustulum*, and *Nitzschia palea* were indicators of increased salinity.

Principal component analysis also showed a strong relationship between diatom species and selected abiotic determinants with strong loadings for canopy cover, conductance, nutrient concentrations, and substrate conditions. Similar relationships were found between diatom species and abiotic determinants as those outlined for the ordination analysis.

Motile diatom taxa of *Navicula*, *Nitzschia*, and *Surirella* were most abundant in assemblages with fine substrata and a degree high of embeddedness. Species such as *Cocconeis placentula* var. *euglypta*, *Cyclotella meneghiniana*, *Fragilaria ulna*, *Gyrosigma accuminatum*, *Nitzschia frustulum*, *Nitzschia palea*, *Nitzschia dissipata*, and *Rhopalodia gibba* were considered to be most tolerant of disturbed sites with substrata composed of a high percentage of fines and sand and a high degree of embeddedness.

An extensive literature search concurred with findings on associations between diatom assemblages in the Lahontan Basin and abiotic determinants that augment high sedimentation, nutrient concentrations, and salinity in stream channels.

INTRODUCTION

Benthic algae are critical components in most stream food webs (Stevenson 1996, Wehr and Sheath 2003). These organisms help stabilize substrata and provide food and habitat for many other organisms, especially invertebrates. Because benthic algal assemblages are attached to substrata, they serve as “micro environmental-loggers” for physical, chemical, and biological disturbances that occur in stream reaches during the time in which the assemblages develop.

Diatoms are especially good indicators of the environmental integrity of lotic ecosystems because they are common in most streams and provide the primary food source for many invertebrates and some juvenile fishes that reside in these systems (Dixit *et al.* 1992, Lowe and Pan 1996, Stevenson and Pan 1999). In addition, diatoms are useful monitors of change because: 1) they are readily dispersed and can invade a variety of habitats; 2) they are relatively easy to sample and create minimal impact to resident biota during collections; 3) their response time (generation time) lies between bacteria (hourly) and macroinvertebrates (triannual), and 4) diatoms are sensitive to subtle changes in environmental conditions and/or disturbances that may not visibly affect other communities, or may only affect other communities at lower levels of disturbance (Bahls 1993, Stevenson and Pan 1999, Stevenson and Bahls 1999).

In addition, the identification of diatoms is based on morphological features of their rigid walls (frustules) made of silicon dioxide (glass). This provides an opportunity to prepare permanent reference slides of diatom assemblages under different environmental regimes for use in assessing water conditions. Many investigators have used various diatom metrics to determine environmental conditions in streams including discharge and

hydraulic fluctuations (Duncan and Blinn 1989, Biggs and Hicky 1994, Benenati *et al.* 1998), light (Duncan and Blinn 1989, Hardwick *et al.* 1992), temperature (Squires *et al.* 1979, Tuchman and Blinn 1979, Blinn *et al.* 1989), salinity (Blinn and Bailey 2001), nutrients (Patrick 1977, Bahls *et al.* 1992, van Dam *et al.* 1994, Hill *et al.* 2000, Blinn and Bailey 2001), and herbivory (Colletti *et al.* 1987, Steinman *et al.* 1987).

Soft algae (non-diatoms) have also been used as indicators of biological integrity (Palmer 1962, Fjordingstad 1965, Palmer 1979, Hill *et al.* 2000), but may have less efficacy than diatoms in this respect due to their highly variable morphology. In contrast to diatoms, the complete identification of many species of soft algae requires reproductive structures and material may need to be cultured in the laboratory for full identification (Stevenson and Pan 1999). Also, soft algal material must be chemically preserved and therefore requires more space than diatom reference slides and needs continual maintenance.

The objectives of this study were to: 1) determine the utility of diatoms and soft algae as predictors of environmental conditions and ecosystem integrity for streams in the Lahontan Basin, and 2) identify those species which best serve as indicators of these environmental determinants and develop monitoring indices with diatoms and soft algae to assess the environmental health of streams throughout the basin.

METHODS

Abiotic determinants (elevation, discharge, dissolved oxygen, water temperature, specific conductance, alkalinity, pH, % canopy cover, % slope, and substrate composition) were taken from a larger data set collected for macroinvertebrates (SEE Herbst and Suk 1999). Chemical analyses for nutrients and major ions followed procedures outlined by Clesceri *et al.* (1998).

Algal samples were collected on submerged substrates from 65 stream sites throughout the Lahontan Basin during 1996 through 1999 and 2001 (SEE Table 1). Replicate collections ($n = 3$) were made at each stream site. Each collection (25 ml) was split equally for diatom and soft algal analyses. Samples for diatoms were digested following the procedures of Van der Werff (1955) and permanent Hyrax® slide mounts were prepared for each collection; i.e., one slide per sample. A minimum of 300 diatom valves was counted from each slide preparation. Density and relative abundance values for each diatom species were averaged from the set of three collections at each site in the final analyses. Percent of live diatoms (presence of intact chloroplast) were determined from each sample collected for soft algal analyses during 2001. Diatom nomenclature followed that of Fourtanier and Kociolek (1999). A diversity index (H') was calculated for diatom assemblages for each site (Shannon and Weaver 1949).

Soft algal analyses were performed on each collection ($n = 3$) with either a Sedgwick Rafter chamber or Palmer counting cell depending on cell densities. Protocols for cell density estimates followed that of Stevenson and Bahls (1999). Percent cover of aquatic macrophytes was also estimated at each stream site.

Relative abundance of motile diatoms in each stream habitat was used in a siltation index. Total relative abundance of *Navicula*, *Nitzschia*, and *Surirella* (NNS) species was estimated for each stream habitat as proposed by Stevenson and Bahls (1999). Species in these genera have some of the most advanced and efficient motility systems in diatoms (Lowe 2003), and are able to migrate to the surface if covered by silt. Therefore, these taxa may represent a good indicator of siltation disturbance (i.e., embeddedness, % fines + sand) in lotic environments. A paired Student *t* test was used to determine significant differences between % of fines and sand for the NNS index.

The following index for % fines + sand (FSI) was also used to examine the distribution of diatom taxa along substrate gradients:

$$FSI_x = \frac{\sum_{i=1}^{N_x} [\log_{10} (RA_i \cdot 100)] (\% \text{ fines \& sand}),}{N_x},$$

where RA_i = relative abundance (percent) of species x at a given site, and N = number of sites in which species x occurred. Similar indices were calculated for % embeddedness (EMBI), water temperature (TEMPI), total Kjeldahl nitrogen (TKNI), total phosphorus (TPI), and specific conductance (CONDI). These univariate indices provide a relative numeric scale to evaluate the response of various diatom taxa to potential disturbance factors in the Lahontan Basin. Blinn and Bailey (2001) have used similar metrics for determining the response of diatoms to salinity and nutrients in streams in Victoria, Australia.

Principal components analysis was used to determine relationships between

dependent (diatom taxa) and independent abiotic determinants with SYSTAT software (Version 5.1, Wilkinson 1989). Correlations between various paired combinations of diatom taxa and determinant variables were also calculated using Pearson's product-moment correlation coefficient with SYSTAT software. Significant differences between paired measurements were obtained from Bonferroni adjusted alpha values ($p < 0.05$) as well as under less conservative matrix of probabilities ($p < 0.05$).

In addition, non-metric multi-dimensional scaling ordination techniques were employed to investigate relationships between stream sites based on diatom community composition and to relate community composition to abiotic determinants. Ordinations were based on Bray-Curtis dissimilarity distances using relative frequencies of species occurrence for diatom communities (Minchin 1999). Twenty-six abiotic determinants were fitted into the ordination space as vectors to show relationships of diatom community composition along physicochemical gradients. The environmental determinants tested were: elevation, % canopy cover, % slope, discharge, dissolved oxygen, alkalinity, specific conductance, pH, water temperature, turbidity, embeddedness, SiO₂, total Kjeldahl, NO₃/NO₂, soluble reactive phosphorus, dissolved phosphorus, total phosphorus, SO₄, Ca, Mg, and substrate composition (% fines, % sand, % fines + sand, % gravel, % cobble, % boulder). The fit of abiotic vectors to diatom community composition and soft algal measurements were tested against 1000 random iterations of fit (Kantvilas and Minchin 1989). Significance levels for vector correlations were adjusted to experiment wide alpha levels of $p < 0.05$ using Dunn-Sidak sequential tests (Ury 1979). During field collections, sites were judged as either degraded or un-degraded depending on a holistic visual assessment of substrate conditions, canopy-

cover, salinity, and nutrient conditions, i.e., general health of the system. We tested the similarity of community composition between degraded and un-degraded sites using Analysis of Similarity (ANOSIM) routine (Clark 1993), which tests *a priori* grouping designations against 1000 random group designations in ordination space. Analyses were made using DECODA software (Minchin 1999).

RESULTS

Abiotic determinants: Values for the abiotic determinants used in the analyses of diatoms and soft algae are provided in Table 1. These data represent a subset of a larger data set collected for macroinvertebrates (SEE Herbst and Suk 1999).

Stream habitats ranged from 5340 to 9340 feet asl with Marble Creek the lowest site examined and Virginia Creek the highest in elevation (Table 1). Marble, Hot Springs, Trout (Bennett Flat), Deep, Heavenly, Saxon, Cold, Hidden Valley, north fork of Squaw, Nye, Rock, Hilton, Robinson, Burcham, McGee, Swauger, Parker, Deadman creek sites and Upper Truckee River (Forest) had canopy cover values >50%. Middle Squaw, East Walker, Perazzo, Dexter, Upper Owens, Poore, Kirman, Mammoth, O'Harell, Little Walker, and Bodie creek sites had <5% canopy cover.

Water temperatures at the time of collection ranged from a high of 22.8°C at lower Squaw Creek (9VI01) to a low of 7.3°C at Upper Truckee River (forest site). pH was generally circumneutral except for the Upper Truckee forest site and Marble, Convict SNARL, O'Harrel, Kirman, lower Cottonwood (99), McGee, and Swauger creek sites each with pH values ≥ 8 . The most dilute stream habitats included Upper Truckee River and Taylor, Independence, Hidden Valley, Lacey Canyon, Rush, Deadman, Dunderberg, Glass, Hilton, Little Walker, O'Harrel, Rock, Swauger, Parker, Virginia, and West Walker, and the north and south forks of Squaw creek sites with specific conductance values ≤ 60 $\mu\text{S}/\text{cm}$ (Table 1). Clearwater, Kirman, Lower Hot, Nye, and Upper Owens creeks had conductance values >200 $\mu\text{S}/\text{cm}$; Nye Creek (451 $\mu\text{S}/\text{cm}$) had the highest conductance.

The average total Kjeldahl nitrogen (TKN) and total phosphorus (TP) concentrations in the 27 streams examined during 2001 were 0.098 and 0.0192 mg/L, respectively (Table 1). Trout Creek at Bennett Flat, Alder Creek, and Trout Creek below Fallen Leaf had TKN concentrations >2 mg/L, and Trout Creek below Bennett Flat, Deep Creek, Convict SNARL, and Trout Creek below Fallen Leaf had TP concentrations >0.04 mg/L (Table 1). Streams with ≤ 0.1 mg/L TKN included East Martis, Hot Springs, Bear Creek, Squaw Creek middle, Squaw Creek lower, Taylor, Independence, Perazzo, Heavenly, Saxon, Cold, Hidden Valley Creek, Lacey, Rush, Convict SNARL, Robinson, Parker, and the north and south forks of Squaw creek sites. All of these stream sites had TP concentrations <0.016 (SE ± 0.005).

Bonferonni adjustments showed that temperature had a significant negative relationship with dissolved oxygen ($r = -0.45$), and elevation had a significant negative association with TKN ($r = -0.42$), % gravel ($r = -0.42$), and % cobble ($r = -0.40$; Table 2). As expected, % fines + sand showed a strong significant positive relationship to embeddedness ($r = 0.73$) and a significant negative relationship to cobble ($r = -0.42$). Both gravel and cobble showed a significant negative relationship to elevation ($r = -0.40$) and embeddedness showed a significant positive relationship to water temperature ($r = 0.40$). Specific conductance and alkalinity showed a highly significant positive relationship ($r = 0.90$). Also, both alkalinity and conductance showed a significant positive relationship to TKN and TP ($r = 0.52$). There were no significant correlations between silica and diatom cell density or any diatom species.

Under a less conservative matrix of probability, fines + sand also showed a significant negative relationship to gravel and boulder. Also, less conservative probabilities showed

elevation to have a negative association with alkalinity ($r = -0.29$) and conductance ($r = -0.27$). Patterns of negative relationships emerged between elevation and the abiotic determinants of dissolved oxygen and % slope (Table 2). No clear relationships were apparent between elevation and the determinants of water temperature, pH, discharge, canopy cover, or nutrients (Table 2).

Diatom distribution and ecology: Two hundred and twenty-five diatom taxa were identified from 65 stream habitats throughout the Lahontan Basin (Table 3). The identifications for some taxa are not complete and need further examination (SEE Appendix Tables 1a-1m). The mean frequencies for all diatom taxa for each stream site are provided in Appendix Tables 1a-1m. The average number of diatom taxa for the stream sites was 43 (SE ± 1). Clearwater had the highest number of taxa (67) and the north fork of Squaw Creek had the fewest taxa (22; Table 4).

Estimated densities of diatoms averaged 535,824 (SE $\pm 117,230$) valves/cm² for all 65 stream sites. East Martis, Alder, and Trout Creek at Bennett Flat had the highest diatom densities (≥ 2.4 million valves/cm²) and the forest site on the Upper Truckee River (18,610 valves/cm²) had the lowest diatom density (Table 4).

Diatom H' ranged from a low of 1.5 in the north fork of Squaw Creek to 4.6 in the Little Truckee River (Table 4). There were significant positive correlations between diatom H' and % gravel ($r = 0.53$) and % cobble ($r = 0.60$), while number of diatom taxa showed significant negative correlations to % fines + sand ($r = -0.41$), gravel ($r = -0.48$), and cobble ($r = -0.53$). Percent live diatoms showed significant positive associations with dissolved oxygen ($r = 0.65$) and canopy ($r = 0.58$), but negative correlations with

water temperature ($r = -0.41$) and gravel ($r = -0.43$; Table 2). Under a less conservative matrix of probability, pH showed a significant positive relationship to live diatoms ($r = 0.53$).

The overall relative frequencies and mean % embeddedness, % F + S, and elevation are presented in Table 5 for numerically important taxa. These 66 taxa represent 85% of the mean frequency of diatom taxa collected in the stream habitats. *Achnantheidium minutissima*, *Planorhynchium lanceolata*, and *Cocconeis placentula* var. *euglypta* had the highest mean frequencies in the Lahontan Basin at 13.1%, 8.3% and 7.5%, respectively.

Taxa that were present in at least 75% of the stream habitats included, *A. minutissima*, *C. placentula* var. *euglypta*, *Cymbella affinis*, *Fragilaria capucina*, *Fragilaria capucina* var. *vaucheriae*, *Fragilaria ulna*, *Gomphonema parvulum*, *Navicula cryptocephala*, *Navicula veneta*, *Nitzschia dissipata*, *Nitzschia frustulum*, *Nitzschia palea*, *P. lanceolata*, *Reimeria sinuata*, and *Rhoicosphenia abbreviata*. *Achnantheidium minutissima*, *F. capucina* var. *vaucheriae*, and *F. ulna* were found in all stream sites sampled.

The percentage of fines + sand (F + S) associated with stream substrates showed a significant positive relationship to the motile diatom index of NNS ($t = 9.1$; $p < 0.001$). Stream habitats with <10% F + S had mean NNS values of 0.15 ($n = 21$; SE ± 0.03), whereas those with $\geq 50\%$ F + S had mean NNS values of 0.27 ($n = 13$; SE 0.02, Table 6). Sites with both low NNS and F + S values included Parker, Bear, Independence, Taylor, Virginia, Green, Convict SNARL, McGee, Perazzo, Lacey, and Deep creeks (Table 6). In contrast, sites with high substrate indices included Clearwater, Burcham, Kirman,

Heavenly Valley, East Walker, Dexter, Bodie, O'Harrel, Adobe, and Lower Cottonwood creeks.

The association of numerically dominant taxa to several important abiotic determinants are presented in Table 7. A high value for each index indicates a strong positive association between the abiotic determinant and diatom species. For example, species with high values for temperature (TEMPI) are commonly associated with higher water temperatures in the Lahontan Basin. Therefore, species with low TEMPI values such as *Achnanthes exigua* (Acex), *Aulacoseira ambigua* (Auam), *Fragilaria arcus* (Frar), *Frustulia rhomboides* (Frrh), *Gomphonema truncatum* (Gotr), *Tabellaria flocculosa* (Tafl), and *Tetracyclus rupestris* (Teru) are commonly associated with colder water habitats and those with high TEMPI values such as *C. placentula* var. *euglypta* (Copleu), *F. capucina* (Frca), *F. capucina* var. *vaucheriae* (Frcav), *F. ulna* (Frul), *N. dissipata* (Nidi), *N. frustulum* (Nifr), *N. palea* (Nipa), and *P. lanceolata* (Plla) are associated with warmer water habitats.

The fines + sand (FSI) and embeddedness (EMBI) indices identified relationships between diatom taxa and stream substrate conditions in the Lahontan Basin. Low values for each index indicated an association with low degrees of fines + sand and embeddedness. For example, *Cyclotella stelligera* (Cyst), *Diatoma mesodon* (Dime), *Eunotia bilunaris* (Eubi), *F. arcus*, *Fragilaria tenera* (Frte), *G. truncatum*, *T. rupestris*, and *T. flocculosa* had low substrate indices (Table 7). In contrast, *Amphipleura pellilucida* (Ampel), *C. placentula* var. *euglypta*, *Cyclotella meneghiniana* (Cyme), *F. capucina*, *F. capucina* var. *vaucheriae*, *F. ulna*, *Gomphonema clevei* (Gocl), *Hantzschia amphioxys* (Haam), *N. dissipata*, *N. frustulum*, *N. palea*, and *Staurosira construens* (Stco)

were associated with stream habitats with a high percentage of fines + sand and a high degree of embeddedness.

Cluster analysis of EMBI values illustrated the relative relationships of numerically important diatom species to substrate conditions in the Lahontan Basin (Fig. 1). Diatom species in Group I were commonly associated with stream habitats with low embeddedness, while species in Group II included species more commonly associated with embeddedness. *Tetracyclus rupestris*, *D. mesodon*, *T. flocculosa*, *F. arcus*, and *E. bilunaris* were clustered within a subgroup in Group I with the lowest association with embeddedness, while *C. placentula* var. *euglypta*, *N. frustulum*, *N. dissipata*, *F. ulna*, and *G. clevei* were clustered in subgroups of Group II with the highest association with embeddedness. Other numerically important diatom species are distributed along the axis based on their association to embeddedness (Fig. 1).

Diatom species showed different responses to total Kjeldahl nitrogen (TKNI) and total phosphorus (TPI) indices. Cluster analyses of TKNI values showed that *T. rupestris*, *T. flocculosa*, *A. ambigua*, and *Epithemia sorex* (Eps) were most commonly associated with low total Kjeldahl nitrogen concentrations (Fig. 2), while *T. rupestris*, *T. flocculosa*, *F. tenera*, *Pinnularia divergens* (Pidi), *Pinnularia gibba* (Pigi), and *F. arcus* were most commonly associated with low total phosphorus concentrations (Fig. 3). *Cocconeis placentula* var. *euglypta*, *G. clevei*, *N. dissipata*, *N. palea*, *Rhoicosphenia abbreviata* (Rhab), *F. ulna*, and *P. lanceolata* (Plla) were commonly associated with habitats with high total Kjeldahl nitrogen concentrations, while *C. placentula* var. *euglypta*, *G. clevei*, *R. abbreviata*, *Gomphoneis herculeana* (Gohe), *Cyclotella*

meneghiniana (Cyme), *N. dissipata*, and *P. lanceolata* were commonly associated with high total phosphorus concentrations.

Cluster analysis of specific conductance index (SPI) values showed distinct diatom communities associated with salinity in three groups (Fig. 4). *Tetracyclus rupestris*, *T. flocculosa*, *F. arcus*, *A. ambigua*, *F. tenera*, *D. mesodon*, and *E. bilunaris* were clustered within Group I and most commonly associated with stream habitats with low salinities and *C. placentula* var. *euglypta*, *N. palea*, *C. meneghiniana*, *N. dissipata*, *E. sorex*, *N. frustulum*, and *R. abbreviata* were clustered in Group III or most commonly associated with stream habitats with higher salinities. Diatom species in Group II were commonly associated with habitats with moderate salinities (Fig. 4).

Principal component analysis showed strong relationships between diatom taxa and selected abiotic determinants with strong loadings for elevation, canopy cover, temperature, specific conductance, total Kjeldahl nitrogen (TKN), total phosphorus (TP), and embeddedness. *Aulacoseira ambigua*, *E. bilunaris*, *D. mesodon*, and *T. rupestris* showed strong positive loadings for elevation, slope, canopy cover, dissolved oxygen, and negative loadings for temperature, specific conductance, TKN, TP, and embeddedness (Fig. 5). *Fragilaria arcus*, *F. tenera*, *P. divergens*, *P. gibba*, and *T. flocculosa* also showed strong negative loadings for embeddedness, specific conductance, total Kjeldahl nitrogen, and total phosphorus.

Melosira varians (Meva), *G. herculeana*, *N. dissipata*, and *R. abbreviata* showed strong positive loadings for TP and embeddedness, while *A. pellucida*, *C. meneghiniana*, *Meridion circulare* (Meci), *N. frustulum*, and *N. palea* showed strong positive loadings for specific conductance and TKN (Fig. 5).

Nine taxa showed significant relationships to abiotic determinants when adjusted to Bonferroni values. Both *Didymosphenia geminata* ($r = 0.80$) and *E. sorex* ($r = 0.50$) showed significant positive correlations to discharge, and *G. clevei* ($r = 0.62$) showed a positive association to gravel. *Tetracyclus rupestris* showed a negative correlation to dissolved oxygen ($r = -0.47$) and a positive correlation to elevation ($r = 0.60$). Both *Surirella angustata* ($r = 0.68$) and *R. abbreviata* ($r = 0.73$) showed positive correlations to TKN, and *R. sinuata* showed a positive correlation to TP ($r = 0.77$). *Achnanthes exigua* showed a positive correlation to specific conductance ($r = 0.49$) and *N. palea* showed a positive correlation to Mg^{++} ($r = 0.69$).

Under a less conservative matrix of probability, several patterns were apparent. *Didymosphenia geminata* ($r = 0.46$), *Hantzschia amphioxys* ($r = 0.30$), *Nitzschia gracilis* ($r = 0.40$), and *R. abbreviata* ($r = 0.44$) showed significant positive associations with embeddedness; *R. gibba* ($r = 0.36$) showed a positive correlation to specific conductance; *C. meneghiniana* ($r = 0.55$), *N. dissipata* ($r = 0.41$), and *N. palea* ($r = 0.35$) showed positive correlations with TKN; and *Fragilaria crotonensis* ($r = 0.62$), *Nitzschia amphibia* ($r = 0.51$), and *R. abbreviata* ($r = 0.44$) showed positive correlations with TP.

Also, when adjusted to Bonferroni values, *A. ambigua* showed significant positive relationships to *E. bilunaris* ($r = 0.42$) and *T. flocculosa* ($r = 0.40$), and *D. mesosdon* showed a positive relationship to *E. bilunaris* ($r = 0.52$). In addition, *C. meneghiniana* showed positive correlations with *N. palea* ($r = 0.52$) and *N. sigmoidea* ($r = 0.72$); *M. varians* a positive correlation with *N. sigmoidea* ($r = 0.72$); *T. rupestris* showed a positive correlation ($r = 0.45$) to *F. capucina* var. *vaucheriae*; and *N. sigmoidea* showed positive correlations to *N. frustulum* ($r = 0.71$), and *N. palea* ($r = 0.88$).

Under a less conservative matrix of probability, *F. arcus* was positively correlated with *T. rupestris* ($r = 0.30$), and *N. dissipata* showed positive correlations with *M. varians* ($r = 0.41$), *N. frustulum* ($r = 0.27$), *N. palea* ($r = 0.32$), *N. sigmoidea* ($r = 0.44$), and *R. abbreviata* ($r = 0.27$).

Bonferroni adjusted tests showed a significant positive relationship between diatom density and TKN ($r = 0.56$), but not with diatom density and TP ($r = 0.07$). There were also significant positive correlations between diatom density and aquatic macrophytes ($r = 0.50$) and density of the filamentous green alga, *Stigeoclonium* ($r = 0.41$), but not with *Cladophora* ($r = 0.23$) or cyanobacteria density ($r = -0.02$).

A non-metric multi-dimensional ordination of 65 stream habitats based on the relative abundance of 51 numerically important diatom taxa was completed in three dimensions with a minimum stress of 0.144. Additional dimensions did not significantly reduce stress or enhance interpretation. Differences in communities were best explained by vectors of elevation (MAX 0.523, $p = 0.001$), canopy (MAX 0.511, $p = 0.001$), pH (MAX 0.553, $p = 0.001$), conductance (MAX 0.482, $p = 0.001$), dissolved oxygen (MAX 0.410, $p = 0.012$), total phosphorus (MAX 0.615, $p = 0.001$), total Kjeldahl nitrogen (MAX 0.535, $p = 0.037$), and substrate conditions (% fine + sand, MAX 0.412, $p = 0.028$; % gravel MAX 0.682, $p = 0.001$; cobble MAX 0.638, $p = 0.001$). Those abiotic vectors with the longest lines best explain relationships between diatom community structure. Also, habitats aligned along abiotic vectors show strong correlations to that specific determinant with the strongest correlations near the terminal point on the vector.

Stream diatom communities in habitats located on the upper left side of Fig. 6 such as Swauger, Little Walker, McGee, Convict (96), Green, Deep, Virginia, and Taylor

creeks showed positive correlations to habitats with hard substrates and reduced nutrient concentrations (total Kjeldahl nitrogen and total phosphorus). Over 85% of the stream habitats in the upper left side of the ordination are associated with diatom communities in hard substrates and reduced nutrients. These conditions generally suggest high quality habitats with high ecosystem integrity and biological diversity (Platts *et al.* 1983, Raven *et al.* 1998, Barbour *et al.* 1999).

In contrast, stream diatom communities in habitats located on the right side of Fig. 6 such as Bodie (96), Clearwater (97), E. Martis, Hot Springs, Juniper, Little Truckee, North Prosser, Nye, Rush, Trout (BF), Trout (BFL), Sagehen, Saxon and Slinkard creeks showed strong positive correlations to fines + sand and/or total Kjeldahl nitrogen. Nearly 70% of the stream habitats on the right side of the ordination are associated with diatom communities in fine substrates, low canopy, and elevated nutrients, especially total Kjeldahl nitrogen. These conditions generally suggest low quality habitats with low ecosystem integrity and biological diversity (Platts *et al.* 1983, Raven *et al.* 1998, Barbour *et al.* 1999).

In general, mean diatom cell density showed a positive association with hard substrates, whereas mean cyanobacteria cell density showed a strong positive association with fine substrates (Fig. 6). Stream diatom communities in habitats along and/or near the conductance vector in Figure 6 suggest a positive relationship to specific conductance. These include the stream habitats of Lower Hot, Kirman, and Poore.

An ANOSIM analysis of *a priori* grouping designations based on general stream conditions (substrate and canopy) showed that diatom communities in habitats with abiotic conditions correlated with high ecosystem integrity and biological diversity as

described above (generally on the left side of Fig. 6), and low ecosystem integrity and biological diversity (generally on the right side of Fig. 6) had significantly different diatom community compositions (ANOSIM $R = 0.156$; $p = 0.0001$).

Species averages fitted into ordination space indicated that many diatom species were associated with the measured environmental determinants (Fig. 7). Habitats aligned along abiotic vectors show strong correlations to that specific determinant with the strongest correlations near the terminal point on the vector. Diatom taxa clustered on the upper left side of the plot, including *Achnantheidium minutissima* (Acmi), *Fragilaria arcus* (Frar), *Fragilaria tenera* (Frte), *Pinnularia divergens* (Pidi), *Tabellaria flocculosa* (Tafl), and *Tetracyclus rupestris* (Teru) formed assemblages in habitats with coarse substrates and low total Kjeldahl nitrogen concentrations.

In contrast, species on the right side of the plot such as *Cocconeis placentula* var. *euglypta* (Copleu), *Cyclotella meneghiniana* (Cyme), *Melosira varians* (Meva), *Nitzschia frustulum* (Nifr), *Nitzschia palea* (Nipa), and *Rhoicosphenia abbreviata* (Rhab), formed assemblages in habitats with a high percentage of fines + sand and total Kjeldahl nitrogen concentrations. *Cocconeis placentula* var. *euglypta* and *R. abbreviata* showed especially strong positive correlation with total Kjeldahl nitrogen (Fig. 7).

Soft algal distribution and ecology: The average density of soft algae per site was 357,778 (SE $\pm 92,923$) cells/cm² or about 40% of the total algal composition (diatom and soft algae) in the stream sites examined (Table 4). Average total cell density of combined diatom and soft algae per site was 893,037 (SE $\pm 147,230$) cells cm². Sites at lower Cottonwood, East Walker, Marble, Nye, Bodie, Lower Hot, Kirman, Upper Owens, and

Perazzo creeks had soft algal densities of $>1,000,000$ cells cm^2 . Sites at Little Walker, Dunderburg, Burcham, Trout (Bennett Flat), Saxon, Hidden Valley, and Parker creeks had low densities of soft algae ($<10,000$ cells/ cm^2).

About 68% of the soft algal densities were cyanobacteria (*Phormidium*, *Nostoc*, *Calothrix*, and *Chroococcus*). The average number of cyanobacterian species per site was 2.6 (SE \pm 0.2). Cyanobacteria were recorded at all sites with highest densities at lower Cottonwood, E. Walker, Marble, Nye, Bodie, Lower Hot, and Upper Owens stream sites. Mean density of cyanobacteria per site was 241,642 (SE \pm 65,603) cells cm^2 .

The average number of green algal species per site was 2 (SE \pm 0.2). Branched, filamentous species of *Cladophora* and *Stigeoclonium* were the most common green algal species with mean densities of 61,126 (SE \pm 1,436) and 38,785 (SE \pm 18,446) cells cm^2 , respectively. Highest densities of *Cladophora* and *Stigeoclonium* were found at Adobe, Clearwater, Bodie, Kirman, E. Walker, Hot Springs, Robinson, E. Martis, and Little Truckee. No filamentous green algae were collected at Deadman, Deep, Dog, Dunderberg, McGee, Little Walker, Marble, Parker, Saxon, Independence, south fork of Squaw, Alder, and Swauger creek sites. Mean density of green algae per site was 111,138 (SE \pm 7800) cells cm^2 .

Bonferroni adjusted values showed a significant positive association between soft algal density and conductance ($r = 0.55$), alkalinity ($r = 0.52$), % fines + sand ($r = 0.56$), and % embeddedness ($r = 0.56$; Table 2). Cyanobacteria density showed a similar significant relationship to these four abiotic determinants (Table 2). There was also a significant positive correlation between densities of *Stigeoclonium* and diatoms ($r = 0.41$), but not between *Cladophora* and diatom density. Also, *Stigeoclonium* density

showed a significant positive correlation to the diatom species *N. palea* ($r = 0.50$). Under a less conservative matrix of probability, % slope showed a positive association with soft algal density ($r = 0.31$) and cyanobacteria ($r = 0.27$).

DISCUSSION

Diatom assemblages and individual species provided reliable indicators of stream conditions on sedimentation, nutrients, and salinity throughout the Lahontan Basin. A multi-dimensional ordination showed that elevation, canopy, pH, specific conductance, dissolved oxygen, total phosphorus, total Kjeldahl nitrogen, and substrate conditions were the most significant environmental determinants influencing diatom community structure in the Lahontan Basin. Principal components analysis showed similar patterns for these same abiotic determinants. Indices for motile diatoms, % embeddedness, and % fines + sand also validated the findings for substrate conditions. The interactions between these abiotic factors produced highly varied diatom assemblages across different stream habitats, but with distinctive and similar diatom communities in habitats with similar abiotic conditions.

An ANOSIM analysis of *a priori* grouping designations based on general stream conditions showed that diatom communities in habitats with abiotic conditions correlated with high ecosystem integrity had significantly different diatom community compositions than those with low ecosystem integrity. Diatom communities ordinated stream habitats into streams with coarse substrata, high canopy cover, and low nutrient concentrations from systems with fine substrata, low canopy cover, and high nutrients, especially total Kjeldahl nitrogen. The diatom species of *Achnantheidium minutissima*, *Fragilaria arcus*, *Fragilaria tenera*, *Pinnularia divergens*, *Tabellaria flocculosa*, and *Tetracyclus rupestris* formed assemblages in habitats with coarse stable substrata, high canopy cover, and low nutrient concentrations. These taxa are considered to represent stream habitats with relatively high ecological integrity in the Lahontan Basin. In an

extensive, long-term survey of diatom communities in streams throughout Montana, USA, Bahls (1993) found that most of the above taxa were highly sensitive to pollution disturbance, including siltation and nutrient enrichment.

In contrast, diatom species such as *Cocconeis placentula* var. *euglypta*, *Cyclotella meneghiniana*, *Melosira varians*, *Nitzschia frustulum*, *Nitzschia palea*, and *Rhoicosphenia abbreviata* formed assemblages in habitats with unstable fine substrates, low canopy cover, and high nutrient concentrations, especially for total Kjeldahl nitrogen. Many of these species are frequently associated with lower elevation streams with a high degree of embeddedness, abundant aquatic macrophytes and/or filamentous green algae, and somewhat elevated conductivity and nutrients (Lowe 1974, Patrick and Reimer 1976, Bahls et al. 1984). Bahls (1993) indicated that most of the above taxa were either moderately or highly pollution tolerant. Ordinations on diatoms in the Lahontan Basin also showed that *Gomphoneis herculeana*, *Nitzschia sigmoidea*, and *Surirella angustata* to be tolerant to pollution, but Bahls reported these taxa to be highly sensitive to pollution or systems with low ecological integrity.

The distribution of the ordinated stream habitats in Figure 6 based on diatom community structure showed some inconsistencies. Although over 85% of the stream habitats in the upper left portion of the ordination plot were made up of systems with high ecosystem integrity, several habitats with low ecosystem integrity, including O'Harrel and Heavenly creeks, were positioned in this area. This likely indicated subtle interactions between several abiotic determinants each having an influence on the structure of diatom communities. Perhaps in O'Harrel and Heavenly creeks,

conductance and dissolved oxygen in addition to coarse substrates, were important determinants for diatom community structure.

Likewise, nearly 70% of the stream habitats on the right side of the ordination plot tended to be somewhat degraded with low ecosystem integrity. However, stream habitats of Independence, Robinson, Bear, Upper Owens, and Hidden Valley tended to have abiotic conditions with high ecosystem integrity. Again, the diatom assemblages for these stream habitats may have been influenced by several abiotic determinants and hence provided a less clear pattern. For example, elevation, in addition to high total Kjeldahl nitrogen concentrations and fine substrates, may have influenced the structure of diatom communities. Kefford (1998) and Blinn and Bailey (2001) discussed similar relationships between salinization and nutrients for invertebrates and diatom communities, respectively, for streams of Victoria, Australia.

Individual diatom taxa showed subtle differences for specific environmental conditions. For example, both ordinations and principal components analysis showed *A. pellucida*, *C. meneghiniana*, *N. frustulum*, *N. palea*, and *N. sigmoidea* as good indicators for elevated concentrations of total Kjeldahl nitrogen, while *A. pediculus*, *C. placentula* var. *euglypta*, *Planothidium lanceolata*, *Reimeria sinuata*, and *R. abbreviata* are good indicators of elevated total phosphorus.

Utilization of these indicator taxa may have utility in recognizing differences in land-use practices. For example, streams with high relative abundances of the first diatom assemblage may indicate extensive use of crop fertilization and delivery of nitrogen to stream channels, whereas high relative abundances of the second assemblage may infer runoff from livestock feedlots. Blinn and Bailey (2001) also reported that *C. placentula*

var. *euglypta*, *C. meneghiniana*, *N. frustulum*, and *N. palea* are good indicators of nutrient enrichment. Other workers have also found these taxa to be good indicators of nutrient enrichment (Christie and Smol 1993, Hall and Smol 1995, Reavie et al. 1995).

Also, individual diatom taxa showed subtle associations to elevated specific conductance even though levels were relatively low and over a relatively narrow range (16-451 μ S). For example, the taxa *Amphipleura pellicuda*, *Caloneis silicula*, *Ctenophora pulchella*, *Hantzschia amphioxys*, *Nitzschia frustulum*, *Nitzschia palea*, and *Rhopalodia gibberula* showed a close association with streams such as Clearwater, Kirman, and Nye with higher conductivity levels. Other studies have shown a similar relationships between these diatom species and higher conductance (Fritz 1990, Blinn 1993, Wilson *et al.* 1994, Cumming and Smol 1993, Herbst and Blinn 1998, Blinn and Bailey 2001). These diatom taxa may provide early warning signals of increased salinization in semi-arid regions of the Lahontan Basin due to irrigation activities (Williams 1987 & 1999, Blinn and Bailey 2001).

Table 8 summarizes potential diatom taxa that may have utility in providing early warning signals for changes in the ecological integrity of streams in the Lahontan Basin. The summary table is based on results of community ordinations and principal component analyses for diatom communities in the Lahontan Basin as well as from literature on relationships between diatom distributions and abiotic determinants (Bahls *et al.* 1992, Christie and Smol 1993, van Dam *et al.* 1994, Reavie *et al.* 1995, Hill *et al.* 2000, Blinn and Bailey 2001). The occurrence of increased relative abundances of any one or all of these diatom taxa within a group may indicate changes in stream conditions.

The relatively high levels of filamentous green algae, especially *Stigeoclonium* spp. in Dexter, lower Cottonwood, Clearwater, Burcham, and Bodie creeks, suggest these streams receive higher nutrients from surrounding watersheds. These filamentous green algae have been reported to show close correlations to nutrient enrichments of phosphorus and nitrogen (Palmer 1969, Bahls 1984, Christie and Smol 1993, Wilson *et al.* 1994, Hall and Smol 1995, Reavie *et al.* 1995, Blinn and Bailey 2001). Collections during 2000 support this pattern since Little Truckee, E. Martis, and Hot Springs also had high densities of *Cladophora* and *Stigeoclonium* that coincided with their elevated total Kjeldahl nitrogen and total phosphorus concentrations (Table I). The lack of filamentous green algae in Deadman, Deep, Dog, Dunderberg, McGee, Little Walker, Marble, and Swauger suggest relatively low nutrient levels in these systems (Palmer 1969). All of these streams, except Dog and Marble had specific conductance values <100 $\mu\text{S}/\text{cm}$ that also suggests lower nutrients.

The lack of any clear patterns between streams with high and low ecological integrity for both number of taxa and H' diversity suggest that nutrient enrichment and/or salinity levels have not reached high enough concentrations in the sampled streams to influence these indices. A number of studies have shown that diatom species and diversity are diminished under elevated organic enrichment (Nather Khan 1990, Whitton *et al.* 1991) and salinity (Fritz 1990, Blinn 1993, Blinn and Bailey 2001). The lack of change in the region demonstrates the resilience of this group of organisms to subtly (dramatically) shift assemblages under modified (disturbed) conditions, yet maintain their functional role to produce oxygen and food for the system. It further provides support as to why diatom species and assemblages are good indicators of environmental change.

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TABLES & FIGURES

TABLE 1. Selected abiotic determinants for 65 stream sites in the Lahontan Basin, USA during 1996-1999 and 2001. Stream sites are arranged along an elevational gradient. Collection dates are provided in parentheses. DO = dissolved oxygen, Temp = water temperature, Cond = specific conductance, F + S = % fines and sand, Embed = % embeddedness, TKN = total Kjeldahl nitrogen, TP = total phosphorus, and na = not available.

Stream	Elevation (ft)	Discharge m ³ /s	DO (mg/L)	Temp (°C)	Cond μS/cm	Alkalinity (mg/L)	pH	Canopy (%)	Slope (%)	F + S (%)	Embed (%)	TKN (mg/L)	TP (mg/L)
Marble Cr (7VII97)	5340	0.034	8.8	17.4	171	108	8.1	96.0	5.8	68.3	47.2	na	na
East Martis Cr (10VII01)	5840	0.00004	9.8	14.3	159	94	7.4	30.4	0.6	23.3	4.6	0.108	0.031
Hot Springs Cr (22VIII01)	6160	0.006	9.2	13.8	138	73	7.9	58.0	1.3	33.3	29.4	0.091	0.015
Bear Cr (10VII01)	6180	0.03	8.0	19.8	113	80	7.5	33.4	4.3	4.0	19.6	0.091	0.013
North Prosser Cr (11VII01)	6180	0.069	7.9	21.2	103	62	7.1	21.8	0.6	36.0	47.2	0.128	0.014
Squaw Cr middle ((VII01)	6180	0.001	4.4	21.7	167	51	6.6	3.7	0.1	49.3	24.2	0.091	0.007
Trout Cr Bennett Flat (11VII01)	6180	0.07	8.4	12.9	196	88	7.3	67.3	0.5	20.0	11.0	0.246	0.043
Alder Cr (11VIII01)	6220	0.013	8.4	13.2	141	73	7.5	45.6	1.2	6.7	24.2	0.207	0.016
Upper Truckee Barton (29IX99)	6240	0.200	8.3	8.8	93	46	7.9	11.0	0.2	32.0	5.2	na	na
Juniper Cr (10VII01)	6260	0.012	6.8	17.4	156	70	7.7	20.7	2.9	1.3	38.8	0.112	0.025
Deep Cr (27VIII01)	6280	0.06	8.8	14.0	143	74	8.0	83.2	5.0	14.6	28.6	0.157	0.054
Sagehen Cr (12VII01)	6280	0.053	8.0	18.0	173	104	7.6	27.8	2.1	8.0	15.4	0.102	0.022
Squaw Cr lower (9VII01)	6280	0.002	7.9	22.8	161	64	6.6	7.1	0.2	26.7	15.2	0.097	0.012
Taylor Cr (31VII01)	6340	0.094	8.1	22.1	28	20	6.5	48.0	1.2	5.3	10.8	0.064	0.004
Independence Cr (13VI01)	6420	0.144	9.0	12.0	54	36	6.8	34.3	2.1	5.3	0.0	0.088	0.008
Little Truckee River (13VII01)	6460	0.039	8.0	18.7	82	68	6.7	13.3	0.7	5.3	4.4	0.121	0.017
Upper Truckee Forest (30IX99)	6500	0.088	10.4	7.3	35	32	8.6	51.0	1.8	5.0	10.4	na	na
East Walker Cr (10IX96)	6520	0.630	10.5	14.1	157	81	7.5	0.0	0.2	0.0	40.0	na	na
Perazzo Cr (12VII01)	6550	0.015	8.4	15.3	78	56	6.3	4.2	0.3	9.3	2.2	0.073	0.006
Slinkard Cr (30VII97)	6560	0.015	8.4	12.3	174	130	7.7	23.0	2.1	73.3	37.0	na	na
Adobe Cr (2VIII96)	6600	0.048	7.6	18.0	122	72	7.4	38.0	0.2	100.0	100.0	na	na
Heavenly Cr (30VII01)	6600	0.0005	9.6	12.3	63	42	7.2	72.5	5.5	29.4	55.4	0.053	0.015
Saxon Cr (22VIII01)	6620	0.01	9.0	15.3	65	40	7.5	67.9	1.1	51.3	30.4	0.055	0.021
Cold Cr (23VIII01)	6650	0.152	9.8	7.9	67	42	7.7	81.7	3.0	30.7	11.4	0.086	0.020
Hidden Valley Cr (30VII01)	6680	0.017	9.6	11.9	58	38	7.3	83.1	7.1	27.0	15.0	0.071	0.022
Dexter Cr (3IX96)	6780	0.190	9.0	15.3	99	60	7.3	3.0	0.3	50.0	19.0	na	na
Squaw Cr north fork (VII01)	6780	0.005	8.6	12.2	52	25	6.4	65.3	3.2	13.3	32.8	0.058	0.004
Nye Cr (15VII98)	6800	0.002	6.6	21.0	451	162	8.0	71.0	7.9	93.3	73.3	na	na
Upper Owens Cr (24VIII99)	6800	4.454	7.3	19.1	316	163	7.3	1.0	1.4	25.3	13.2	na	na
Squaw Cr south fork (9VII01)	6820	0.006	8.8	12.3	18	64	7.0	46.1	7.6	13.3	20.4	0.081	0.007

TABLE 1 (Cont.).

Stream	Elevation (ft)	Discharge m ³ /s	DO (mg/L)	Temp (°C)	Cond μS/cm	Alkalinity (mg/L)	pH	Canopy (%)	Slope (%)	F + S (%)	Embed (%)	TKN (mg/L)	TP (mg/L)
Lacey Canyon Cr (12VII01)	6830	0.013	8.6	15.2	42	25	7.7	34.1	1.8	12.0	10.0	0.072	0.006
Rush Cr (26VII01)	6840	1.978	8.5	17.2	60	34	7.8	26.3	1.4	4.0	64.0	0.104	0.006
Lower Hot Cr (17VI98)	6880	0.127	8.0	16.4	203	108	7.6	26.8	7.6	72.0	5.4	na	na
Poore Cr (31VII97)	6910	0.045	9.0	16.5	166	108	7.5	2.3	0.6	21.3	16.4	na	na
Rock Cr (22VI99)	6920	1.145	8.5	13.3	16	12	7.5	64.3	0.7	29.3	16.8	na	na
Convict Cr SNARL (16VII99)	6920	1.468	8.2	14.0	119	58	8.3	49.6	1.2	5.3	10.0	na	na
O'Harrel Cr (29VII99)	6940	0.001	6.8	20.0	51	42	8.2	17.1	4.3	49.3	35.2	na	na
Hilton Cr (17VII98)	6950	0.012	8.5	15.0	30	20	7.1	64.0	5.1	45.0	24.0	na	na
Kirman Cr (18VIII99)	6980	0.001	6.3	21.0	223	118	8.2	4.7	1.5	42.7	28.8	na	na
Convict Cr SNARL (21VI01)	7000	0.861	9.0	14.5	165	82	7.7	44.0	1.2	6.6	4.6	0.097	0.097
Cottonwood Cr Lower (13VIII99)	7020	0.129	10.0	9.2	88	54	8.7	26.3	1.2	17.3	11.4	na	na
Mammoth Cr (18VIII97)	7100	0.481	6.8	na	122	64	7.2	2.2	4.5	14.0	25.0	na	na
West Walker Cr (20VIII99)	7120	2.152	8.3	11.3	24	24	7.4	48.7	0.4	12.0	2.0	na	na
Convict Cr SNARL (10VII96)	7130	1.544	8.1	16.5	126	65	7.3	43.0	1.3	9.0	8.0	na	na
O'Harell Cr (18VII96)	7140	0.001	8.1	21.5	72	44	7.4	2.0	4.2	67.0	38.6	na	na
Robinson Cr (26VII01)	7150	0.188	8.8	11.7	89	43	7.9	61.7	2.1	12.0	13.6	0.042	0.008
Little Walker Cr (21VIII96)	7157	1.240	8.4	10.0	57	52	7.3	4.0	2.2	7.0	12.2	na	na
Cottonwood Cr Lower (29VII96)	7200	0.009	2.8	19.0	157	82	7.1	33.0	2.1	100.0	100.0	na	na
Clearwater Cr (26VII96)	7230	0.020	7.0	22.2	238	160	7.4	49.0	2.1	67.0	26.6	na	na
Clearwater Cr (10VII97)	7300	0.005	5.3	13.5	270	162	7.7	22.5	0.9	36.6	23.2	na	na
Dog Cr (9VII97)	7460	0.570	na	14.0	184	60	7.1	14.3	2.5	29.3	17.8	na	na
Burcham Cr (25VIII97)	7500	0.023	8.5	11.8	65	60	7.6	85.0	2.1	36.7	41.1	na	na
Glass Cr (23VII97)	7505	0.229	9.4	8.5	34	44	7.7	30.0	1.0	13.3	32.8	na	na
McGee Cr (21VII99)	7550	1.683	9.3	11.0	77	50	8.4	74.6	1.9	9.3	0.0	na	na
Arastra Cr (16VI98)	7620	0.039	8.7	13.7	73	44	7.9	19.5	4.6	8.0	10.4	na	na
Green Cr (1VIII96)	7660	1.830	7.3	16.0	67	20	7.3	40.0	1.0	8.0	8.6	na	na
Bodie Cr (23VII96)	7770	0.007	6.3	22.0	174	98	7.4	4.0	0.7	72.0	32.6	na	na
Trout Cr BFL (31VII01)	7750	0.07	8.4	12.9	196	88	7.3	49.1	1.3	20.0	11.0	0.246	0.043
Swauger Cr (17VIII99)	7880	0.086	7.6	13.1	52	32	8.2	56.5	3.2	14.7	6.4	na	na
Bodie Cr (16VII98)	7900	0.017	8.0	22.0	148	72	7.2	1.1	3.1	55.0	31.2	na	na

TABLE 1 (Cont.).

Stream	Elevation (ft)	Discharge m ³ /s	DO (mg/L)	Temp (°C)	Cond μS/cm	Alkalinity (mg/L)	pH	Canopy (%)	Slope (%)	F + S (%)	Embed (%)	TKN (mg/L)	TP (mg/L)
Deep Cr (31VII96)	8940	0.021	7.6	14.2	93	48	7.3	25.0	3.2	10.0	21.6	na	na
Parker Cr (26VII01)	8160	0.433	8.8	16.3	56	25	7.3	81.2	0.7	2.7	7.8	0.089	0.006
Deadman Cr (6VII99)	8265	0.482	8.0	13.5	34	22	7.8	52.4	2.5	5.3	8.0	na	na
Dunderberg Cr (18VII97)	8340	0.278	8.7	9.1	44	42	7.7	15.0	2.8	16.0	12.2	na	na
Virginia Cr (11VII97)	9340	0.929	8.2	14.9	39	28	7.1	23.0	7.1	6.7	10.6	na	na

TABLE 2. Matrix of Pearson correlation coefficients for abiotic determinants and biotic parameters for 65 stream sites in the Lahontan Basin, USA. Q = discharge; DO = dissolved oxygen; Cond = specific conductance; Temp = water temperature; Alka = alkalinity; % F+S = % fines and sand; % Embed = % embeddedness; TKN = total Kjeldahl nitrogen; TP = total phosphorus; Diatom H' = Shannon-Weaver H'; diatom taxa = number of diatom taxa; PLIVEDI = % live diatoms; CYANCM = cyanophyta density; TSOFT = soft algal density; TDSD = total diatom and soft algal density.

	Elevation	Q	DO	Temp	Cond	Alka	pH	Canopy	Slope	%F+ S	%Gravel	%Cobble	%Embed	TKN	TP
Q	0.15														
DO	-0.28	0.04													
Temp	-0.14	0.15	*-0.45												
Conduct	-0.27	0.08	-0.29	0.39											
Alkalinity	-0.29	0.04	-0.23	0.31	*0.90										
pH	0.09	0.05	0.21	-0.34	0.09	0.13									
Canopy	-0.09	-0.08	0.28	-0.34	-0.16	-0.22	0.24								
Slope	-0.28	-0.19	0.25	-0.18	-0.19	-0.13	-0.15	0.30							
% F&S	-0.11	-0.27	-0.26	0.39	*0.41	*0.40	0.01	-0.02	0.13						
% Gravel	*-0.42	0.23	0.14	0.15	0.05	0.02	-0.07	0.12	-0.18	-0.27					
% Cobble	*-0.40	-0.16	0.23	0.01	-0.13	-0.13	-0.30	0.22	-0.02	*-0.42	*0.60				
% Embed	-0.09	-0.21	-0.31	*0.40	0.26	0.24	0.01	0.07	0.11	*0.73	-0.16	-0.18			
TKN	*-0.42	0.02	-0.13	0.05	*0.61	*0.57	0.15	-0.03	-0.21	-0.24	0.35	0.06	-0.04		
TP	-0.08	0.16	0.19	-0.13	*0.54	*0.52	0.38	0.19	0.01	-0.04	0.15	0.18	-0.16	0.36	
Diatom H'	-0.32	-0.13	0.12	0.14	0.02	0.05	-0.10	-0.01	-0.15	-0.17	*0.53	*0.60	-0.03	0.26	0.04
Diatom taxa	0.15	0.12	-0.24	0.22	0.24	0.29	0.22	-0.38	-0.06	*0.41	*-0.48	*-0.53	0.28	0.24	-0.15
PLIVEDI	0.14	0.06	*0.65	*-0.41	-0.23	-0.13	0.10	*0.58	0.35	0.07	*-0.43	0.09	0.10	-0.16	0.16
CYANCM	-0.04	0.02	-0.34	0.31	*0.63	*0.58	0.10	-0.05	0.26	*0.58	-0.31	-0.31	*0.42	0.24	-0.11
TSOFT	-0.09	-0.01	-0.28	0.36	*0.55	*0.52	0.10	-0.03	0.31	*0.56	-0.33	-0.33	*0.56	0.22	-0.16
TDSD	-0.36	-0.15	-0.18	0.31	*0.51	*0.50	-0.10	-0.07	0.04	0.31	0.27	0.01	0.23	*0.56	0.06

* P < 0.05 (Bonferroni Probabilities)

TABLE 3. List of diatom taxa collected from 65 stream sites in the Lahontan Basin, USA.

Achnanthes exigua Grun.
Achnanthes hungarica Grun.
Achnanthes laevis Oestrup
Achnanthes laterostrata Hust.
Achnanthes linearis (W. Sm.) Grun.
Achnanthidium minutissima (Kütz.) Czar.
Amphipleura pellucida (Kütz.) Kütz.
Amphora coffeaeformis (Ag.) Kütz.
Amphora ovalis (Kütz.) Kütz.
Amphora pediculus (Kütz.) Grun.
Amphora veneta Kütz.
Anomoeoneis sphaerophora (Ehr.) Pfitz.
Anomoeoneis sphaerophora f. *costata* (Kütz.) Schmid.
Anomoeoneis vitrea (Grun.) Grun.
Asterionella formosa Hass.
Aulocoseira ambigua Grun. Simonsen
Aulocoseira distans (Ehr.) Simonsen
Aulocoseira granulata (Ehr.) Simonsen
Aulocoseira islandica O. Muell.
Aulocoseira italica (Ehr.) Simon.
Caloneis amphisbaena (Bory) Cl.
Caloneis bacillum (Grun.) Cl.
Caloneis molaris (Grun.) Krammer
Caloneis schumanniana (Grun.) Cl.
Caloneis silicula (Ehr.) Cl.
Caloneis sublinearis (Grun.) Krammer
Caloneis tenuis (Greg.) Krammer
Cocconeis pediculus Kütz.
Cocconeis placentula Ehr.
Cocconeis placentula var. *euglypta* (Ehr.) Cl.
Cocconeis placentula var. *lineata* (Ehr.) V.H.
Cocconeis placentula var. *pseudolineata* Geitler
Ctenophora pulchella (Ralfs) Williams & Round
Cyclotella bodanica Grun.
Cyclotella meneghiniana Kütz.
Cyclotella stelligera Cl. & Grun.
Cyclostephanos novazeelandiae (Cl.) Round
Cymatopleura solea (Bréb) W. Sm.
Cymbella affinis Kütz.
Cymbella amphicephala Naeg. ex Kütz.
Cymbella aspera (Ehr.) Cl.
Cymbella cistula (Ehr.) Kirch.
Cymbella cymbiformis var. *nonpunctata* Fontell
Cymbella gracilis (Ehr.) Kütz.
Cymbella latens Krasske
Cymbella mexicana (Ehr.) Cl.
Cymbella minuta Hilse ex. Rabh.
Cymbella naviculiformis (Auers.) Cl.
Cymbella prostrata (Berk.) Cl.
Cymbella proxima Reimer
Cymbella silesiaca Bleisch in Rabh.
Cymbella subcuspidata Krammer
Cymbella tumida (Breb.) Van Heurck

TABLE 3. (Cont.)

<i>Cymbellonitzschia diluviana</i> Hust.
<i>Denticula elegans</i> Kütz.
<i>Diatoma hyemalis</i> (Roth) Heiberg
<i>Diatoma mesodon</i> (Ehr.) Kütz.
<i>Diatoma tenuis</i> Ag.
<i>Diatoma vulgaris</i> Bory
<i>Didymosphenia geminata</i> (Lyngb.) M. Schmidt
<i>Diploneis elliptica</i> (Kütz.) Cl.
<i>Diploneis oblongella</i> (Naeg. ex. Kütz) Ross
<i>Diploneis ovalis</i> (Hilse) Cl.
<i>Encyonopsis microcephala</i> (Grun.) Krammer
<i>Epithemia adnata</i> (Kütz.) Bréb.
<i>Epithemia argus</i> (Ehr.) Kütz.
<i>Epithemia argus</i> var. <i>alpestris</i> (W. Sm.) Grun.
<i>Epithemia sorex</i> Kütz.
<i>Epithemia turgida</i> (Ehr.) Kütz.
<i>Epithemia turgida</i> var. <i>westermanni</i> (Grun.) Ehr.
<i>Eunotia bilunaris</i> (Ehr.) Mills.
<i>Eunotia pectinatus</i> (Dillw.) Rabh.
<i>Fragilaria arcus</i> (Ehr.) Cl.
<i>Fragilaria bicapitata</i> A. Moyer
<i>Fragilaria capucina</i> Desm.
<i>Fragilaria capucina</i> var. <i>capitellata</i> (Grun.) Lange-Bertalot
<i>Fragilaria capucina</i> var. <i>gracilis</i> (Oestrup) Hust.
<i>Fragilaria capucina</i> var. <i>rumpens</i> (Kütz.) Lange-Bertalot
<i>Fragilaria capucina</i> var. <i>vaucheriae</i> (Kütz.) Lange-Bertalot
<i>Fragilaria crotonensis</i> Kitt.
<i>Fragilaria cycloporum</i> (Brutschy) Lange-Bertalot
<i>Fragilaria leptostauron</i> (Ehr.) Hust.
<i>Fragilaria parasitica</i> (W. Sm.) Grun.
<i>Fragilaria parasitica</i> var. <i>subconstricta</i> Grun.
<i>Fragilaria robusta</i> (Ralfs.) Lange-Bertalot
<i>Fragilaria tenera</i> (W. Sm.) Lange-Bertalot
<i>Fragilaria ulna</i> (Nitzs.) Lange-Bertalot
<i>Fragilaria ulna</i> var. <i>arcus</i> (Kütz.) Lange-Bertalot
<i>Fragilariformis virescens</i> (Ralfs.) Williams & Round
<i>Frustulia rhomboides</i> (Ehr.) DeToni
<i>Frustulia vulgaris</i> (Thwaites) DeT.
<i>Gomphoneis herculeana</i> (Ehr.) Cl.
<i>Gomphonema accuminatum</i> Ehr.
<i>Gomphonema affine</i> Kütz.
<i>Gomphonema angustum</i> Ag.
<i>Gomphonema clavatum</i> Ehr.
<i>Gomphonema clevei</i> Fricke
<i>Gomphonema gracile</i> Ehr.
<i>Gomphonema minuta</i> (C. Ag.) C. Ag.
<i>Gomphonema olivaceum</i> (Horn.) Bréb.
<i>Gomphonema parvulum</i> Kütz.
<i>Gomphonema subtile</i> Ehr.
<i>Gomphonema truncatum</i> (Cl. Ag.) Cl. Ag.
<i>Gomphonema ventricosum</i> Greg.

TABLE 3. (Cont.)

cf. *Grammatophora*

Gyrosigma accuminatum (Kütz.) Rabh.

Hantzschia amphioxys (Ehr.) Grun.

Hippodonta capitata (Ehr.) Lange-Bertalot

Karayevia clevei (Grun.) Round & Bukhtiyarova

Luticola goeppertinana (Bleisch) Mann

Luticola mutica (Kütz.) Mann

Mastogloia smithii Thwaites

Melosira varians Ag.

Meridion circulare (Grev.) Ag.

Meridion circulare var. *constrictum* (Ralfs.) Van Heurck

Navicula angusta Grun.

Navicula arenaria Donk.

Navicula arvensis Hust.

Navicula bryophila Boye Petersen

Navicula capitatoradiata Germain

Navicula cari Ehr.

Navicula cincta (Ehr.) Ralfs

Navicula clematis Grun.

Navicula cryptocephala Kütz

Navicula cryptonella Lange-Bertalot

Navicula cuspidata Kütz. (Kütz.)

Navicula decussis Østrup.

Navicula dentata Hust.

Navicula elginensis (Greg.) Ralfs.

Navicula erifuga Lange-Bertalot

Navicula expecta Van Land.

Navicula heufleriana (Grun.) Grun.

Navicula incerta Lange-Bertalot

Navicula indifferens Hust.

Navicula lanceolata (Ag.) Kütz.

Navicula libonensis Schoemann

Navicula minuscula Grun.

Navicula protracta (Grun.) Cl.

Navicula radiosa Kütz.

Navicula reinhardtii Grun.

Navicula rhynchocephala Kütz.

Navicula rotundra Hust.

Navicula salinarum Grun.

Navicula schoenfeldii Hust.

Navicula schroeterii Meister

Navicula seminulum Grun.

cf. *Navicula splendidula* Van Land.

Navicula subminiscula Mang.

Navicula subrhynchocephala Hust.

Navicula subrotundata Hust.

Navicula tenelloides Hust.

Navicula tridentula Krasske

Navicula tripunctata (O.F. Müll) Bory

Navicula variostrata Krasske

Navicula veneta Kütz.

TABLE 3. (Cont.)

<i>Navicula viridula</i> (Kütz.) Kütz.
<i>Nitzschia acicularis</i> W. Sm
<i>Nitzschia amphibia</i> Grun.
<i>Nitzschia capitellata</i> Hust.
<i>Nitzschia compressa</i> (Bailey) Boyer
<i>Nitzschia dissipata</i> (Kütz.) Kütz.
<i>Nitzschia epithemoides</i> Grun.
<i>Nitzschia filiformis</i> (W. Sm.) Hust.
<i>Nitzschia fonticola</i> Grun.
<i>Nitzschia frustulum</i> Kütz.
<i>Nitzschia gracilis</i> Hantz.
<i>Nitzschia heufleriana</i> Grun.
<i>Nitzschia hybrida</i> Grun.
<i>Nitzschia inconspicua</i> Grun.
<i>Nitzschia linearis</i> W. Sm.
<i>Nitzschia palea</i> (Kütz.) W. Sm.
<i>Nitzschia parvula</i> W. Sm.
<i>Nitzschia pellucida</i> Grun.
<i>Nitzschia sigma</i> (Kütz.) W. Sm.
<i>Nitzschia sigmoidea</i> (Nitz.) W. Sm.
<i>Nitzschia sinuata</i> var. <i>delognei</i> (Grun.) Lange-Bertalot
<i>Nitzschia umbonata</i> (Ehr.) Lange-Bertalot
<i>Nitzschia vermicularis</i> (Kütz.) Hantz.
<i>Opephora olsenii</i> Moller
<i>Pinnularia borealis</i> Ehr.
<i>Pinnularia brevicostata</i> Cl.
<i>Pinnularia divergens</i> W. Sm.
<i>Pinnularia diversentissima</i> (Grun.) Cl.
<i>Pinnularia gibba</i> Ehr.
<i>Pinnularia gibba</i> var. <i>linearis</i> Ehr.
<i>Pinnularia interrupta</i> W. Sm.
<i>Pinnularia lagerstedtii</i> (Cl.) Cl.- Euler
<i>Pinnularia lata</i> (Bréb.) W. Sm.
<i>Pinnularia maior</i> (Kütz.) Rabh.
<i>Pinnularia nodosa</i> Ehr.
<i>Pinnularia obscura</i> Krasske
<i>Pinnularia stromatophora</i> (Grun.) Cl.
<i>Pinnularia subcapitata</i> Greg.
<i>Pinnularia viridis</i> (Nitz.) Ehr.
<i>Planothidium delicatula</i> (Kütz.) Round & Bukhtiyarova
<i>Planothidium lanceolata</i> (Breb.) Round & Bukhtiyarova
<i>Planothidium lanceolata</i> var. <i>dubia</i> (Grun.) Lange-Bertalot
<i>Pseudostaurosira brevistriata</i> (Grun.) Williams & Round
<i>Reimeria sinuata</i> (Greg.) Kociolek & Stoermer
<i>Rhopalodia gibba</i> (Ehr.) O. Müll.
<i>Rhopalodia gibberula</i> (Ehr.) O. Müll.
<i>Rhoicosphenia abbreviata</i> (Ag.) Lange-Bertalot
<i>Sellaphora minima</i> (Kütz.) Gell et al.
<i>Sellaphora pupula</i> (Kütz.) Gell et al.
<i>Sellophora pupula</i> var. <i>psuedopupula</i> (Krasske) Mereschkowsky
<i>Sellophora pygmaea</i> (Kütz.) Mereschkowsky

TABLE 3. (Cont.)

Sellophora seminulum (Grun.) Mann
Stauroneis anceps Ehr.
Stauroneis kriegerii Patrick
Stauroneis phoenicenteron (Nitz.) Ehr.
Stauroneis smithii Grun.
Staurosira construens (Ehr.) Hust.
Staurosira construens f. binodis (Ehr.) Hust.
Staurosira construens var. venter (Ehr.) Hust.
Staurosirella pinnata (Ehr.) Williams & Round
Stephanodiscus hantzschii Grun. (in Cl. & Grun.)
Stephanodiscus niagare Ehr.
Surirella angustata Kütz.
Surirella brebissonii Krammer & Lange-Bertalot
Surirella ovalis Breb.
Surirella striatula Turp.
Surirella tenera Greg.
Tabellaria fenestrata (Lyngb.) Grun.
Tabellaria flocculosa (Roth) Kütz.
Tetracyclus rupestris (Braun.) Grun.

TABLE 4. Information on diatoms and soft algae at 65 stream sites in the Lahontan Basin, USA. Dates of collection are provided in parentheses. Stream sites are arranged by date of collection. na = not available and cyano = cyanophyta

	Diatom H'	No. Diatom Taxa	Diatom Density cells/cm ²	% Live Diatoms	No. Green Taxa	Green Density cells/cm ²	<i>Stigeoclonium</i> Density cells/cm ²	<i>Cladophora</i> Density cells/cm ²	No. Cyano Taxa	Cyano Density cells/cm ²	Total Soft Density cells/cm ²	Total No Algal Taxa	Total Density cells/cm ²
Convict (10VII96)	2.5	36	26871	na	1	1088	0	1088	2	26090	27178	39	54049
Cotton Lower (29VII96)	3.1	56	1382202	na	2	238621	0	0	1	2409529	2648149	59	30351
Bodie (23VII96)	2.9	48	473317	na	1	31928	31928	0	3	407840	439768	52	913085
Clearwater (26VII96)	3.2	53	231125	na	3	247210	0	24347	4	349162	596372	60	827497
Deep (31VII96)	2.6	40	284915	na	1	1904	0	0	2	29543	31447	43	316362
Green (1VIII96)	2.8	44	32402	na	2	12056	0	861	3	35532	47588	49	79990
Adobe (2VIII96)	2.9	57	526903	na	4	535755	0	382045	1	57740	593495	62	120399
O'Harrel (19VIII96)	3.0	57	159567	na	3	14614	0	1948	2	47329	61943	62	221510
Little Walker (10IX96)	2.7	40	22497	na	0	0	0	0	1	7469	7469	41	29966
Dexter (3IX96)	3.3	52	120064	na	3	22736	7942	13095	2	78456	101192	57	221256
East Walker (10IX96)	3.1	54	134073	na	2	44163	0	0	4	1027217	1071380	60	205453
Marble (9VII97)	2.3	36	31738	na	1	2021162	0	0	2	1478995	3500157	39	3531895
Dog (9VII97)	2.6	33	36901	na	0	0	0	0	2	73214	73214	35	110115
Clearwater (10VII97)	3.5	67	326738	na	3	124319	19885	613671	2	952654	1076973	72	1403711
Virginia (11VII97)	3.0	43	113502	na	3	3787	0	35684	3	72442	110317	49	223819
Dunderberg (18VII97)	2.8	43	34715	na	0	0	0	0	1	3339	3339	44	38054
Glass (23VII97)	2.9	41	45539	na	1	589	0	0	2	9373	9962	44	55501
Slinkard (30VII97)	2.8	41	30243	na	1	5621	0	5621	2	18715	24336	44	54579
Poore (31VII97)	2.7	42	192962	na	3	10437	5151	5277	2	13532	23969	47	216931
Mammoth (18VIII97)	3.3	59	850459	na	5	1387551	2178	131422	3	126935	1514486	67	236494
Burcham (25VIII97)	2.9	39	33289	na	1	2586	0	2586	1	4285	6871	41	40160
Nye (15VII98)	3.0	51	326621	na	1	86709	0	86709	2	2303395	2390104	54	2716726
Arastra (16VII98)	2.9	51	47281	na	0	0	0	0	1	15419	15419	52	627000
Bodie (16VII98)	2.9	48	310329	na	3	1026643	819129	205104	4	1315382	2342025	55	2652354
Hilton (17VII98)	3.0	55	147068	na	1	124193	0	124193	2	78998	203191	58	350259
Lower Hot (17VII98)	2.6	44	586933	na	3	627365	459299	44138	4	1608273	2235638	51	2822571
Rock (22VI99)	2.9	54	35196	na	1	4905	0	4905	2	10780	15685	57	50892
Deadman (6VII99)	2.9	41	22639	na	0	0	0	0	2	95255	95255	43	117894
Convict (16VII99)	3.6	46	26135	na	2	14906	0	14278	3	144799	159705	51	185840
McGee (21VII99)	2.5	40	35835	na	0	0	0	0	1	36075	36075	41	71910

TABLE 4. (Cont.)

	Diatom H'	No. Diatom Taxa	Diatom Density cells/cm ²	% Live Diatoms	No. Green Taxa	Green Density cells/cm ²	<i>Stigeoclonium</i> Density cells/cm ²	<i>Cladophora</i> Density cells/cm ²	No. Cyano Taxa	Cyano Density cells/cm ²	Total Soft Density cells/cm ²	Total No Algal Taxa	Total Density cells/cm ²
O'Harrel (29VII99)	3.3	62	249169	na	1	5720	0	5720	2	141053	146773	65	395942
Cottonwood (13VI99)	2.8	40	37491	na	0	0	0	0	2	213494	2 13494	42	250985
Kirman (18VIII99)	3.5	64	653468	na	5	466673	1210355	203655	4	644588	1111261	73	1764729
Swauger 17VIII99)	3.0	37	27180	na	0	0	0	0	2	31388	31388	39	58568
West Walker (20/VIII99)	2.9	36	25273	na	4	12899	3088	3307	4	17644	30543	44	55816
Upper Owens (24VIII99)	2.9	59	232704	na	2	152796	41398	111387	4	1058644	1252553	65	1485257
Upper Truckee Barton (29IX99)	2.5	56	155262	na	3	154549	66469	34452	4	362498	517047	63	672309
Upper Truckee Forest (30IX99)	2.9	57	18610	na	1	3800	0	0	2	11810	15610	60	34220
East Martis (10VII01)	4.4	43	5457339	82	4	401003	0	291157	3	19364	420367	50	5877706
Hot Springs (22VIII01)	3.3	30	802861	86	4	391356	0	380376	5	5597	396953	39	1199814
Bear Ck (10VII01)	3.5	28	775850	73	1	27692	0	27692	2	5491	33183	31	09033
North Prosser Ck (11VII01)	3.6	37	468036	75	3	92564	21192	61853	2	1662	94226	42	562262
Squaw middle (VII01)	4.0	40	818095	38	5	169999	26538	9616	2	9444	179443	47	997538
Trout (Bennett Flat (11VII01)	3.1	38	2402655	77	2	78931	0	65617	3	9881	8881	43	2491467
Alder Ck (11VII01)	4.1	36	4850771	64	1	48077	0	0	2	53338	101415	39	4952186
Juniper Ck (10VII01)	3.7	28	550486	72	1	54954	0	54954	3	3527	58481	32	608967
Deep Ck (27VIII01)	2.6	30	449199	81	2	36177	0	27748	3	1028	37205	35	486404
Sagehen Ck (12VII01)	4.3	40	1015952	75	3	42406	0	25282	2	4231	89839	45	1105791
Squaw lower (9VII01)	3.7	41	1492810	73	3	104932	25562	54591	3	109007	2 13939	47	1706749
Taylor Ck (31VII01)	3.5	26	270875	88	2	95069	0	90016	3	23583	18652	31	389527
Independence (13VI01)	3.9	37	255537	86	0	0	0	0	4	10030	1 0030	41	35567
Little Truckee River (13VII01)	4.6	47	1276838	59	2	602654	0	343105	3	105450	708104	52	1984942
Perazzo Ck (12VII01)	2.9	35	1473114	36	4	1844802	89991	16154	3	39344	1884146	42	3357260
Heavenly (30VII01)	4.2	44	172203	89	2	108550	0	87100	2	519	109069	48	281272
Saxon Ck (22VIII01)	3.6	34	363150	78	0	0	0	0	2	3456	3456	36	366606

TABLE 4. (Cont.)

	Diatom H'	No. Diatom Taxa	Diatom Density cells/cm ²	% Live Diatoms	No. Green Taxa	Green Density cells/cm ²	<i>Stigeoclonium</i> Density cells/cm ²	<i>Cladophora</i> Density cells/cm ²	No. Cyano Taxa	Cyano Density cells/cm ²	Total Soft Density cells/cm ²	Total No Algal Taxa	Total Density cells/cm ²
Cold Ck (23VIII01)	3.9	42	204072	88	2	18141	0	10562	3	926	19067	47	223139
Hidden Valley (30VII01)	3.3	31	72314	80	1	6182	0	6182	2	475	6657	34	78971
Squaw N. Trib.(VII01)	1.5	22	573145	68	2	81736	0	0	3	7043	88779	27	661924
Squaw S. Trib. (9VII01)	3.8	35	632271	80	0	0	0	0	2	8392	670316	37	1302587
Lacey Canyon (12VII01)	3.8	25	182133	85	5	114925	24006	11931	3	3527	118452	33	300585
Rush C k (26VII01)	4.2	46	751513	75	6	5175565	0	22161	4	6132	518170	56	5933210
Convict SNARL (21VI01)	3.6	28	243246	79	2	38287	0	33768	2	4843	158287	33	401533
Robinson Ck (26VII01)	3.6	34	529348	89	2	345972	0	297439	3	25820	371792	39	901140
Trout Ck (BFL) (31VII01)	4.0	40	97737	83	1	10406	0	10406	3	1549	11955	44	109692
Parker Ck (26VII01)	3.6	39	619769	71	0	0	0	0	3	7692	7692	42	627461

TABLE 5. Mean relative frequencies (% ±SE) in sampled habitats, maximum frequency in habitat (Max), percent of stream habitats in which taxa occurred, x % embeddedness (Embed ±SE), x % fines + sand (F + S ±SE), and x elevation (±SE) for numerically important diatom taxa collected in 65 stream habitats in the Lahontan Basin, USA. These taxa make up over 85% of the diatom assemblages in the stream habitats. Acronyms for species are provided in parentheses.

TAXON	x Relative Frequency	Max %	% streams	x % Embed	x % F + S	x Elevation
<i>Achnanthes exigua</i> Grun. (Acex)	0.2 (0.06)	1.7	55.3	38.7 (5.7)	50.1(19.2)	7094(170)
<i>Achnantheidium minutissima</i> (Kütz.) Czar. (Acmi)	13.1 (1.9)	41.0	100.0	28.2 (4.0)	36.4(5.0)	7087(209)
<i>Amphipleura pellicuda</i> (Kütz.) Kütz. (Ampel)	0.1 (0.05)	2.6	10.8	25.9 (7.5)	7.5(3.7)	6471(163)
<i>Amphora coffeiformis</i> (Ag.) Kütz. (Amco)	1.4 (0.04)	0.7	42.1	35.3 (7.7)	45.1(8.6)	6773(435)
<i>Amphora ovalis</i> (Kütz.) Kütz. (Amov)	0.1 (0.05)	1.1	23.6	30.6 (7.6)	40.9(11.4)	7167(163)
<i>Amphora pediculus</i> (Kütz.) Grun. (Ampe)	1.0 (0.4)	13.5	52.6	29.4 (6.3)	41.2(7.3)	7065(136)
<i>Aulacoseira islandica</i> O. Muell. (Auis)	0.2 (0.07)	1.9	28.9	25.7 (8.2)	26.1(9.7)	7522(273)
<i>Aulacoseira italica</i> (Ehr.) Simon. (Auit)	0.5 (0.2)	4.6	50.0	29.7 (6.6)	33.6 (6.8)	7202(139)
<i>Caloneis silicula</i> (Ehr.) Cl. (Casi)	0.2 (0.05)	1.0	34.2	34.4 (7.8)	45.8(9.4)	7333(236)
<i>Cocconeis pediculus</i> Kütz. (Cope)	1.1 (0.8)	31.6	39.4	23.7 (7.1)	26.6(7.8)	7274(196)
<i>Cocconeis placentula</i> var. <i>euglypta</i> (Ehr.) Cl. (Cople)	7.5 (1.4)	41.9	92.1	28.5 (4.4)	38.0(5.1)	7350(142)
<i>Ctenophora pulchella</i> (Ralfs) Williams & Round (Ctpu)	0.02 (0.01)	0.3	7.9	59.1 (27.6)	69.5(22.7)	7240(223)
<i>Cyclotella meneghiniana</i> Kütz. (Cyme)	0.5 (0.2)	7.4	34.2	40.4 (9.9)	60.1(7.8)	7035(131)
<i>Cyclotella stelligera</i> Cl. & Grun. (Cyst)	0.2 (0.07)	1.4	39.5	22.1 (6.3)	28.0(7.1)	7117(102)
<i>Cymbella affinis</i> Kütz. (Cyaf)	2.0 (0.9)	35.3	89.5	27.9 (4.8)	38.0(5.6)	7190(120)
<i>Cymbella minuta</i> Hilse ex. Rabh. Cymi	0.7 (0.2)	7.5	57.8	29.8 (5.8)	38.8(6.4)	7228(111)
<i>Diatoma mesodon</i> (Ehr.) Kütz. (Dime)	0.2 (0.08)	1.8	31.6	15.2 (3.1)	20.5(5.6)	7555(242)
<i>Diatoma vulgaris</i> Bory (Divu)	0.2 (0.07)	2.1	39.5	22.5 (6.0)	35.2(7.7)	7027(155)
<i>Eolimna minima</i> (Kütz.) Lange-Bertalot (Eimi)	0.4 (0.1)	3.4	42.1	21.0 (6.1)	31.0(7.3)	6651(437)
<i>Epithemia sorex</i> Kütz. (Epsa)	3.4 (1.4)	34.8	63.2	26.3 (5.8)	37.7(6.6)	7440(150)
<i>Eunotia bilunaris</i> (Ehr.) Mills (Eubi)	0.5 (0.2)	5.0	50.0	25.0 (6.4)	31.0(6.9)	7262(160)

TABLE 5 (Cont.)

TAXON	x Relative Frequency	Max %	% streams	x % Embed	x % F + S	x Elevation
<i>Fragilaria arcus</i> (Ehr.) Cl. (Frar)	0.8 (0.3)	8.7	36.8	11.6 (2.3)	9.8 (2.1)	7531(177)
<i>Fragilaria capucina</i> Desm. (Frca)	3.3 (0.4)	11.9	94.7	28.3 (4.4)	34.6 (5.3)	7382(141)
<i>Fragilaria capucina</i> var. <i>vaucheriae</i> (Kütz) Lange-Bertalot (Frcav)	4.8 (0.8)	22.5	100.0	28.2 (4.2)	36.4 (5.0)	7087(209)
<i>Fragilaria construens</i> (Ehr.) Grun. (Frco)	1.7 (0.3)	8.3	73.7	27.5 (5.2)	38.1 (6.0)	7230(132)
<i>Fragilaria leptostauron</i> (Ehr.) Hust. (Frle)	0.3 (0.09)	2.4	39.5	41.8 (8.8)	51.7 (9.3)	7315(168)
<i>Fragilaria pinnata</i> Ehr. (Frpi)	1.9 (0.4)	9.8	73.6	31.9 (5.2)	40.1 (6.1)	7225(137)
<i>Fragilaria ulna</i> (Nitzs.) Lange-Bertalot (Frul)	3.7 (0.7)	18.9	100.0	28.2 (4.2)	36.4 (5.0)	7087(209)
<i>Frustulia vulgaris</i> (Thwaites) DeT. (Frvu)	0.1 (0.03)	0.7	57.9	33.2 (6.3)	43.0 (6.5)	7262(163)
<i>Gomphonema herculeana</i> (Ehr.) Cl. (Gohe)	0.7 (0.2)	4.7	63.2	24.5 (4.3)	32.9 (5.6)	7212(146)
<i>Gomphonema angustum</i> Ag. (Goan)	0.9 (0.2)	5.9	47.4	21.8 (5.5)	28.4 (6.4)	7225(132)
<i>Gomphonema parvulum</i> Kütz. (Gopa)	0.9 (0.2)	4.6	89.5	28.6 (4.7)	37.2 (5.6)	7317(123)
<i>Gomphonema truncatum</i> (Cl. Ag.) Cl. Ag. (Gotr)	0.1 (0.04)	1.1	10.5	22.1 (8.0)	44.2 (10.0)	7040(158)
<i>Gyrosigma accuminatum</i> (Kütz.) Rabh. (Gyac)	0.03 (0.01)	0.3	10.5	57.9 (17.6)	69.8 (15.8)	7090(138)
<i>Hantzschia amphioxys</i> (Ehr.) Grun. (Haam)	0.5 (0.1)	2.6	71.1	30.4 (5.9)	43.8 (6.3)	7154(90.6)
<i>Karayevia clevei</i> (Grun.) Round & Bukhtyarova (Kacl)	0.1 (0.1)	0.9	13.2	24.9 (6.2)	44.1 (6.8)	6844(156)
<i>Luticola mutica</i> (Kütz.) Mann (Lumu)	0.1 (0.04)	1.1	36.8	39.9 (9.7)	49.2 (10.1)	7353(174)
<i>Melosira varians</i> Ag. (Meva)	0.8 (0.3)	9.2	44.7	31.9 (6.7)	39.1 (7.3)	7075(114)
<i>Meridion circulare</i> (Grev.) Ag. (Meci)	0.7 (0.1)	2.9	81.6	24.5 (4.9)	33.4 (6.0)	7367(142)
<i>Navicula cincta</i> (Ehr.) Ralfs (Nacin)	0.8 (0.2)	6.4	44.7	27.6 (4.3)	40.4 (6.5)	7106(172)
<i>Navicula cryptocephala</i> Kütz. (Nacr)	0.8 (0.2)	5.3	76.3	32.0 (5.2)	44.5 (6.3)	7239(144)
<i>Navicula indifferens</i> Hust. (Naind)	0.1 (0.03)	0.8	15.7	53.7 (19.4)	57.7 (21.2)	7722(335)
<i>Navicula schroeterii</i> Meister (Nasch)	0.1 (0.04)	0.8	26.3	30.2 (6.9)	48.4 (9.0)	6994(270)
<i>Navicula tripunctata</i> (O.F. Müll) Bory (Natr)	0.1 (0.04)	1.1	31.6	17.6 (3.5)	20.4 (4.6)	7472(255)
<i>Navicula veneta</i> Kütz. (Nave)	0.8 (0.1)	2.8	86.8	26.3 (4.8)	33.2 (5.2)	7287(125)

TABLE 5 (Cont.)

TAXON	x Relative Frequency	Max %	% streams	% Embed	x % F + S	x Elevation
<i>Nitzschia acicularis</i> W. Sm. (Niac)	0.1 (0.07)	2.6	23.7	46.9 (11.9)	63.2 (8.9)	7157(180)
<i>Nitzschia amphibia</i> Grun. (Niam)	0.7 (0.2)	4.2	65.8	34.3 (6.4)	42.5 (6.5)	7188 (92)
<i>Nitzschia dissipata</i> (Kütz.) Kütz. (Nidi)	3.2 (0.7)	8.3	97.4	28.7 (3.2)	38.2 (3.8)	7095(207)
<i>Nitzschia frustulum</i> Kütz. (Nifr)	4.9 (0.7)	16.6	93.8	28.2 (4.2)	36.4 (5.0)	7087(209)
<i>Nitzschia linearis</i> W. Sm. (Nili)	1.0 (0.2)	5.6	63.2	28.9 (4.5)	42.4 (5.9)	7033 (95)
<i>Nitzschia palea</i> (Kütz.) W. Sm. (Nipa)	5.0 (1.1)	30.0	83.1	28.2 (4.2)	36.4 (5.0)	7087(209)
<i>Nitzschia sigma</i> (Kütz.) W. Sm. (Nisi)	0.1 (0.1)	1.1	23.7	45.2 (12.3)	54.5 (12.5)	7208 (93)
<i>Opephora olsenii</i> Moller (Opol)	0.5 (0.2)	8.8	44.7	24.7 (4.8)	36.4 (5.7)	7107(149)
<i>Pinnularia borealis</i> Ehr. (Pibo)	0.03 (0.01)	0.3	21.1	31.7 (10.5)	47.2 (9.8)	7027(354)
<i>Pinnularia divergens</i> W. Sm. (Pidi)	0.2 (0.1)	1.1	50.0	41.2 (7.7)	51.9 (7.9)	7281(217)
<i>Pinnularia subcapitata</i> Greg. (Pisu)	0.2 (0.04)	1.2	47.4	40.2 (7.9)	49.9 (8.2)	7338(217)
<i>Planothidium lanceolata</i> (Breb.) Round & Bukhtiyarova (Plla)	8.3 (1.1)	30.7	97.4	28.5 (4.4)	38.0 (5.1)	7350(142)
<i>Reimeria sinuata</i> (Greg.) Kociolek & Stoermer (Resi)	1.0 (0.2)	4.8	89.5	23.8 (3.9)	32.1 (4.9)	7038(252)
<i>Rhopalodia gibba</i> (Ehr.) O. Müll. (Rhgi)	0.3 (0.1)	3.0	39.5	38.6 (9.3)	55.8 (8.9)	7090(116)
<i>Rhopalodia gibberula</i> (Ehr.) O. Müll. (Rhgi)	0.4 (0.1)	2.1	55.3	39.7 (6.4)	50.9 (6.8)	7038(117)
<i>Rhoicosphenia abbreviata</i> (Ag.) Lange-Bertalort (Rhab)	3.0 (0.6)	14.7	97.4	25.6 (4.3)	25.9 (5.0)	7243(119)
<i>Sellophora pupula</i> (Kütz.) Mereschkowsky (Sepu)	0.2 (0.05)	1.1	39.5	34.6 (8.2)	45.6 (8.5)	7205(143)
<i>Surirella angustata</i> Kütz. (Syan)	0.1 (0.04)	0.9	29.0	32.5 (11.2)	41.1 (12.3)	7344(214)
<i>Surirella ovalis</i> Breb. (Suov)	0.1 (0.03)	0.7	15.8	49.7 (20.9)	47.9 (21.8)	7620(356)
<i>Tabellaria flocculosa</i> (Roth) Kütz. (Tafl)	0.3 (0.1)	3.8	23.7	16.6 (3.2)	28.1 (6.3)	7265(287)
<i>Tetracyclus rupestris</i> (Braun.) Grun. (Teru)	0.2 (0.1)	2.8	21.1	16.2 (0.5)	24.7 (6.5)	7010(280)

TABLE 6. Stream habitats ($n = 65$) in the Lahontan Basin, USA ranked by % fines + sand (F + S). The combined relative abundances of the motile diatom species of *Navicula*, *Nitzschia*, and *Surirella* (NNS) are also included.

STREAM	F + S	NNS
Juniper Creek (10VII01)	1.3	0.26
Parker Creek (26VII01)	2.7	0.08
Bear Creek (10VII01)	4.0	0.06
Rush Creek (26VII01)	4.0	0.20
Upper Truckee Creek Forest (30IX99)	5.0	0.20
Deadman Creek (6VII99)	5.3	0.21
Convict Creek SNARL (16VII99)	5.3	0.11
Independence Creek (13VII01)	5.3	0.09
Little Truckee River (13VII01)	5.3	0.20
Taylor Creek (below fallen leaf) (31VII01)	5.3	0.03
Convict Creek SNARL (21VI01)	6.6	0.11
Alder Creek (11VII01)	6.7	0.27
Virginia Creek (11VII97)	6.7	0.02
Little Walker Creek (10IX96)	7.0	0.21
Green Creek (1VIII96)	8.0	0.07
Arastra Creek (16VII98)	8.0	0.31
Sagehen Creek (12VII01)	8.0	0.46
Convict Creek SNARL (10VII96)	9.0	0.07
McGee Creek (21VII99)	9.3	0.07
Perazzo Creek (12VII01)	9.3	0.03
Lacey Canyon Creek (12VII01)	9.9	0.05
Deep Creek (31VII96)	10.0	0.14
Robinson Creek (31VIII01)	12.0	0.03
West Walker Creek (20/VIII99)	12.0	0.22
Glass Creek (23VII97)	13.3	0.24
Squaw Creek (North Fork) (9VII01)	13.3	0.09
Squaw Creek (South Fork) (9VII01)	13.3	0.12
Mammoth Creek (18VIII97)	14.0	0.30
Deep Creek (27VIII01)	14.6	0.11
Swauger Creek 17VIII99)	14.7	0.31
Dunderberg Creek (18VII97)	16.0	0.19
Cottonwood Creek (13VI99)	17.3	0.47
Trout Creek (Bennett Flat) (11VII01)	20.0	0.14
Poore Creek (31VII97)	21.3	0.20
Upper Owens River (24VIII99)	25.3	0.22
Hidden Valley Creek (30VII01)	27.0	0.10
Rock Creek (22VI99)	29.3	0.05
Dog Creek (9VII97)	29.3	0.13
East Martis Creek (10VII01)	29.4	0.40

TABLE 6 (Cont.)

STREAM	F + S	NNS
Squaw Creek Lower (9VII01)	26.7	0.10
Cold Creek (23VIII01)	30.7	0.12
Hot Springs Creek (22VIII01)	33.3	0.11
Clearwater Creek (10VII97)	36.6	0.32
Upper Truckee River (Barton) (29IX99)	32.0	0.18
North Prosser Creek (11VII01)	36.0	0.16
Burcham Creek (25VIII97)	36.7	0.41
Kirman Creek (18VIII99)	42.7	0.22
Hilton Creek (17VII98)	45.0	0.09
Heavenly Valley Creek (30VII01)	45.3	0.25
Squaw Creek middle (9VII01)	46.3	0.05
East Walker Creek (10IX96)	49.0	0.31
O'Harrel Creek (29VII99)	49.3	0.19
Dexter Creek (3IX96)	50.0	0.44
Saxon Creek (22VIII01)	51.3	0.11
Bodie Creek (16VII98)	55.0	0.45
Trout Creek (BFP) (31VII01)	62.0	0.20
Clearwater Creek (26VII96)	67.0	0.30
O'Harrel Creek (19VIII96)	67.0	0.25
Marble (9VII97)	68.3	0.11
Lower Hot (17VII98)	72.0	0.20
Bodie (23VII96)	72.0	0.49
Slinkard (30VII97)	73.3	0.20
Nye (15VII98)	93.3	0.18
Adobe (2VIII96)	100.0	0.25
Cotton Lower (29VII96)	100.0	0.27

TABLE 7. Indices for abiotic determinants for numerically important diatom taxa collected in 65 stream habitats in the Lahontan Basin, USA during 1996-1999 and 2001. Diatom taxa are in alphabetical order. Abbreviations for diatom taxa are provided in Table 5. FSI = % fines + sand index; EMBI = % embeddedness index; TEMPI = water temperature index; TKNI = total Kjeldahl nitrogen index; TPI = total phosphorus index, and CONDI = specific conductance index. TKNI and TPI indices are based on only 27 streams as indicated in Table 1. Values in **red** represent taxa in the highest 20% of each index, and values in **blue** represent taxa in the lowest 20%. na = data not available.

TAXA	FSI	EMBI	TEMPI	TKNI	TPI	CONDI
ACEX	64	45	22	0.123	0.026	192
ACMI	50	36	44	0.280	0.054	137
AMCO	60	44	23	na	na	254
AMPE	66	48	26	0.126	0.033	203
AMPEL	74	58	30	0.183	0.036	254
AUAM	51	42	25	0.126	0.032	148
CASI	61	46	27	0.154	0.026	136
COPLE	83	69	43	0.291	0.061	318
CYME	73	57	30	0.219	0.051	273
CYST	38	33	24	0.128	0.021	136
CYAF	55	47	32	0.218	0.039	209
DIME	37	31	23	0.158	0.035	150
EPSO	77	55	33	0.142	0.025	270
EUBI	46	35	25	0.159	0.028	168
FRAR	31	33	27	0.172	0.021	128
FRCA	70	59	37	0.235	0.041	225
FRCAV	71	59	37	0.233	0.046	223
FRCR	33	27	37	0.203	0.075	227
FRRH	45	37	21	0.168	0.026	145
FRTE	36	38	31	0.158	0.019	149
FRUL	72	60	38	0.244	0.046	269
GOHE	46	43	27	0.201	0.043	205
GOCL	63	60	46	0.281	0.053	315
GOPA	58	47	29	0.168	0.035	200
GOTR	41	27	25	0.129	0.014	221
HAAM	72	55	27	na	na	208
MEVA	63	52	28	0.184	0.033	224
MECI	60	46	27	0.184	0.030	206
NACR	55	47	27	0.172	0.024	203
NAVA	51	47	30	0.211	0.042	200
NIAM	62	49	29	0.147	0.042	161

TABLE 7. (Cont.)

TAXA	FSI	EMBI	TEMPI	TKNI	TPI	CONDI
NIDI	73	61	37	0.252	0.050	270
NIFR	74	61	36	0.209	0.043	269
NIPA	75	57	35	0.249	0.042	274
PIDI	63	47	26	0.151	0.020	184
PIGI	71	47	26	0.133	0.021	241
PLLA	51	52	37	0.244	0.049	248
PSBR	53	44	26	0.123	0.018	183
RESI	48	41	29	0.197	0.046	199
RHGI	57	44	27	0.253	0.035	228
RHAB	69	54	34	0.246	0.053	265
STCO	70	54	34	0.234	0.034	252
SUAN	45	39	24	0.211	0.040	203
T AFL	39	33	25	0.108	0.015	123
TERU	30	30	22	0.104	0.011	118

TABLE 8. Summary of diatom assemblages associated with several environmental conditions in the Lahontan Basin, USA. The table is based on results of community ordinations and principal component analyses on diatom distributions in the Lahontan Basin (this study) as well as from literature on relationships between diatom distributions and abiotic determinants (Bahls *et al.* 1992, Christie and Smol 1993, van Dam *et al.* 1994, Reavie *et al.* 1995, Hill *et al.* 2000, Blinn and Bailey 2001).

HIGH ECOLOGICAL INTEGRITY:

(stable, coarse substrates; high canopy cover; low salinity and nutrient concentrations)

Achnantheidium minutissima, *Diatoma mesodon* *Eunotia bilunaris*,
Fragilaria arcus, *Fragilaria tenera*, *Tabellaria flocculosa*, *Tetracyclus*
rupestris

HIGH SALINIZATION PROCESSES:

(clear cutting, heavy irrigation)

Amphipleura pellicuda, *Amphora coffeaeformis*, *Caloneis silicula*,
Ctenophora pulchella *Hantzschia amphioxys*, *Melosira varians*,
Nitzschia frustulum, *Nitzschia palea*, *Rhopalodia gibberula*

HIGH NITROGEN CONCENTRATIONS:

(livestock feed lots, crop fertilization)

Amphipleura pellucida, *Cyclotella meneghiniana*, *Nitzschia frustulum*,
Nitzschia palea, *Nitzschia sigmoidea*

HIGH PHOSPHORUS CONCENTRATIONS:

(crop fertilization)

Amphora pediculus, *Cocconeis placentula* var. *euglypta*,
Planothidium lanceolata, *Reimeria sinuata*, *Rhoicosphenia abbreviata*

Figure 1. Cluster analysis of selected diatom species along a substrate embeddedness gradient for streams in the Lahontan Basin, USA. Abbreviations for diatom species are provided in Table 5.

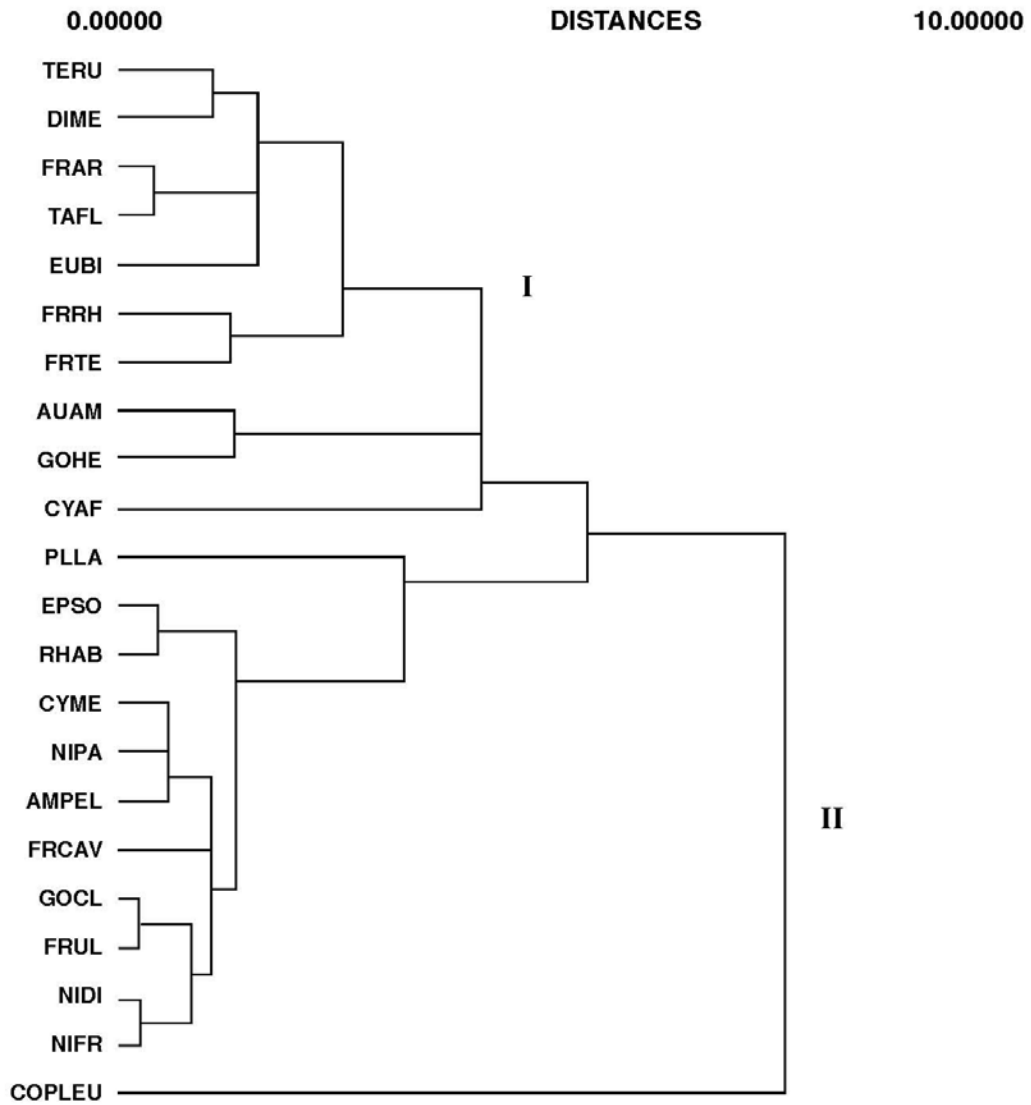


Figure 2. Cluster analysis of selected diatom species along a total Kjeldahl nitrogen gradient for streams in the Lahontan Basin, USA. Abbreviations for diatom species are provided in Table 5.

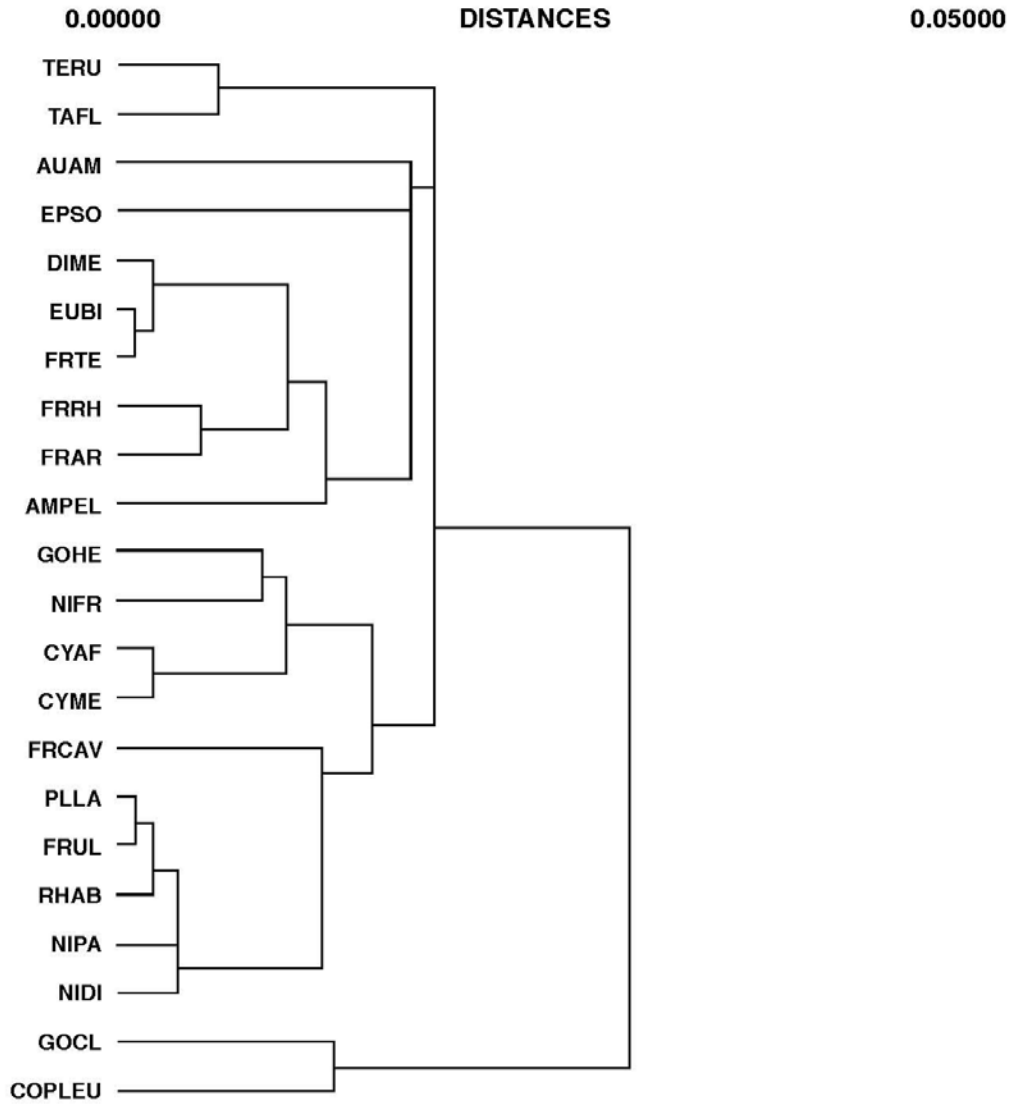


Figure 3. Cluster analysis of selected diatom species along a total phosphorus gradient for streams in the Lahontan Basin, USA. Abbreviations for diatom species are provided in Table 5.

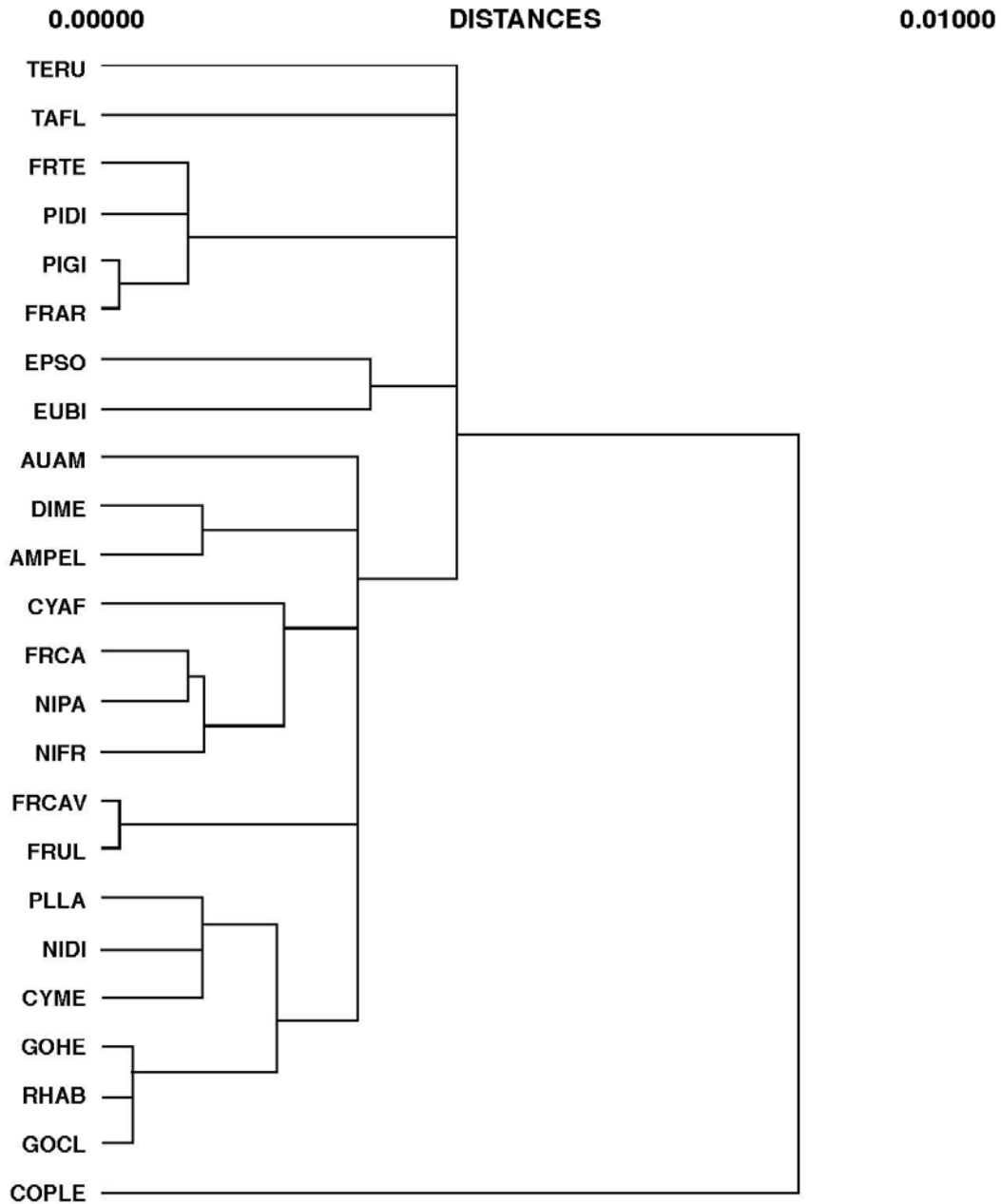


Figure 4. Cluster analysis of selected diatom species along a specific conductance gradient for streams in the Lahontan Basin, USA. Abbreviations for diatom species are provided in Table 5.

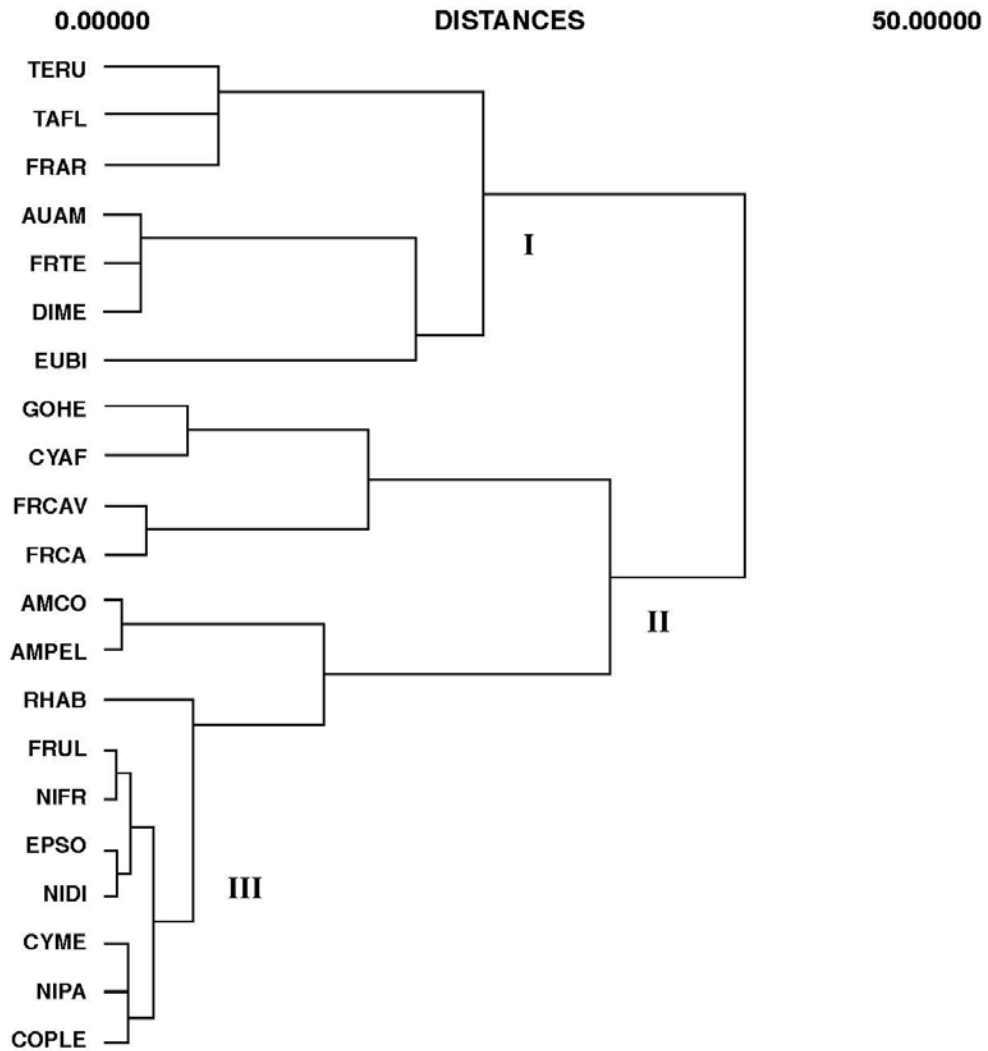


Figure 5. Plot of principal component analysis for selected environmental determinants with high loadings and diatom species in streams in the Lahontan Basin, USA. Abbreviations for diatom species are provided in Table 5.

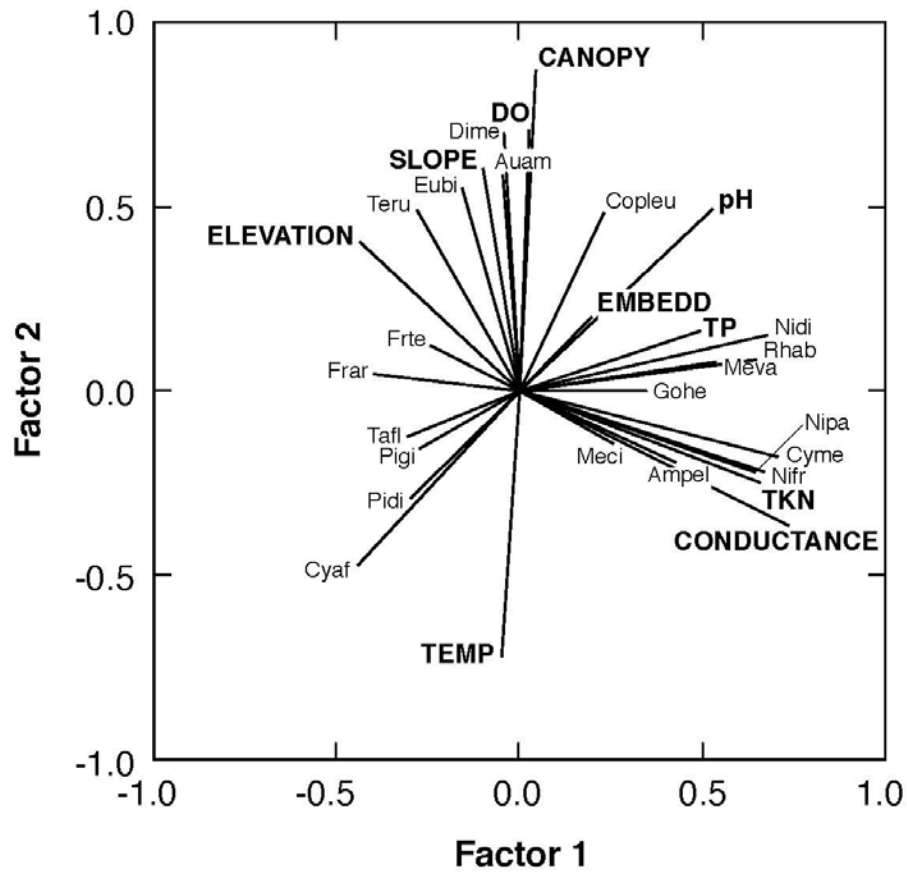


Figure 6. Multi-dimensional global nonmetric ordination of 65 stream habitats from diatom community data collected in the Lahontan Basin, USA during 2001. Ordination has a minimum stress of 0.178. Environmental determinants are shown as vectors of highest correlation to diatom community structure.

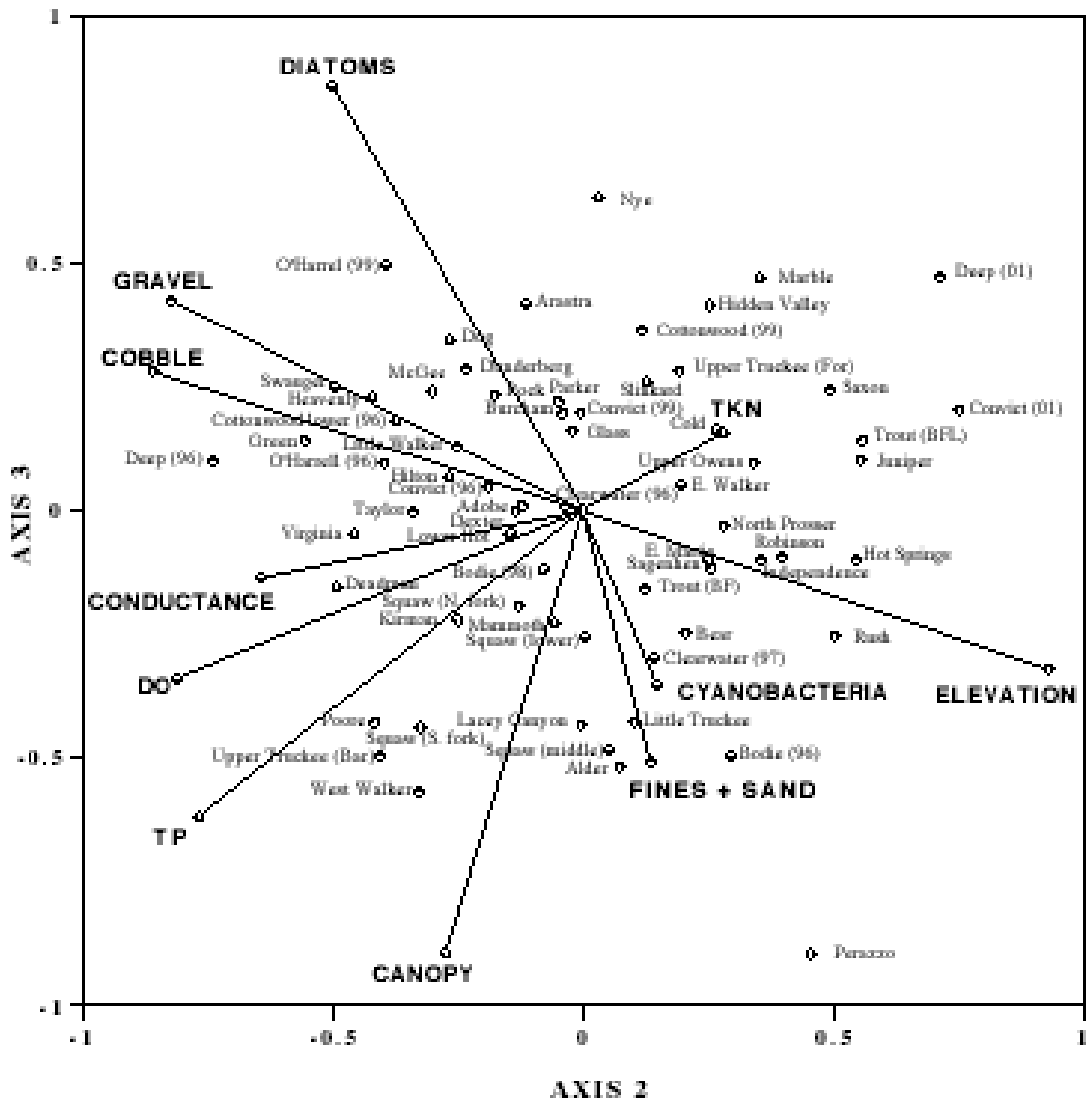
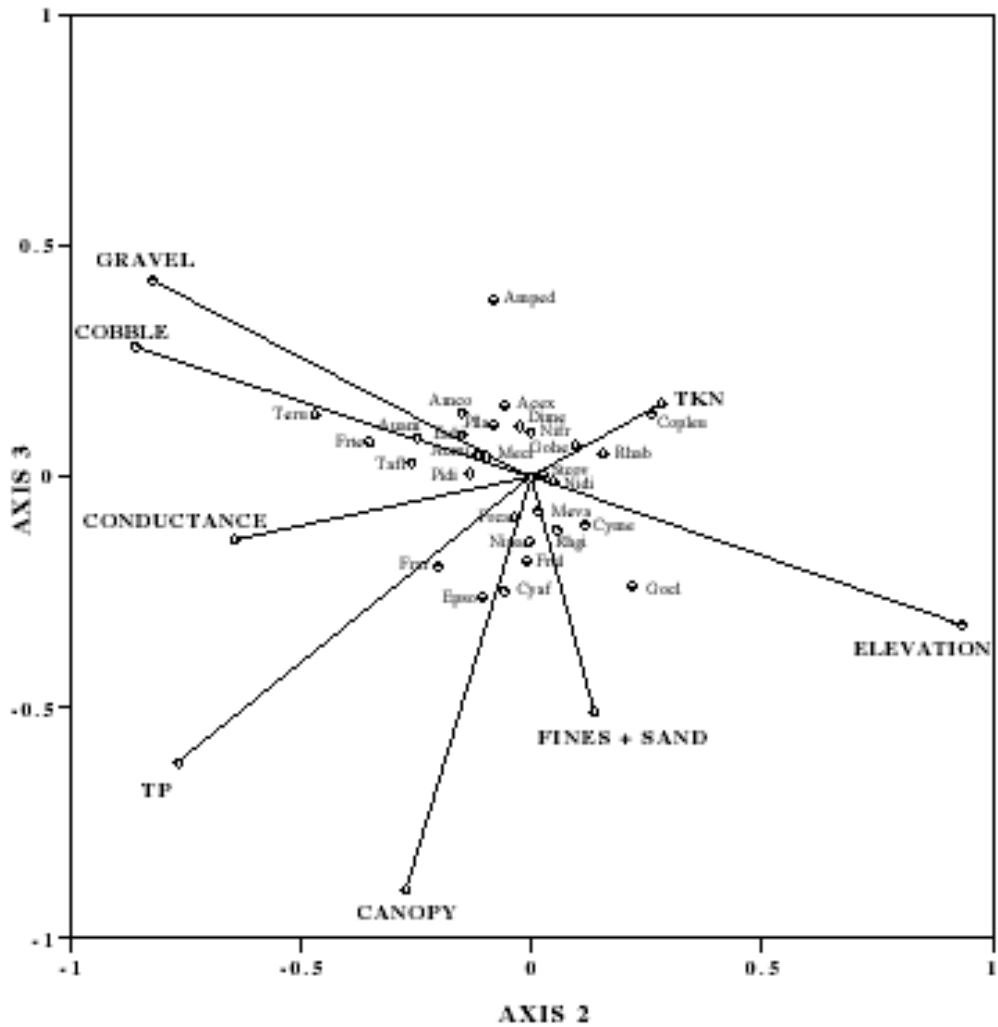


Figure 7. Multi-dimensional global nonmetric ordination of diatom community data collected from 65 stream habitats in the Lahontan Basin, USA during 2001. Ordination has a minimum stress of 0.178. Environmental determinants are shown as vectors of highest correlation to diatom community structure. Abbreviations for diatom species are provided in Table 5.



APPENDIXES

APPENDIX TABLE 1a. Relative % (\pm SE) frequency of diatoms and collection dates for selected streams in the Lahontan Basin, USA. Species acronyms are in parentheses.

TAXA	Cottonwood 29VII96	Bodie 23VII96	Clearwater 26VII96	Adobe 2VIII96	O'Harrel 19VIII96
<i>Achnanthes exigua</i> Grun. (Acex)	0.5 (0.1)	0.1 (0.1)	0.2 (0.2)	1.0 (0.2)	0.5 (0.1)
<i>Achnanthes hungarica</i> Grun. (Achu)					
<i>Achnanthes laterostrata</i> Hust. (Acla)					0.1 (0.1)
<i>Achnanthes linearis</i> (W. Sm.) Grun. (Acli)					
<i>Achnantheidium minutissima</i> (Kütz.) Czar. (Acmi)	6.3 (0.6)	1.5 (0.5)	4.1 (1.1)	5.1 (1.5)	22.8 (5.8)
<i>Amphipleura pellucida</i> (Kütz.) Kütz. (Ampel)					
<i>Amphora coffeaeformis</i> (Ag.) Kütz. (Amco)			0.6 (0.2)	0.3 (0.2)	0.5 (0.3)
<i>Amphora ovalis</i> (Kütz.) Kütz. (Amov)					0.6 (0.0)
<i>Amphora pediculus</i> (Kütz.) Grun. (Ampe)	0.3 (0.3)			0.4 (0.2)	13.5 (6.5)
<i>Amphora veneta</i> Kütz. (Amve)					
<i>Anomoeoneis sphaerophora</i> f. <i>costata</i> (Kütz.) Schmid. (Anspco)					
<i>Anomoeoneis vitrea</i> (Grun.) Grun. (Anvi)					
<i>Asterionella formosa</i> Hass. (Asfo)					
<i>Aulacoseira ambigua</i> (Grun.) Simon. (Auam)	0.4 (0.2)		0.3 (0.3)	0.6 (0.2)	2.4 (0.6)
<i>Aulacoseira islandica</i> O. Muell. (Auis)					
<i>Aulacoseira italica</i> (Ehr.) Simon. (Auit)					
<i>Caloneis amphibaena</i> (Bory) Cl. (Caam)					
<i>Caloneis bacillum</i> (Grun.) Cl. (Caba)	0.9 (0.4)	0.2 (0.2)	0.3 (0.3)		
<i>Caloneis molaris</i> (Grun.) Krammer (Camo)	1.0 (0.6)		0.2 (0.2)		
<i>Caloneis schumanniana</i> (Grun.) Cl. (Case)					
<i>Caloneis silicula</i> (Ehr.) Cl. (Casi)				0.1 (0.1)	0.4 (0.3)
<i>Caloneis sublinearis</i> (Grun.) Kramme (Casu)	1.8 (1.4)	0.5 (0.4)			
<i>Caloneis tenuis</i> (Greg.) Krammer (Cate)					
<i>Cocconeis pediculus</i> Kütz. (Cope)				31.6 (8.9)	

APPENDIX TABLE 1a (Cont.)

TAXA	Cottonwood 29VII96	Bodie 23VII96	Clearwater 26VII96	Adobe 2VIII96	O'Harrel 19VIII96
<i>Cocconeis placentula</i> Ehr. (Copl)				0.1 (0.1)	
<i>Cocconeis placentula</i> var. <i>euglypta</i> (Ehr.) Cl. (Cople)	4.0 (2.3)	1.1 (0.3)	7.1 (3.3)	5.1 (0.4)	3.7 (0.3)
<i>Cocconeis placentula</i> var. <i>lineata</i> (Ehr.) V.H. (Coplli)					
<i>Cocconeis placentula</i> var. <i>pseudolineata</i> Geitler (Coplps)					
<i>Ctenophora pulchella</i> (Ralfs) Williams & Round (Ctpu)			0.3 (0.4)		
<i>Cyclotella</i> sp. (Csp)					
<i>Cyclotella bodanica</i> Grun. (Cybo)					
<i>Cyclotella meneghiniana</i> Kütz. (Cyme)	1.4 (0.6)	0.4 (0.3)	0.6 (0.2)	1.3 (0.3)	0.1 (0.1)
<i>Cyclotella stelligera</i> Cl. & Grun. (Cyst)				0.7 (0.4)	1.0 (0.3)
<i>Cyclostephanos novaezeelandiae</i> (Cl.) Round (Cyno)					
<i>Cymatopleura solea</i> (Bréb) W. Sm. (Cyso)			0.3 (0.4)		
<i>Cymbella</i> sp. (Cysp)				0.1 (0.1)	0.1 (0.1)
<i>Cymbella affinis</i> Kütz. (Cyaf)	0.3 (0.2)	0.1 (0.1)	0.1 (0.1)	1.1 (0.6)	0.7 (0.1)
<i>Cymbella aspera</i> (Ehr.) Cl. (Cyas)	0.1 (0.1)				
<i>Cymbella amphicephala</i> Naeg. ex Kütz. (Cyam)			0.1 (0.1)		
<i>Cymbella cistula</i> (Ehr.) Kirch. (Cyci)					
<i>Cymbella gracilis</i> (Ehr.) Kütz. (Cygr)					
<i>Cymbella latens</i> Krasske (Cyla)					
<i>Cymbella mexicana</i> (Ehr.) Cl. (Cymex)					
<i>Cymbella minuta</i> Hilse ex. Rabh. (Cymi)	3.9 (0.4)	0.5 (0.2)	0.2 (0.2)	0.1 (0.1)	0.7 (0.3)
<i>Cymbella naviculiformis</i> (Auers.) Cl. (Cyna)					
<i>Cymbella prostrata</i> (Berk.) Cl. (Cypr)					
<i>Cymbella proxima</i> Reimer (Cypro)					
<i>Cymbella silesiaca</i> Bleisch in Rabh. (Cysi)					
<i>Cymbella tumida</i> (Breb.) Van Heurck (Cytu)			0.2 (0.3)		
<i>Cymbellonitzschia diluviana</i> Hust. (Cydi)					

APPENDIX TABLE 1a (Cont.)

TAXA	Cottonwood 29VII96	Bodie 23VII96	Clearwater 26VII96	Adobe 2VIII96	O'Harrel 19VIII96
<i>Denticula elegans</i> Kütz. (Deel)			0.2 (0.2)		0.7 (0.3)
<i>Diatoma</i> sp. (Disp)					
<i>Diatoma hyemalis</i> (Roth) Heiberg (Duhy)					
<i>Diatoma mesodon</i> (Ehr.) Kütz. (Dime)					
<i>Diatoma tenuis</i> Ag. (Dite)					
<i>Diatoma vulgare</i> Bory (Divu)			0.3 (0.2)		0.1 (0.1)
<i>Diploneis</i> sp. (Dipsp)					
<i>Diploneis elliptica</i> (Kütz.) Cl. (Diel)					0.3 (0.0)
<i>Diploneis oblongella</i> (Naeg. ex. Kütz) Ross (Diob)	0.2 (0.1)	0.3 (0.3)	0.1 (0.1)	0.2 (0.2)	
<i>Encyonopsis microcephala</i> (Grun.) Krammer (Enmi)	0.1 (0.1)				
<i>Eolimna minima</i> (Kütz.) Lange-Bertalot (Eimi)				0.1 (0.2)	
<i>Epithemia</i> sp. (Epsp)					
<i>Epithemia adnata</i> (Kütz.) Bréb. (Epad)				0.2 (0.2)	0.1 (0.1)
<i>Epithemia argus</i> (Ehr.) Kütz. (Epar)			0.1 (0.1)		
<i>Epithemia sorex</i> Kütz. (Eps)		2.5 (2.1)	7.6 (3.3)	1.1 (0.6)	
<i>Epithemia turgida</i> (Ehr.) Kütz. (Eptu)	0.2 (0.1)	1.1 (1.0)		0.7 (0.2)	
<i>Eunotia</i> sp. (Eusp)	0.3 (0.0)	2.0 (2.7)			
<i>Eunotia bilunaris</i> (Ehr.) Mills. (Eubi)			0.3 (0.2)	1.2 (0.3)	
<i>Fallacia pygmaea</i> (Kütz.) Stickle & Mann (Fapy)					
<i>Fragilaria arcus</i> (Ehr.) Cl. (Frar)					
<i>Fragilaria brevistriata</i> (Grun.) Williams & Round (Frbr)	0.2 (0.1)		0.3 (0.3)	0.7 (0.3)	0.1 (0.1)
<i>Fragilaria capucina</i> Desm. (Frca)	0.9 (0.5)	2.4 (0.9)	1.7 (1.1)	0.2 (0.1)	1.9 (0.4)
<i>Fragilaria capucina</i> var. <i>capitellata</i> (Grun.) Lange-Bertalot (Frcaca)					
<i>Fragilaria capucina</i> var. <i>gracilis</i> (Oestrup) Hust. (Frcag)					0.1 (0.1)

APPENDIX TABLE 1a (Cont.)

TAXA	Cottonwood 29VII96	Bodie 23VII96	Clearwater 26VII96	Adobe 2VIII96	O'Harrel 19VIII96
<i>Fragilaria capucina</i> var. <i>rumpens</i> (Kütz)					
Lange-Bertalot (Frcaru)	0.4 (0.2)	0.3 (0.3)	0.6 (0.5)		
<i>Fragilaria capucina</i> var. <i>vaucheriae</i> (Kütz)					
Lange-Bertalot (Frcava)	3.4 (0.6)	0.9 (0.2)	1.4 (0.6)	2.8 (0.9)	4.4 (0.3)
<i>Fragilaria crotonensis</i> Kitt. (Frcr)					
<i>Fragilaria leptostauron</i> (Ehr.) Hust. (Frle)	2.4 (0.5)	0.4 (0.3)	0.8 (0.8)	0.4 (0.3)	0.5 (0.1)
<i>Fragilaria parasitica</i> (W. Sm.) Grun. (Frpa)			0.2 (0.2)		
<i>Fragilaria parasitica</i> var. <i>subconstricta</i> Grun. (Frsu)					
<i>Fragilaria robusta</i> (Ralfs.) Lange-Bertalot (Frro)					
<i>Fragilaria tenera</i> (W. Sm.) Lange-Bertalot (Frte)					
<i>Fragilaria ulna</i> (Nitzs.) Lange-Bertalot (Frul)	6.5 (0.5)	3.3 (1.8)	3.1 (0.3)	3.8 (1.0)	1.6 (0.5)
<i>Fragilaria ulna</i> var. <i>acus</i> (Kütz.) Lange-Bertalot (Frar)					
<i>Fragilariforma virescens</i> (Ralfs)					
Williams & Round (Frvi)					
<i>Frustulia rhomboides</i> (Ehr.) DeToni (Frrh)					
<i>Frustulia vulgaris</i> (Thwaites) DeT. (Frvu)	0.1 (0.1)	0.3 (0.4)	0.1 (0.1)	0.7 (0.1)	0.5 (0.1)
<i>Gomphoneis herculeana</i> (Ehr.) Cl. (Gohe)			0.5 (0.3)		
<i>Gomphonema</i> sp. (Gosp)					
<i>Gomphonema accuminatum</i> Ehr. (Goac)					
<i>Gomphonema affine</i> Kütz. (Goaf)	0.1 (0.1)				
<i>Gomphonema angustum</i> Ag. (Goan)			0.5 (0.6)		0.2 (0.1)
<i>Gomphonema clavatum</i> Ehr. (Gocl)					

APPENDIX TABLE 1a (Cont.)

TAXA	Cottonwood 29VII96	Bodie 23VII96	Clearwater 26VII96	Adobe 2VIII96	O'Harrel 19VIII96
<i>Gomphonema clevei</i> Fricke (Gocl)		8.9 (6.1)	3.5 (5.0)		
<i>Gomphonema gracile</i> Ehr. (Gogr)					
<i>Gomphonema minuta</i> (C. Ag.) C. Ag. (Gomi)					
<i>Gomphonema olivaceum</i> (Horn.) Bréb. (Gool)					
<i>Gomphonema parvulum</i> Kütz. (Gopa)	1.3 (0.2)	1.4 (1.1)	1.4 (0.6)	0.5 (0.3)	0.1 (0.1)
<i>Gomphonema truncatum</i> (Cl. Ag.) Cl. Ag. (Gotr)					
<i>Gomphonema ventricosum</i> Greg. (Gove)		0.1 (0.1)	0.3 (0.2)		
<i>cf. Grammatophora</i> (Gr)					
<i>Gyrosigma</i> sp. (Gysp)		0.3 (0.3)	0.1 (0.1)		
<i>Gyrosigma acummatum</i> (Kütz.) Rabh. (Gyac)	0.3 (0.0)				
<i>Hantzschia amphioxys</i> (Ehr.) Grun. (Haam)	0.3 (0.3)	2.6 (2.3)	1.5 (1.1)	0.6 (0.3)	0.1 (0.1)
<i>Hippodonta capitata</i> Ehr. (Naca)			1.3 (1.2)		
<i>Karayevia clevei</i> (Grun.) Round & Bukhtyarova (Kacl)					0.9 (0.6)
<i>Luticola goeppertinana</i> (Bleisch) Mann (Lugo)					0.1 (0.1)
<i>Luticola mutica</i> (Kütz.) Mann (Lumu)	0.1 (0.1)	0.6 (0.6)	1.1 (0.5)	0.1 (0.1)	0.1 (0.1)
<i>Mastogloia smithii</i> Thwaites (Masm)					
<i>Melosira varians</i> Ag. (Meva)	6.9 (0.9)		3.3 (0.9)		
<i>Meridion circulare</i> (Grev.) Ag. (Meci)	2.3 (0.7)	1.1 (1.2)	0.6 (0.2)		0.8 (0.2)
<i>Meridion circulare</i> var. <i>constrictum</i> (Ralfs.) Van Heurck (Mecico)					
<i>Navicula</i> sp. (Nasp)					
<i>Navicula angusta</i> Grun. (Naan)					
<i>Navicula arenaria</i> Donk. (Naar)					
<i>Navicula arvensis</i> Hust. (Naarv)				0.5 (0.8)	
<i>Navicula bryophila</i> Boye Petersen (Nabr)				0.1 (0.1)	

APPENDIX TABLE 1a (Cont.)

TAXA	Cottonwood 29VII96	Bodie 23VII96	Clearwater 26VII96	Adobe 2VIII96	O'Harrel 19VIII96
<i>Navicula cari</i> Ehr. (Nacai)					
<i>Navicula cincta</i> (Ehr.) Ralfs (Nacin)					
<i>Navicula clematis</i> Grun (Nacl)					
<i>Navicula cryptocephala</i> Kütz. (Nacr)	1.5 (0.5)	1.2 (1.2)	5.3 (1.4)	0.6 (0.2)	0.1 (0.1)
<i>Navicula cryptonella</i> Lange-Bertalot (Nacry)					
<i>Navicula cuspidata</i> Kütz. (Kütz.) (Nacu)	0.1 (0.1)				
<i>Navicula decussis</i> Østrup. (Nade)					
<i>Navicula dentata</i> Hust. (Naden)					
<i>Navicula elginensis</i> (Greg.) Ralfs.n (Nael)					
<i>Navicula erifuga</i> Lange-Bertalot (Naer)					
<i>Navicula expecta</i> Van Land. (Naex)					
<i>Navicula heufleriana</i> (Grun.) Grun. (Nahe)					
<i>Navicula incerta</i> Lange-Bertalot (Nain)					
<i>Navicula indifferens</i> Hust. (Naind)	0.7 (0.2)	0.1 (0.2)	0.5 (0.3)		
<i>Navicula lanceolata</i> (Ag.) Kütz. (Nala)	3.8 (0.6)	1.0 (0.8)	3.5 (1.4)	0.3 (0.0)	
<i>Navicula libonensis</i> Schoemann (Nali)				0.2 (0.1)	1.4 (0.5)
<i>Navicula minuscula</i> Grun. (Namu)					
<i>Navicula protracta</i> (Grun.) Cl. (Napr)					
<i>Navicula radiosa</i> Kütz. (Nara)					
<i>Navicula reinhardtii</i> Grun. (Nare)					
<i>Navicula rhynchocephala</i> Kütz. (Narh)					
<i>Navicula rotundra</i> Hust. (Naro)			0.2 (0.2)		
<i>Navicula schoenfeldii</i> Hust. (Nasc)					
<i>Navicula schroeterii</i> Meister (Nasch)					

APPENDIX TABLE 1a (Cont.)

TAXA	Cottonwood 29VII96	Bodie 23VII96	Clearwater 26VII96	Adobe 2VIII96	O'Harrel 19VIII96
<i>Navicula subminiscula</i> (Grun.) Lange-Bertalot (Nasb)					
<i>Navicula subrhyncocephala</i> Hust. (Nasub)					
<i>Navicula subrotundata</i> Hust. (Nasubr)			0.3 (0.4)	0.5 (0.3)	
<i>Navicula tenelloides</i> Hust. (Nate)					
<i>Navicula tridentula</i> Krasske (Natri)	0.1 (0.1)	0.3 (0.3)	0.2 (0.2)	0.1 (0.1)	0.1 (0.1)
<i>Navicula tripunctata</i> (O.F. Müll) Bory (Natr)					
<i>Navicula variostrata</i> Krasske (Nava)					
<i>Navicula veneta</i> Kütz. (Nave)	1.8 (0.4)	1.5 (1.0)	0.5 (0.1)	1.1 (0.6)	1.1 (0.5)
<i>Navicula viridula</i> (Kütz.) Kütz. (Navi)					
<i>Nitzschia acicularis</i> W. Sm. (Niac)		0.6 (0.2)	0.2 (0.2)	0.2 (0.2)	
<i>Nitzschia amphibia</i> Grun. (Niam)	0.3 (0.2)	0.3 (0.3)	1.7 (1.4)	0.6 (0.3)	4.2 (0.5)
<i>Nitzschia compressa</i> (Bailey) Boyer (Nico)					
<i>Nitzschia dissipata</i> (Kütz.) Kütz. (Nidi)	1.5 (0.3)	5.3 (1.5)	2.4 (0.8)	4.7 (0.3)	0.2 (0.1)
<i>Nitzschia epithemoides</i> Grun. (Niep)					
<i>Nitzschia filiformis</i> (W. Sm.) Hust. (Nifi)	7.1 (0.6)	2.1 (0.3)	4.2 (1.1)	2.0 (0.7)	3.8 (0.1)
<i>Nitzschia frustulum</i> Kütz. (Nifr)	5.6 (1.0)	2.4 (0.6)	1.6 (0.2)	8.3 (1.8)	9.8 (2.9)
<i>Nitzschia heufleriana</i> Grun. (Nihe)					
<i>Nitzschia hybrida</i> Grun. (Nihy)					
<i>Nitzschia inconspicua</i> Grun. (Niin)					
<i>Nitzschia linearis</i> W. Sm. (Nili)		0.5 (0.7)	0.5 (0.4)		
<i>Nitzschia palea</i> (Kütz.) W. Sm. (Nipa)	3.2 (0.6)	30.0 (10.9)	6.5 (1.3)	5.0 (0.9)	2.7 (0.6)
<i>Nitzschia sigma</i> (Kütz.) W. Sm. (Nisi)	0.1 (0.1)		0.4 (0.5)		
<i>Nitzschia sigmaidea</i> (Nitz.) W. Sm. (Nisig)					
<i>Nitzschia sinuata</i> var. <i>delognei</i> (Grun.) Lange-Bertalot (Niside)				0.2 (0.1)	
<i>Nitzschia umbonata</i> (Ehr.) Lange-Bertalot (Nium)	0.1 (0.1)				

APPENDIX TABLE 1a (Cont.)

TAXA	Cottonwood 29VII96	Bodie 23VII96	Clearwater 26VII96	Adobe 2VIII96	O'Harrel 19VIII96
<i>Nitzschia vermicularis</i> (Kütz.) Hantz. (Nive)					
<i>Opephora olsenii</i> Moller (Opol)				1.4 (0.5)	0.4 (0.1)
<i>Pinnularia</i> sp. (Pisp)					
<i>Pinnularia borealis</i> Ehr. (Pibo)			0.2 (0.2)		0.1 (0.1)
<i>Pinnularia brevicostata</i> Cl. (Pibr)	0.2 (0.1)			0.1 (0.1)	
<i>Pinnularia divergens</i> W. Sm. (Pidi)	0.7 (0.4)	0.1 (0.1)	0.1 (0.1)	0.1 (.01)	0.7 (0.1)
<i>Pinnularia lagerstedtii</i> (Cl.) Cl.- Euler (Pila)					
<i>Pinnularia maior</i> (Kütz.) Rabh. (Pima)					0.4 (0.1)
<i>Pinnularia obscura</i> Krasske (Piob)					
<i>Pinnularia stromatophora</i> (Grun.) Cl. (Pist)					
<i>Pinnularia subcapitata</i> Greg. (Pisu)	0.1 (0.1)		0.2 (0.2)	0.3 (0.0)	0.2 (0.1)
<i>Pinnularia viridis</i> (Nitz.) Ehr. (Pivi)					
<i>Planothidium delicatula</i> (Kütz.) Round & Bukhtiyarova (Plde)					
<i>Planothidium lanceolata</i> (Breb.) Round & Bukhtiyarova (Plla)	22.8 (1.7)	5.3 (4.0)	7.3 (2.7)	3.5 (0.6)	4.3 (0.7)
<i>Planothidium lanceolata</i> var. <i>dubia</i> (Grun.) Lange-Bertalot (Plladu)					
<i>Reimeria sinuata</i> (Greg.) Kociolek & Stoermer (Resi)		0.8 (0.1)	0.2 (0.2)	0.4 (0.2)	0.4 (0.2)
<i>Rhopalodia gibba</i> (Ehr.) O. Müll. (Rhgi)	0.1 (0.1)	0.2 (0.3)	0.7 (0.2)	0.2 (0.2)	
<i>Rhopalodia gibberula</i> (Ehr.) O. Müll. (Rhgib)	0.2 (0.1)	1.0 (0.7)	1.3 (0.9)	1.9 (0.4)	0.9 (0.0)
<i>Rhoicosphenia abbreviata</i> (Ag.) Lange-Bertalort (Rhab)	0.7 (0.2)	12.0 (10.3)	5.5 (2.2)	0.4 (0.3)	
<i>Sellophora pupula</i> (Kütz.) Mereschkowsky (Sepu)	0.1 (0.1)	0.3 (0.3)		0.2 (0.1)	0.6 (0.4)
<i>Sellophora pupula</i> var. <i>psuedopupula</i> (Krasske) Mereschkowsky (Sepups)					0.1 (0.1)

APPENDIX TABLE 1a (Cont.)

TAXA	Cottonwood 29VII96	Bodie 23VII96	Clearwater 26VII96	Adobe 2VIII96	O'Harrel 19VIII96
<i>Sellaphora pygmaea</i> (Kütz.) Mereschkowsky (Sepy)					
<i>Sellaphora seminulum</i> (Grun.) Mann (Sese)	2.0 (0.7)	1.1 (0.9)	1.0 (0.7)		
<i>Stauroneis anceps</i> Ehr. (Stan)					0.1 (0.1)
<i>Stauroneis kriegerii</i> Patrick (Stkr)					
<i>Stauroneis phoenicenteron</i> (Nitz.) Ehr. (Stph)					
<i>Stauroneis smithii</i> Grun. (Stsm)					
<i>Staurosira construens</i> (Ehr.) Hust. (Frc)			0.4 (0.3)	1.2 (0.7)	3.8 (0.5)
<i>Staurosira construens</i> f. <i>binodis</i> (Ehr.) Hust. (Frcobi)					
<i>Staurosira construens</i> var. <i>venter</i> (Ehr.) Hust. (Frve)					
<i>Staurosirella pinnata</i> (Ehr.) Williams & Round (Stpi)	1.2 (0.3)	0.9 (0.5)	8.3 (4.8)	4.3 (1.9)	2.2 (0.8)
<i>Stephanodiscus hantzschii</i> Grun. (in Cl. & Grun.) (Stha)					
<i>Stephanodiscus niagare</i> Ehr. (Stni)					
<i>Surirella angustata</i> Kütz. (Syan)	0.3 (0.0)	0.5 (0.1)			
<i>Surirella brebissonii</i> Kramm & Lange-Bertalot (Subr)	0.4 (0.2)	0.5 (0.3)	0.9 (0.4)		
<i>Surirella ovalis</i> Breb. (Suov)	0.1 (0.1)				
<i>Surirella striatula</i> Turp. (Sust)					0.2 (0.1)
<i>Surirella tenera</i> Greg. (Sute)					0.1 (0.1)
<i>Tabellaria flocculosa</i> (Roth) Kütz. (Tafl)					
<i>Tetracyclus rupestris</i> (Braun.) Grun. (Teru)					1.0 (0.3)

APPENDIX TABLE 1b. Relative % (\pm SE) frequency of diatoms and collection dates for selected streams in the Lahontan Basin, USA. Species acronyms are in parentheses.

TAXA	Convict 10VII96	Deep 31VII96	Green 1VIII96	Little Walker 21VIII96	Dog 9VII97
<i>Achnanthes exigua</i> Grun. (Acex)	0.2 (0.2)	0.1 (0.1)			
<i>Achnanthes hungarica</i> Grun. (Achu)					
<i>Achnanthes laterostrata</i> Hust. (Acla)					
<i>Achnanthes linearis</i> (W. Sm.) Grun. (Acli)					
<i>Achnantheidium minutissima</i> (Kütz.) Czar. (Acmi)	27.9 (9.1)	4.7 (1.5)	30.1 (6.0)	31.5 (3.2)	28.5 (2.4)
<i>Amphipleura pellucida</i> (Kütz.) Kütz. (Ampel)					
<i>Amphora coffeaeformis</i> (Ag.) Kütz. (Amco)				0.5 (0.5)	0.6 (0.3)
<i>Amphora ovalis</i> (Kütz.) Kütz. (Amov)	1.1 (0.5)				
<i>Amphora pediculus</i> (Kütz.) Grun. (Ampe)	0.2 (0.2)			0.3 (0.3)	
<i>Amphora veneta</i> Kütz. (Amve)					
<i>Anomoeoneis sphaerophora</i> f. <i>costata</i> Kütz.) Schmid. (Anspco)					
<i>Anomoeoneis vitrea</i> (Grun.) Grun. (Anvi)					
<i>Asterionella formosa</i> Hass. (Asfo)	3.8 (1.6)				
<i>Aulacoseira ambigua</i> (Grun.) Simon. (Auam)		0.7 (0.1)	4.3 (1.8)	0.5 (0.5)	0.5 (0.5)
<i>Aulacoseira islandica</i> O. Muell. (Auis)					
<i>Aulacoseira italica</i> (Ehr.) Simon. (Auit)					
<i>Caloneis amphibaena</i> (Bory) Cl. (Caam)					
<i>Caloneis bacillum</i> (Grun.) Cl. (Caba)	0.2 (0.2)				
<i>Caloneis molaris</i> (Grun.) Krammer (Camo)					
<i>Caloneis schumanniana</i> (Grun.) Cl. (Case)					
<i>Caloneis silicula</i> (Ehr.) Cl. (Casi)			0.2 (0.2)		
<i>Caloneis sublinearis</i> (Grun.) Krammer (Casu)		0.1 (0.1)			0.6 (0.3)
<i>Caloneis tenuis</i> (Greg.) Krammer (Cate)			0.5 (0.3)		
<i>Cocconeis pediculus</i> Ehr. (Cope)	0.2 (0.2)	0.3 (0.3)			

APPENDIX TABLE 1b. (Cont.)

TAXA	Convict 10VII96	Deep 31VII96	Green 1VIII96	Little Walker 21VIII96	Dog 9VII97
<i>Cocconeis placentula</i> Ehr. (Copl)					
<i>Cocconeis placentula</i> var. <i>euglypta</i> (Ehr.) Cl. (Cople)	2.2 (0.2)			6.9 (3.4)	6.1 (3.6)
<i>Cocconeis placentula</i> var. <i>lineata</i> (Ehr.) V.H. (Coppli)	20.4 (7.7)	0.4 (0.1)	1.9 (0.7)		
<i>Cocconeis placentula</i> var. <i>pseudolineata</i> Geitler (Coplps)					
<i>Ctenophora pulchella</i> (Ralfs) Williams & Round (Ctpu)					
<i>Cyclotella</i> sp. (Csp)					
<i>Cyclotella bodanica</i> Grun. (Cybo)	2.6 (2.0)				
<i>Cyclotella meneghiniana</i> Kütz. (Cyme)					
<i>Cyclotella stelligera</i> Cl. & Grun. (Cyst)	1.2 (0.8)		1.4 (0.3)	0.3 (0.3)	
<i>Cyclostephanos novaezealandiae</i> (Cl.) Round (Cyno)	0.2 (0.2)				
<i>Cymatopleura solea</i> (Bréb) W. Sm. (Cyso)					
<i>Cymbella</i> sp. (Cysp)		0.1 (0.1)			
<i>Cymbella affinis</i> Kütz. (Cyaf)	0.5 (0.7)		1.3 (0.3)	0.3 (0.3)	
<i>Cymbella aspera</i> (Ehr.) Cl. (Cyas)	0.1 (0.1)				
<i>Cymbella amphicephala</i> Naeg. ex Kütz. (Cyam)				0.2 (0.1)	
<i>Cymbella cistula</i> (Ehr.) Kirch (Cyci)					
<i>Cymbella gracilis</i> (Ehr.) Kütz. (Cygr)			0.3 (0.2)		
<i>Cymbella latens</i> Krasske (Cyla)				0.2 (0.2)	
<i>Cymbella mexicana</i> (Ehr.) Cl. (Cymex)					
<i>Cymbella minuta</i> Hilse ex. Rabh. (Cymi)	0.8 (1.1)	7.5 (1.9)	1.3 (0.2)	0.3 (0.3)	1.4 (0.2)
<i>Cymbella naviculiformis</i> (Auers.) Cl. (Cyna)			0.1 (0.1)		
<i>Cymbella prostrata</i> (Berk.) Cl. (Cypr)					
<i>Cymbella proxima</i> Reimer (Cypro)					
<i>Cymbella silesiaca</i> Bleisch in Rabh. (Cysi)					
<i>Cymbella tumida</i> (Breb.) Van Heurck (Cytu)					
<i>Cybellonitzschia diluviana</i> Hust. (Cydi)					

APPENDIX TABLE 1b. (Cont.)

TAXA	Convict 10VII96	Deep 31VII96	Green 1VIII96	Little Walker 21VIII96	Dog 9VII97
<i>Denticula elegans</i> Kütz. (Deel)					
<i>Diatoma</i> sp. (Disp)					
<i>Diatoma hyemalis</i> (Roth) Heiberg (Dihy)					
<i>Diatoma mesodon</i> (Ehr.) Kütz. (Dime)					
<i>Diatoma tenuis</i> Ag. (Dite)					
<i>Diatoma vulgaris</i> Bory (Divu)	0.2 (0.2)				
<i>Diploneis</i> sp. (Dipsp)					
<i>Diploneis elliptica</i> (Kütz.) Cl. (Diel)					
<i>Diploneis oblongella</i> (Naeg. ex. Kütz.) Ross (Diob)					
<i>Encyonopsis microcephala</i> (Grun.) Krammer (Enmi)					
<i>Eolimna minima</i> (Grun.) Lange-Bertalot (Eomi)		0.4 (0.4)			
<i>Epithemia</i> sp. (Epsp)		0.2 (0.2)			
<i>Epithemia adnata</i> (Kütz.) Bréb. (Epad)					
<i>Epithemia argus</i> (Ehr.) Kütz. (Epar)					
<i>Epithemia sorex</i> Kütz. (Eps)				0.6 (0.6)	
<i>Epithemia turgida</i> (Ehr.) Kütz. (Eptu)	0.2 (0.3)		0.5 (0.3)		
<i>Eunotia</i> sp. (Eusp)		0.3 (0.3)			
<i>Eunotia bilunaris</i> Ehr. (Mills.) (Eubi)	0.2 (0.2)		2.7 (0.7)	0.6 (0.6)	
<i>Fragilaria arcus</i> (Ehr.) Cl. (Frar)	5.4 (0.8)	1.2 (0.4)	0.6 (0.6)	0.9 (0.1)	
<i>Fragilaria brevistriata</i> Grun. (Frbr)			0.5 (0.3)		0.6 (0.3)
<i>Fragilaria capucina</i> Desm. (Frc)	0.2 (0.2)	2.1 (1.1)	2.1 (0.4)		1.2 (0.6)
<i>Fragilaria capucina</i> var. <i>capitellata</i> (Grun. Lange-Bertalot (Frcaca)					
<i>Fragilaria capucina</i> var. <i>gracilis</i> (Oestrup) Hust. (Frcag)					

APPENDIX TABLE 1b. (Cont.)

TAXA	Convict 10VII96	Deep 31VII96	Green 1VIII96	Little Walker 21VIII96	Dog 9VII97
<i>Fragilaria capucina</i> var. <i>rumpens</i> (Kütz.) Lange-Bertalot (Frcaru)	0.5 (0.7)				
<i>Fragilaria capucina</i> var. <i>vaucheriae</i> (Kütz.) Lange-Bertalot (Frcava)	4.2 (2.8)	22.5 (3.1)	3.6 (1.3)	5.7 (1.8)	3.0 (1.0)
<i>Fragilaria crotonensis</i> Kitt. (Frcr)					
<i>Fragilaria leptostauron</i> (Ehr.) Hust. (Frle)	0.3 (0.3)	0.2 (0.2)	0.2 (0.2)		
<i>Fragilaria parasitica</i> (W. Sm.) Grun. (Frpa)					
<i>Fragiaria parasitica</i> var. <i>subconstricta</i> Grun. (Frsu)					
<i>Fragilaria robusta</i> (Fusey) Manguim (Frrb)			0.1 (0.1)		
<i>Fragilaria tenera</i> (W. Sm.) Lange-Bertalot (Frte)			4.8 (0.8)		0.3 (0.3)
<i>Fragilaria ulna</i> (Nitzs.) Lange-Bertalot (Frul)	2.2 (1.3)	15.3 (6.6)	1.8 (0.7)	5.4 (3.3)	3.5 (1.0)
<i>Fragilaria ulna</i> var. <i>acus</i> (Kütz.) Lange-Bertalot (Frar)					
<i>Fragilariforma virescens</i> (Ralfs.) Williams & Round (Frvi)					
<i>Frustulia rhomboides</i> (Ehr.) DeToni (Frrh)					
<i>Frustulia vulgaris</i> (Thwaites) DeT. (Frvu)		0.4 (0.3)	0.1 (0.1)		
<i>Gomphoneis herculeana</i> (Ehr.) Cl. (Gohe)		0.1 (0.1)		0.9 (0.9)	
<i>Gomphonema</i> sp. (Gosp)	1.6 (1.2)				
<i>Gomphonema accuminatum</i> Ehr. (Goac)					
<i>Gomphonema affine</i> Kütz. (Goaf)					
<i>Gomphonema angustum</i> Ag. (Goan)				4.0 (0.9)	1.6 (0.9)
<i>Gomphonema clavatum</i> Ehr. (Gocl)					

APPENDIX TABLE 1b. (Cont.)

TAXA	Convict 10VII96	Deep 31VII96	Green 1VIII96	Little Walker 21VIII96	Dog 9VII97
<i>Gomphonema clevei</i> Fricke (Gocl)	7.6 (2.4)				
<i>Gomphonema gracile</i> Ehr. (Gogr)					
<i>Gomphonema minuta</i> (C. Ag.) C. Ag. (Gomi)					
<i>Gomphonema olivaceum</i> (Horn.) Bréb. (Gool)	0.5 (0.3)				
<i>Gomphonema parvulum</i> Kütz. (Gopa)		0.3 (0.2)	4.6 (2.4)	1.6 (0.4)	2.2 (0.8)
<i>Gomphonema truncatum</i> (Cl. Ag.) Cl. Ag. (Gotr)					
<i>Gomphonema ventricosum</i> Greg. (Gove)					
cf. <i>Grammatophora</i> (Gr)					
<i>Gyrosigma</i> sp. (Gysp)					
<i>Gyrosigma acummatum</i> (Kütz.) Rabh. (Gyac)					
<i>Hantzschia amphioxys</i> (Ehr.) Grun. (Haam)			0.2 (0.2)		
<i>Hippodonta capitata</i> Ehr. (Naca)					0.6 (0.3)
<i>Karayevia clevei</i> (Grun.) Round & Bukhtyarova (Kacl)					
<i>Luticola mutica</i> (Kütz.) Mann (Lumu)					
<i>Mastogloia smithii</i> Thwaites (Masm)				0.6 (0.6)	
<i>Melosira varians</i> Ag. (Meva)		0.2 (0.3)			
<i>Meridion circulare</i> (Grev.) Ag. (Meci)		0.7 (0.3)	0.2 (0.2)	0.3 (0.3)	
<i>Meridion circulare</i> var. <i>constrictum</i> (Ralfs) Van Heurck (Mecico)		0.1 (0.1)			
<i>Navicula</i> sp. (Nasp)					
<i>Navicula angusta</i> Grun. (Naan)					
<i>Navicula arenaria</i> Donk. (Naar)					
<i>Navicula arvensis</i> Hust. (Naarv)		0.9 (0.6)		0.2 (0.2)	
<i>Navicula bryophila</i> Boye Petersen (Nabr)			0.3 (0.3)		
<i>Navicula capitatoradiata</i> Germain (Nacap)					

APPENDIX TABLE 1b. (Cont.)

TAXA	Convict 10VII96	Deep 31VII96	Green 1VIII96	Little Walker 21VIII96	Dog 9VII97
<i>Navicula cari</i> Ehr. (Naca)					
<i>Navicula cincta</i> (Ehr.) Ralfs (Naci)					
<i>Navicula clematis</i> Grun. (Nacl)					
<i>Navicula cryptocephala</i> Kütz. (Nacr)		0.6 (0.3)	0.1 (0.1)	0.2 (0.2)	4.7 (1.3)
<i>Navicula cryptonella</i> Lange-Bertalot (Nacry)					
<i>Navicula cuspidata</i> Kütz. (Kutz.) (Nacu)					
<i>Navicula decussis</i> Østrup. (Nade)					
<i>Navicula dentata</i> Hust. (Naden)					
<i>Navicula elginensis</i> (Greg.) Ralfs. (Nael)	1.1 (0.5)				0.3 (0.3)
<i>Navicula erifuga</i> Lange-Bertalot (Naer)					
<i>Navicula expecta</i> Van Land. (Naex)					
<i>Navicula heufleriana</i> (Grun.) Grun. (Nahe)					
<i>Navicula incerta</i> Lange-Bertalot (Nain)					
<i>Navicula indifferens</i> Hust. (Naind)		0.7 (0.7)			
<i>Navicula lanceolata</i> (Ag.) Kütz. (Nala)		0.4 (0.2)	1.1 (0.2)		1.1 (0.8)
<i>Navicula libonensis</i> Schoemann (Nali)					
<i>Navicula minuscula</i> Grun. (Nami)					
<i>Navicula protracta</i> (Grun.) Cl. (Napr)					
<i>Navicula radiosa</i> Kütz. (Nara)			0.2 (0.2)		
<i>Navicula reinhardtii</i> Grun. (Nare)					
<i>Navicula rhynchocephala</i> Kütz. (Narh)					
<i>Navicula rotundra</i> Hust. (Naro)	0.7 (0.5)				
<i>Navicula schoenfeldii</i> Hust. (Nasc)					
<i>Navicula schroeterii</i> Meister (Nasch)					

APPENDIX TABLE 1b. (Cont.)

TAXA	Convict 10VII96	Deep 31VII96	Green 1VIII96	Little Walker 21VIII96	Dog 9VII97
<i>Navicula subminiscula</i> Mang. (Nasb)					
<i>Navicula subrhyncocephala</i> Hust. (Nasub)					
<i>Navicula subrotundata</i> Hust. (Nasubr)					
<i>Navicula tenelloides</i> Hust. (Nate)				10.6 (3.1)	
<i>Navicula tridentula</i> Krasske (Natr)					
<i>Navicula tripunctata</i> (O.F. Müll) Bory (Natri)					
<i>Navicula variostrata</i> Krasske (Nava)					
<i>Navicula veneta</i> Kütz. (Nave)	2.8 (0.6)	1.3 (0.3)	0.5 (0.3)	1.5 (0.4)	1.2 (0.3)
<i>Navicula viridula</i> (Kütz.) Kütz. (Navi)					
<i>Nitzschia acicularis</i> W. Sm. (Naac)					
<i>Nitzschia amphibia</i> Grun. (Naam)			0.6 (0.6)		
<i>Nitzschia compressa</i> (Bailey) Boyer (Nico)				0.6 (0.6)	
<i>Nitzschia dissipata</i> (Kütz.) Kütz. (Nidi)	0.9 (0.7)	5.0 (0.5)	1.8 (0.5)	0.9 (0.6)	3.3 (2.1)
<i>Nitzschia epithemoides</i> Grun. (Niep)				0.6 (0.6)	
<i>Nitzschia filiformis</i> (W. Sm.) Hust. (Nifi)		0.5 (0.2)		0.3 (0.3)	0.3 (0.3)
<i>Nitzschia frustulum</i> Kütz. (Nifr)	0.8 (0.6)	0.9 (1.0)	1.6 (0.7)	2.4 (0.6)	0.3 (0.3)
<i>Nitzschia heufleriana</i> Grun. (Nihe)					
<i>Nitzschia hybrida</i> Grun. (Nihy)					
<i>Nitzschia inconspicua</i> Grun. (Niin)					
<i>Nitzschia linearis</i> W. Sm. (Nili)					
<i>Nitzschia palea</i> (Kütz.) W. Sm. (Nipa)	1.7 (0.2)	2.7 (1.1)	1.3 (0.7)	1.5 (0.4)	0.7 (0.7)
<i>Nitzschia sigma</i> (Kütz.) W. Sm. (Nisi)				0.9 (0.5)	0.6 (0.6)
<i>Nitzschia sigmoidea</i> (Nitz.) W. Sm. (Nisig)					
<i>Nitzschia sinuata</i> var. <i>delognei</i> (Grun.) Lange-Bertalot (Niside)					

APPENDIX TABLE 1b. (Cont.)

TAXA	Convict 10VII96	Deep 31VII96	Green 1VIII96	Little Walker 21VIII96	Dog 9VII97
<i>Nitzschia umbonata</i> (Ehr.) Lange-Bertalot (Nium)					
<i>Nitzschia vermicularis</i> (Kütz.) Hantz. (Nive)					
<i>Opephora olsenii</i> Moller (Opol)			8.8 (2.4)	2.8 (0.9)	2.0 (0.2)
<i>Pinnularia</i> sp. (Pisp)					
<i>Pinnularia borealis</i> Ehr. (Pibo)					
<i>Pinnularia brevicostata</i> Cl. (Pibr)					
<i>Pinnularia divergens</i> W. Sm. (Pidi)		0.3 (0.3)	1.1 (0.5)		0.3 (0.3)
<i>Pinnularia lagerstedtii</i> (Cl.) Cl.- Euler (Pila)					
<i>Pinnularia maior</i> (Kütz.) Rabh. (Pima)					
<i>Pinnularia obscura</i> Krasske (Piob)					
<i>Pinnularia stromatophora</i> (Grun.) Cl. (Pist)					
<i>Pinnularia subcapitata</i> Greg. (Pisu)		0.5 (0.1)	1.2 (0.2)		1.2 (0.3)
<i>Pinnularia viridis</i> (Nitz.) Ehr. (Pivi)					
<i>Planothidium delicatula</i> (Kütz.) Round & Bukhtiyarova (Plde)					
<i>Planothidium lanceolata</i> (Breb.) Round & Bukhtiyarova (Plla)		14.7 (2.5)	0.8 (0.2)	3.7 (0.1)	16.8 (4.0)
<i>Planothidium lanceolata</i> var. <i>dubia</i> (Grun.) Round & Bukhtiyarova (Plladu)					
<i>Reimeria sinuata</i> (Greg) Kociolek & Stoermer (Resi)	4.8 (1.8)	0.5 (0.1)	0.8 (0.2)	4.6 (0.9)	1.4 (0.2)
<i>Rhopalodia gibba</i> (Ehr.) O. Müll. (Rhgi)					
<i>Rhopalodia gibberula</i> (Ehr.) O. Müll. (Rhgib)				1.6 (0.8)	0.6 (0.3)
<i>Rhoicosphenia abbreviata</i> (Ag.) Lange-Bertalot (Rhab)	0.2 (0.2)	0.7 (0.7)	0.3 (0.2)	1.0 (0.9)	11.4 (6.2)
<i>Sellophora pupula</i> (Kütz.) Mereschkowsky (Sepu)					
<i>Sellophora pupula</i> var. <i>pseudopupula</i> (Krasske) Mereschkowsky (Sepups)					

APPENDIX TABLE 1b. (Cont.)

TAXA	Convict 10VII96	Deep 31VII96	Green 1VIII96	Little Walker 21VIII96	Dog 9VII97
<i>Sellaphora pygmaea</i> (Kütz.) Mereschkowsky (Sepy)				1.4 (0.3)	
<i>Sellaphora seminulum</i> (Grun.) Mann (Sese)					
<i>Stauroneis anceps</i> Ehr. (Stan)					
<i>Stauroneis kriegerii</i> Patrick (Stkr)					
<i>Stauroneis phoenicenteron</i> (Nitz.) Ehr. (Stph)					
<i>Stauroneis smithii</i> Grun. (Stsm)					
<i>Staurosira construens</i> (Ehr.) Hust. (Frc)	1.4 (1.8)		0.9 (0.5)	1.9 (1.9)	
<i>Staurosira construens</i> f. <i>binodis</i> (Ehr.) Hust. (Frcobi)					
<i>Staurosira construens</i> var. <i>venter</i> (Ehr.) Hust. (Frcove)					
<i>Staurosirella pinnata</i> (Ehr.) Williams & Round (Stpi)	6.3 (3.1)	4.9 (1.8)	9.8 (2.5)	1.1 (0.6)	1.9 (1.3)
<i>Stephanodiscus hantzschii</i> Grun. (in Cl. & Grun.) (Stha)					
<i>Stephanodiscus niagare</i> Ehr. (Stni)					
<i>Surirella angustata</i> Kütz. (Suan)		0.6 (0.2)			
<i>Surirella brebissonii</i> Kram. & Lange-Bertalot (Subr)		0.2 (0.3)		0.6 (0.6)	
<i>Surirella ovalis</i> Breb. (Suov)		0.1 (0.1)			
<i>Surirella striatula</i> Turp. (Sust)					
<i>Surirella tenera</i> Greg. (Sute)					
<i>Tabellaria flocculosa</i> (Roth) Kütz. (Tafl)				3.8 (1.0)	0.3 (0.3)
<i>Tetracyclus rupestris</i> (Braun.) Grun. (Teru)		2.8 (1.0)			0.3 (0.3)

APPENDIX TABLE 1c. Relative % (\pm SE) frequency of diatoms and collection dates for selected streams in the Lahontan Basin, USA. Species acronyms are in parentheses.

TAXA	East Walker 10IX96	Dexter Canyon 3XI96	Clear Water 26VII96	Poore 31VII97	Slinkard 30VII97
<i>Achnanthes exigua</i> Grun. (Acex)		0.3 (0.3)	0.1 (0.1)		0.4 (0.4)
<i>Achnanthes hungarica</i> Grun. (Achu)			0.1 (0.1)		
<i>Achnanthes laterostrata</i> Hust. (Acla)					
<i>Achnanthes linearis</i> (W. Sm.) Grun. (Acli)					
<i>Achnantheidium minutissima</i> (Kütz.) Czar. (Acmi)	4.7 (2.7)	10.8 (2.1)	4.2 (.05)	9.8 (1.3)	13.7 (1.9)
<i>Amphipleura pellucida</i> (Kütz.) Kütz. (Ampel)					
<i>Amphora coffeaeformis</i> (Ag.) Kütz. (Amco)					
<i>Amphora ovalis</i> (Kütz.) Kütz. (Amov)	0.3 (0.2)				
<i>Amphora pediculus</i> (Kütz.) Grun. (Ampe)		0.3 (0.3)		0.8 (0.4)	0.7 (0.3)
<i>Amphora veneta</i> Kütz. (Amve)					
<i>Anomoeoneis sphaerophora</i> f. <i>costata</i> Kütz.) Schmid. (Anspco)	0.3 (0.3)				
<i>Anomoeoneis vitrea</i> (Grun.) Grun. (Anvi)					
<i>Asterionella formosa</i> Hass. (Asfo)					
<i>Aulacoseira ambigua</i> (Grun.) Simon. (Auam)	0.7 (0.1)	1.2 (0.8)			
<i>Aulacoseira islandica</i> O. Muell. (Auis)					
<i>Aulacoseira italica</i> (Ehr.) Simon. (Auit)					
<i>Caloneis amphibaena</i> (Bory) Cl. (Caam)					
<i>Caloneis bacillum</i> (Grun.) Cl. (Caba)					
<i>Caloneis molaris</i> (Grun.) Krammer (Camo)					
<i>Caloneis schumanniana</i> (Grun.) Cl. (Case)					
<i>Caloneis silicula</i> (Ehr.) Cl. (Casi)					0.2 (0.2)
<i>Caloneis sublinearis</i> (Grun.) Kramme (Casu)	0.3 (0.1)	0.8 (0.6)	0.6 (0.1)		
<i>Caloneis tenuis</i> (Greg.) Krammer (Cate)					
<i>Cocconeis pediculus</i> Kütz. (Cope)	0.4 (0.2)				

APPENDIX TABLE 1c. (Cont.)

TAXA	East Walker 10IX96	Dexter Canyon 3XI96	Clear Water 26VII96	Poore 31VII97	Slinkard 30VII97
<i>Cocconeis placentula</i> Ehr. (Copl)					
<i>Cocconeis placentula</i> var. <i>euglypta</i> (Ehr.) Cl. (Cople)	13.5 (3.8)	5.7 (0.3)	7.0 (0.5)	3.1 (0.1)	24.7 (4.6)
<i>Cocconeis placentula</i> var. <i>lineata</i> (Ehr.) V.H. (Coplli)					
<i>Cocconeis placentula</i> var. <i>pseudolineata</i> Geitler (Coplps)					
<i>Ctenophora pulchella</i> (Ralfs) Williams & Round (Ctpu)			0.1 (0.1)		
<i>Cyclotella</i> sp. (Csp)					
<i>Cyclotella bodanica</i> Grun. (Cybo)				0.2 (.01)	
<i>Cyclotella meneghiniana</i> Kütz. (Cyme)	7.4 (1.6)	0.3 (0.2)	0.5 (.01)	0.2 (0.2)	
<i>Cyclotella stelligera</i> Cl. & Grun. (Cyst)			0.2 (0.2)		
<i>Cyclostephanos novaezeelandiae</i> (Cl.) Round (Cyno)					
<i>Cymatopleura solea</i> (Bréb) W. Sm. (Cyso)					
<i>Cymbella</i> sp. (Cysp)					
<i>Cymbella affinis</i> Kütz. (Cyaf)	0.8 (0.2)	2.6 (2.1)	0.5 (.01)	35.3 (2.1)	0.2 (0.2)
<i>Cymbella aspera</i> (Ehr.) Cl. (Cyas)					
<i>Cymbella amphicephala</i> Naeg. ex. Kütz. (Cyam)	0.2 (0.2)				
<i>Cymbella cistula</i> (Ehr.) Kirch. (Cyci)					
<i>Cymbella gracilis</i> (Ehr.) Kütz. (Cygr)					
<i>Cymbella latens</i> Krasske (Cyla)					
<i>Cymbella mexicana</i> (Ehr.) Cl. (Cymex)					
<i>Cymbella minuta</i> Hilse ex. Rabh. (Cymi)	0.2 (0.2)		0.1 (0.1)	0.3 (.01)	
<i>Cymbella naviculiformis</i> (Auers.) Cl. (Cyna)	0.2 (0.2)	0.3 (0.3)			
<i>Cymbella prostrata</i> (Berk.) Cl. (Cypr)			0.2 (0.2)	0.4 (0.4)	
<i>Cymbella proxima</i> Reimer (Cypro)					
<i>Cymbella silesiaca</i> Bleisch in Rabh. (Cysi)	4.1 (1.0)				
<i>Cymbella tumida</i> (Breb.) Van Heurck (Cytu)					
<i>Cybellonitzschia diluviana</i> Hust. (Cydi)					

APPENDIX TABLE 1c. (Cont.)

TAXA	East Walker 10IX96	Dexter Canyon 3XI96	Clear Water 26VII96	Poore 31VII97	Slinkard 30VII97
<i>Denticula elegans</i> Kütz. (Deel)		1.1 (0.5)	0.7 (0.31)		
<i>Diatoma</i> sp. (Disp)					
<i>Diatoma hyemalis</i> (Roth) Heiberg (Duhy)					
<i>Diatoma mesodon</i> (Ehr.) Kütz. (Dime)			0.3 (0.3)	0.4 (0.4)	0.3 (.03)
<i>Diatoma tenuis</i> Ag. (Dite)		0.1 (0.1)			
<i>Diatoma vulgaris</i> Bory (Divu)	0.3 (0.2)	0.1 (0.1)	0.4 (0.3)		
<i>Diploneis</i> sp. (Dipsp)					0.3 (0.3)
<i>Diploneis elliptica</i> (Kütz.) Cl. (Diel)					
<i>Diploneis oblongella</i> (Naeg. ex. Kütz) Ross (Diob)					
<i>Encyonopsis microcephala</i> (Grun.) Krammer (Enmi)					
<i>Eolimna minima</i> (Kütz.) Lange-Bertalot (Eimi)					
<i>Epithemia</i> sp. (Epsp)					
<i>Epithemia adnata</i> (Kütz.) Bréb. (Epad)					
<i>Epithemia argus</i> (Ehr.) Kütz. (Epar)					
<i>Epithemia sorex</i> Kütz. (Epsa)			1.8 (1.3)		0.4 (0.4)
<i>Epithemia turgida</i> (Ehr.) Kütz. (Eptu)	0.7 (0.1)	0.1 (0.1)		0.2 (0.1)	
<i>Eunotia</i> sp. (Eusp)					
<i>Eunotia bilunaris</i> (Ehr.) Mills. (Eubi)	0.4 (0.2)				
<i>Fallacia pygmaea</i> (Kütz.) Stickle & Mann (Fapy)					
<i>Fragilaria arcus</i> (Ehr.) Cl. (Frar)					
<i>Fragilaria brevistriata</i> (Grun.) Williams & Round (Frbr)	0.7 (0.1)	0.6 (0.3)			0.3 (0.3)
<i>Fragilaria capucina</i> Desm. (Frca)	6.9 (1.7)	1.3 (0.2)	4.4 (0.5)	5.0 (1.3)	4.9 (0.9)
<i>Fragilaria capucina</i> var. <i>capitellata</i> (Grun.) Lange-Bertalot (Frcaca)					
<i>Fragilaria capucina</i> var. <i>gracilis</i> (Oestrup) Hust. (Frcag)					0.6 (0.6)

APPENDIX TABLE 1c. (Cont.)

TAXA	East Walker 10IX96	Dexter Canyon 3XI96	Clear Water 26VII96	Poore 31VII97	Slinkard 30VII97
<i>Fragilaria capucina</i> var. <i>rumpens</i> (Kütz) Lange-Bertalot (Frcaru)				0.4 (0.1)	
<i>Fragilaria capucina</i> var. <i>vaucheriae</i> (Kütz) Lange-Bertalot (Frcava)	1.1 (0.4)	3.1 (1.2)	1.1 (0.2)	0.9 (0.4)	3.4 (1.2)
<i>Fragilaria crotonensis</i> Kitt. (Frcr)					
<i>Fragilaria leptostauron</i> (Ehr.) Hust. (Frle)				0.6 (0.1)	0.9 (0.1)
<i>Fragilaria parasitica</i> (W. Sm.) Grun. (Frpa)					
<i>Fragilaria parasitica</i> var. <i>subconstricta</i> Grun. (Frsu)	0.3 (0.2)				
<i>Fragilaria robusta</i> (Ralfs.) Lange-Bertalot (Frro)					
<i>Fragilaria tenera</i> (W. Sm.) Lange-Bertalot (Frte)					
<i>Fragilaria ulna</i> (Nitzs.) Lange-Bertalot (Frul)	2.2 (0.4)	1.4 (0.3)	1.9 (0.5)	3.3 (0.1)	1.5 (0.4)
<i>Fragilaria ulna</i> var. <i>acus</i> (Kütz.) Lange-Bertalot (Frar)					
<i>Fragilariforma virescens</i> (Ralfs) Williams & Round (Frvi)					
<i>Frustulia rhomboides</i> (Ehr.) DeToni (Frrh)					
<i>Frustulia vulgaris</i> (Thwaites) DeT. (Frvu)		0.1 (0.1)			
<i>Gomphonema herculeana</i> (Ehr.) Cl. (Gohe)	1.6 (0.4)	1.7 (0.7)	0.3 (0.3)	1.3 (0.4)	0.2 (0.2)
<i>Gomphonema</i> sp. (Gosp)	0.9 (0.5)	0.7 (0.2)			
<i>Gomphonema accuminatum</i> Ehr. (Goac)			0.6 (0.1)		
<i>Gomphonema affine</i> Kütz. (Goaf)					
<i>Gomphonema angustum</i> Ag. (Goan)			5.9 (0.7)	1.4 (0.9)	0.7 (0.7)
<i>Gomphonema clavatum</i> Ehr. (Gocl)					

APPENDIX TABLE 1c. (Cont.)

TAXA	East Walker 10IX96	Dexter Canyon 3XI96	Clear Water 26VII96	Poore 31VII97	Slinkard 30VII97
<i>Gomphonema clevei</i> Fricke (Gocl)					
<i>Gomphonema gracile</i> Ehr. (Gogr)	0.4 (0.2)				
<i>Gomphonema minuta</i> (C. Ag.) C. Ag. (Gomi)					
<i>Gomphonema olivaceum</i> (Horn.) Bréb. (Gool)					
<i>Gomphonema parvulum</i> Kütz. (Gopa)		1.3 (0.4)	1.0 (0.5)	0.4 (0.1)	0.6 (0.3)
<i>Gomphonema truncatum</i> (Cl. Ag.) Cl. Ag. (Gotr)					
<i>Gomphonema ventricosum</i> Greg. (Gove)					
cf. <i>Grammatophora</i> (Gr)					
<i>Gyrosigma</i> sp. (Gysp)					
<i>Gyrosigma acummatum</i> (Kütz.) Rabh. (Gyac)			0.3 (0.2)		
<i>Hantzschia amphioxys</i> (Ehr.) Grun. (Haam)	0.5 (0.1)	0.4 (0.2)	0.9 (0.2)		0.9 (0.1)
<i>Hippodonta capitata</i> Ehr. (Naca)					
<i>Karayevia clevei</i> (Grun.) Round & Bukhtyarova (Kacl)					
<i>Luticola goeppertinana</i> (Bleisch) Mann (Lugo)					0.5 (0.5)
<i>Luticola mutica</i> (Kütz.) Mann (Lumu)			0.1 (0.1)		
<i>Mastogloia smithii</i> Thwaites (Masm)					
<i>Melosira varians</i> Ag. (Meva)	0.6 (0.1)	0.3 (0.3)	2.4 (1.0)	0.7 (0.6)	1.4 (1.0)
<i>Meridion circulare</i> (Grev.) Ag. (Meci)	0.1 (0.1)	0.3 (0.1)	0.5 (0.1)	0.4 (0.1)	0.9 (0.9)
<i>Meridion circulare</i> var. <i>constrictum</i> (Ralfs.) Van Heurck (Mecico)					
<i>Navicula</i> sp. (Nasp)					
<i>Navicula angusta</i> Grun. (Naan)					
<i>Navicula arenaria</i> Donk. (Naar)					
<i>Navicula arvensis</i> Hust. (Naarv)	0.2 (0.2)				
<i>Navicula bryophila</i> Boye Petersen (Nabr)					

APPENDIX TABLE 1c. (Cont.)

TAXA	East Walker 10IX96	Dexter Canyon 3XI96	Clear Water 26VII96	Poore 31VII97	Slinkard 30VII97
<i>Navicula capitatoradiata</i> Germain (Nacap)			5.2 (1.4)		
<i>Navicula cari</i> Ehr. (Nacai)			2.5 (0.1)	3.3 (0.1)	
<i>Navicula cincta</i> (Ehr.) Ralfs (Nacin)	0.6 (0.2)	5.3 (1.6)		1.6 (0.5)	1.6 (0.5)
<i>Navicula clematis</i> Grun (NacI)					
<i>Navicula cryptocephala</i> Kütz. (Nacr)	0.8 (0.2)	1.0 (0.4)		2.0 (0.6)	1.0 (0.6)
<i>Navicula cryptonella</i> Lange-Bertalot (Nacry)				1.4 (0.4)	
<i>Navicula cuspidata</i> Kütz. (Kütz.) (Nacu)					
<i>Navicula decussis</i> Østrup. (Nade)		1.5 (0.5)		0.6 (0.2)	
<i>Navicula dentata</i> Hust. (Naden)		0.3 (0.3)			
<i>Navicula elginensis</i> (Greg.) Ralfs.n (Nael)	0.7 (0.3)				
<i>Navicula erifuga</i> Lange-Bertalot (Naer)			0.9 (0.5)		
<i>Navicula expecta</i> Van Land. (Naex)	0.2 (0.2)				
<i>Navicula heufleriana</i> (Grun.) Grun. (Nahe)					
<i>Navicula incerta</i> Lange-Bertalot (Nain)					
<i>Navicula indifferens</i> Hust. (Naind)					
<i>Navicula lanceolata</i> (Ag.) Kütz. (Nala)		1.9 (0.4)			
<i>Navicula libonensis</i> Schoemann (Nali)					0.7 (0.7)
<i>Navicula minuscula</i> Grun. (Namu)					
<i>Navicula protracta</i> (Grun.) Cl. (Napr)	0.2 (0.2)		0.1 (0.1)		
<i>Navicula radiosa</i> Kütz. (Nara)		0.3 (0.2)	0.2 (0.1)		1.1 (0.2)
<i>Navicula reinhardtii</i> Grun. (Nare)					
<i>Navicula rhynchocephala</i> Kütz. (Narh)	0.6 (0.2)			0.2 (0.1)	0.2 (0.2)
<i>Navicula rotundra</i> Hust. (Naro)					
<i>Navicula schoenfeldii</i> Hust. (Nasc)					
<i>Navicula schroeterii</i> Meister (Nasch)					

APPENDIX TABLE 1c. (Cont.)

TAXA	East Walker 10IX96	Dexter Canyon 3XI96	Clear Water 26VII96	Poore 31VII97	Slinkard 30VII97
<i>Navicula subminiscula</i> (Grun.) Lange-Bertalot (Nasb)					
<i>Navicula subrhyncocephala</i> Hust. (Nasub)					
<i>Navicula subrotundata</i> Hust. (Nasubr)					
<i>Navicula tenelloides</i> Hust. (Nate)		3.3 (0.1)			
<i>Navicula tridentula</i> Krasske (Natri)					
<i>Navicula tripunctata</i> (O.F. Müll) Bory (Natr)	0.8 (0.1)			0.4 (0.1)	
<i>Navicula variostrata</i> Krasske (Nava)		0.8 (0.6)			
<i>Navicula veneta</i> Kütz. (Nave)		1.8 (0.6)	0.2 (0.2)	0.8 (0.4)	
<i>Navicula viridula</i> (Kütz.) Kütz. (Navi)	0.7 (0.3)				
<i>Nitzschia acicularis</i> W. Sm. (Niac)	2.6 (0.9)	0.3 (0.1)	0.1 (0.1)		
<i>Nitzschia amphibia</i> Grun. (Niam)		0.8 (0.1)	1.6 (0.4)		0.2 (0.2)
<i>Nitzschia compressa</i> (Bailey) Boyer (Nico)					
<i>Nitzschia dissipata</i> (Kütz.) Kütz. (Nidi)	3.2 (1.1)	7.6 (1.3)	4.0 (0.8)	2.5 (1.0)	2.6 (1.4)
<i>Nitzschia epithemoides</i> Grun. (Niep)					
<i>Nitzschia filiformis</i> (W. Sm.) Hust. (Nifi)	2.1 (1.5)	3.6 (1.0)			
<i>Nitzschia frustulum</i> Kütz. (Nifr)	3.2 (0.5)	3.5 (1.8)	6.5 (2.1)	2.9 (0.7)	6.0 (1.5)
<i>Nitzschia hybrida</i> Grun. (Nihy)					
<i>Nitzschia inconspicua</i> Grun. (Niin)					
<i>Nitzschia linearis</i> W. Sm. (Nili)		2.9 (0.6)	5.6 (0.6)	2.5 (0.1)	3.8 (1.4)
<i>Nitzschia palea</i> (Kütz.) W. Sm. (Nipa)	14.0 (3.3)	8.9 (3.1)	7.9 (1.3)	1.8 (0.8)	1.0 (0.1)
<i>Nitzschia sigma</i> (Kütz.) W. Sm. (Nisi)					
<i>Nitzschia sigmaidea</i> (Nitz.) W. Sm. (Nisig)					
<i>Nitzschia sinuata</i> var. <i>delognei</i> (Grun.) Lange-Bertalot (Niside)					
<i>Nitzschia umbonata</i> (Ehr.) Lange-Bertalot (Nium)					

APPENDIX TABLE 1c. (Cont.)

TAXA	East Walker 10IX96	Dexter Canyon 3XI96	Clear Water 26VII96	Poore 31VII97	Slinkard 30VII97
<i>Nitzschia vermicularis</i> (Kütz.) Hantz. (Nive)			0.7 (0.4)		
<i>Opephora olsenii</i> Moller (Opol)	0.8 (0.2)	0.3 (0.2)	0.3 (0.1)	0.2 (0.2)	0.3 (0.3)
<i>Pinnularia</i> sp. (Pisp)	0.4 (0.1)		0.1 (0.1)	0.2 (0.2)	0.3 (0.3)
<i>Pinnularia borealis</i> Ehr. (Pibo)	0.2 (0.2)	0.1 (0.1)			
<i>Pinnularia brevicostata</i> Cl. (Pibr)					
<i>Pinnularia divergens</i> W. Sm. (Pidi)			0.2 (0.1)		
<i>Pinnularia lagerstedtii</i> (Cl.) Cl.- Euler (Pila)					
<i>Pinnularia maior</i> (Kütz.) Rabh. (Pima)		0.1 (0.1)			
<i>Pinnularia obscura</i> Krasske (Piob)					
<i>Pinnularia stromatophora</i> (Grun.) Cl. (Pist)					
<i>Pinnularia subcapitata</i> Greg. (Pisu)	0.3 (0.3)				
<i>Pinnularia viridis</i> (Nitz.) Ehr. (Pivi)					
<i>Planothidium delicatula</i> (Kütz.) Round & Bukhtiyarova (Plde)					
<i>Planothidium lanceolata</i> (Breb.) Round & Bukhtiyarova (Plla)	6.4 (1.3)	9.9 (1.7)	3.7 (0.6)	8.0 (1.8)	8.4 (4.6)
<i>Planothidium lanceolata</i> var. <i>dubia</i> (Grun.) Lange-Bertalot (Plladu)			0.1 (0.1)		
<i>Reimeria sinuata</i> (Greg.) Kociolek & Stoermer (Resi)	2.4 (1.1)	1.3 (0.2)	0.4 (0.1)	3.1 (0.8)	1.1 (0.6)
<i>Rhopalodia gibba</i> (Ehr.) O. Müll. (Rhgi)		0.1 (0.1)	1.1 (0.6)		
<i>Rhopalodia gibberula</i> (Ehr.) O. Müll. (Rhgib)	0.3 (0.2)	0.3 (0.1)	2.1 (1.2)	0.4 (0.3)	0.3 (0.3)
<i>Rhoicosphenia abbreviata</i> (Ag.) Lange-Bertalort (Rhab)	1.0 (0.1)	1.0 (0.2)	11.2 (3.8)	0.8 (0.1)	0.7 (0.3)
<i>Sellophora pupula</i> (Kütz.) Mereschkowsky (Sepu)	0.5 (0.1)		0.1 (0.1)		
<i>Sellophora pupula</i> var. <i>psuedopupula</i> (Krasske) Mereschkowsky (Sepups)					

APPENDIX TABLE 1c. (Cont.)

TAXA	East Walker 10IX96	Dexter Canyon 3XI96	Clear Water 26VII96	Poore 31VII97	Slinkard 30VII97
<i>Sellaphora pygmaea</i> (Kütz.) Mereschkowsky (Sepy)					
<i>Sellaphora seminulum</i> (Grun.) Mann (Sese)					
<i>Stauroneis anceps</i> Ehr. (Stan)					
<i>Stauroneis kriegei</i> Patrick (Stkr)					
<i>Stauroneis phoenicenteron</i> (Nitz.) Ehr. (Stph)					
<i>Stauroneis smithii</i> Grun. (Stsm)					
<i>Staurosira construens</i> (Ehr.) Hust. (Frc)	3.8 (1.3)	2.8 (0.6)	8.1 (1.7)		8.9 (1.1)
<i>Staurosira construens</i> f. <i>binodis</i> (Ehr.) Hust. (Frcobi)					
<i>Staurosira construens</i> var. <i>venter</i> (Ehr.) Hust. (Frve)					
<i>Staurosirella pinnata</i> (Ehr.) Williams & Round (Stpi)	3.9 (1.5)	2.5 (1.1)	1.4 (0.4)	1.6 (0.9)	3.8 (0.4)
<i>Stephanodiscus hantzschii</i> Grun. (in Cl. & Grun.) (Stha)					
<i>Stephanodiscus niagare</i> Ehr. (Stni)				0.2 (0.1)	
<i>Surirella angustata</i> Kütz. (Syan)	0.1 (0.1)		0.1 (0.1)		
<i>Surirella brebissonii</i> Kramm & Lange-Bertalot (Subr)			0.7 (0.2)		
<i>Surirella ovalis</i> Breb. (Suov)			0.2 (0.2)	0.1 (0.1)	
<i>Surirella striatula</i> Turp. (Sust)					
<i>Surirella tenera</i> Greg. (Sute)					
<i>Tabellaria flocculosa</i> (Roth) Grun. (Taf)					
<i>Tetracyclus rupestris</i> (Braun.) Grun. (Teru)		0.1 (0.1)			

APPENDIX TABLE 1d. Relative % (\pm SE) frequency of diatoms and collection dates for selected streams in the Lahontan Basin, USA. Species acronyms are in parentheses.

TAXA	Virginia 11VII97	Glass 23VII97	Dyndenber 18VII97	Arastra 16VII98	Hilton 17Jul98
<i>Achnanthes exigua</i> Grun. (Acex)		0.1 (0.1)	0.3 (0.3)		
<i>Achnanthes hungarica</i> Grun. (Achu)					
<i>Achnanthes laterostrata</i> Hust. (Acla)					
<i>Achnanthes linearis</i> (W. Sm.) Grun. (Acli)					
<i>Achnantheidium minutissima</i> (Kütz.) Czar. (Acmi)	28.9 (5.2)	16.4 (5.2)	29.9 (2.3)	1.3 (0.2)	32.6 (4.3)
<i>Amphipleura pellucida</i> (Kütz.) Kütz. (Ampel)					
<i>Amphora coffeaeformis</i> (Ag.) Kütz. (Amco)	0.1 (0.1)			0.1 (0.1)	0.7 (0.4)
<i>Amphora ovalis</i> (Kütz.) Kütz. (Amov)					
<i>Amphora pediculus</i> (Kütz.) Grun. (Ampe)			3.9 (0.2)	0.9 (0.2)	
<i>Amphora veneta</i> Kütz. (Amve)					
<i>Anomoeoneis sphaerophora</i> f. <i>costata</i> (Kütz.) Schmid. (Anspco)					
<i>Anomoeoneis vitrea</i> (Grun.) Grun. (Anvi)					
<i>Asterionella formosa</i> Hass. (Asfo)	0.4 (0.3)	0.1 (0.1)			
<i>Aulacoseira ambigua</i> (Grun.) Simon. (Auam)		0.4 (0.4)			0.3 (0.3)
<i>Aulacoseira islandica</i> O. Muell. (Auis)	1.9 (1.0)				
<i>Aulacoseira italica</i> (Ehr.) Simon. (Auit)	1.4 (0.7)				
<i>Caloneis amphibaena</i> (Bory) Cl. (Caam)					
<i>Caloneis bacillum</i> (Grun.) Cl. (Caba)					
<i>Caloneis molaris</i> (Grun.) Krammer (Camo)					
<i>Caloneis schumanniana</i> (Grun.) Cl. (Case)					
<i>Caloneis silicula</i> (Ehr.) Cl. (Casi)	0.4 (0.2)		0.6 (0.6)		
<i>Caloneis sublinearis</i> (Grun.) Kramme (Casu)			0.6 (0.3)	0.2 (0.2)	
<i>Caloneis tenuis</i> (Greg.) Krammer (Cate)					
<i>Cocconeis pediculus</i> Kütz. (Cope)					

APPENDIX TABLE 1d. (Cont.)

TAXA	Virginia 11VII97	Glass 23VII97	Dyndenber 18VII97	Arastra 16VII98	Hilton 17Jul98
<i>Cocconeis placentula</i> Ehr. (Copl)					
<i>Cocconeis placentula</i> var. <i>euglypta</i> (Ehr.) Cl. (Cople)					
<i>Cocconeis placentula</i> var. <i>lineata</i> (Ehr.) V.H. (Coplli)					
<i>Cocconeis placentula</i> var. <i>pseudolineata</i> Geitler (Coplps)				2.3 (0.7)	
<i>Ctenophora pulchella</i> (Ralfs) Williams & Round (Ctpu)					
<i>Cyclotella</i> sp. (Csp)	0.5 (0.3)				
<i>Cyclotella bodanica</i> Grun. (Cybo)					
<i>Cyclotella meneghiniana</i> Kütz. (Cyme)					
<i>Cyclotella stelligera</i> Cl. & Grun. (Cyst)		0.1 (0.1)		0.1 (0.1)	1.2 (0.4)
<i>Cyclostephanos novaezeelandiae</i> (Cl.) Round (Cyno)					
<i>Cymatopleura solea</i> (Bréb) W. Sm. (Cyso)					
<i>Cymbella</i> sp. (Cysp)					
<i>Cymbella affinis</i> Kütz. (Cyaf)	1.4 (0.3)	1.4 (1.0)	0.6 (0.3)		2.2 (1.1)
<i>Cymbella aspera</i> (Ehr.) Cl (Cyas)	0.1 (0.1)	0.4 (0.4)			
<i>Cymbella amphicephala</i> Naeg. ex Kütz. (Cyam)					0.1 (0.1)
<i>Cymbella cistula</i> (Ehr.) Kirch. (Cyci)					
<i>Cymbella gracilis</i> (Ehr.) Kütz. (Cygr)					
<i>Cymbella latens</i> Krasske (Cyla)					
<i>Cymbella mexicana</i> (Ehr.) Cl. (Cymex)					
<i>Cymbella minuta</i> Hilse ex. Rabh. (Cymi)					0.2 (0.2)
<i>Cymbella naviculiformis</i> (Auers.) Cl. (Cyna)					
<i>Cymbella prostrata</i> (Berk.) Cl. (Cypr)					
<i>Cymbella proxima</i> Reimer (Cypro)					
<i>Cymbella silesiaca</i> Bleisch in Rabh. (Cysi)	0.4 (0.2)		4.0 (1.2)	0.2 (0.2)	0.4 (0.4)
<i>Cymbella tumida</i> (Breb.) Van Heurck (Cytu)					
<i>Cymbellonitzschia diluviana</i> Hust. (Cydi)				0.2 (0.2)	

APPENDIX TABLE 1d. (Cont.)

TAXA	Virginia 11VII97	Glass 23VII97	Dyndenber 18VII97	Arastra 16VII98	Hilton 17Jul98
<i>Denticula elegans</i> Kütz. (Deel)			0.6 (0.6)		0.7 (0.4)
<i>Diatoma</i> sp. (Disp)					0.2 (0.2)
<i>Diatoma hyemalis</i> (Roth) Heiberg (Duhy)			0.6 (0.3)	0.1 (0.1)	
<i>Diatoma mesodon</i> (Ehr.) Kütz. (Dime)	1.4 (0.5)	1.8 (0.4)	0.3 (0.3)	0.7 (0.1)	
<i>Diatoma tenuis</i> Ag. (Dite)					
<i>Diatoma vulgaris</i> Bory (Divu)					
<i>Diploneis</i> sp. (Dipsp)					
<i>Diploneis elliptica</i> (Kütz.) Cl. (Diel)					
<i>Diploneis oblongella</i> (Naeg. ex. Kütz) Ross (Diob)					
<i>Encyonopsis microcephala</i> (Grun.) Krammer (Enmi)					0.1 (0.1)
<i>Eolimna minima</i> (Kütz.) Lange-Bertalot (Eimi)				1.0 (0.6)	1.1 (0.1)
<i>Epithemia</i> sp. (Epsp)	0.1 (0.1)				
<i>Epithemia adnata</i> (Kütz.) Bréb. (Epad)				0.1 (0.1)	
<i>Epithemia argus</i> (Ehr.) Kütz. (Epar)					
<i>Epithemia sorex</i> Kütz. (Eps)				0.6 (0.6)	0.7 (0.4)
<i>Epithemia turgida</i> (Ehr.) Kütz. (Eptu)		0.5 (0.4)	0.3 (0.3)	0.5 (0.3)	
<i>Eunotia</i> sp. (Eusp)					
<i>Eunotia bilunaris</i> (Ehr.) Mills. (Eubi)	1.4 (0.3)	0.1 (0.1)		0.2 (0.2)	1.7 (0.3)
<i>Fallacia pygmaea</i> (Kütz.) Stickle & Mann (Fapy)					
<i>Fragilaria arcus</i> (Ehr.) Cl. (Frar)	2.5 (0.6)			0.1 (0.1)	2.7 (1.3)
<i>Fragilaria brevistriata</i> (Grun.) Williams & Round (Frbr)	0.1 (0.1)				
<i>Fragilaria capucina</i> Desm. (Frca)	11.9 (2.7)	4.8 (1.9)	3.2 (0.7)	8.1 (0.5)	6.1 (3.1)
<i>Fragilaria capucina</i> var. <i>capitellata</i> (Grun.) Lange-Bertalot (Frcaca)					
<i>Fragilaria capucina</i> var. <i>gracilis</i> (Oestrup) Hust. (Frcag)					2.2 (0.1)

APPENDIX TABLE 1d. (Cont.)

TAXA	Virginia 11VII97	Glass 23VII97	Dyndenber 18VII97	Arastra 16VII98	Hilton 17Jul98
<i>Fragilaria capucina</i> var. <i>rumpens</i> (Kütz) Lange-Bertalot (Frcaru)					
<i>Fragilaria capucina</i> var. <i>vaucheriae</i> (Kütz) Lange-Bertalot (Frcava)	4.9 (1.1)	2.8 (1.5)	2.6 (0.9)	20.9 (2.2)	9.0 (0.8)
<i>Fragilaria crotonensis</i> Kitt. (Frcr)					
<i>Fragilaria leptostauron</i> (Ehr.) Hust. (Frle)			0.9 (0.3)		1.7 (0.8)
<i>Fragilaria parasitica</i> (W. Sm.) Grun. (Frpa)					
<i>Fragilaria parasitica</i> var. <i>subconstricta</i> Grun. (Frsu)					
<i>Fragilaria robusta</i> (Ralfs.) Lange-Bertalot (Frro)					
<i>Fragilaria tenera</i> (W. Sm.) Lange-Bertalot (Frte)	2.4 (1.2)				
<i>Fragilaria ulna</i> (Nitzs.) Lange-Bertalot (Frul)	18.9 (3.9)	1.9 (0.5)	1.7 (0.5)	0.7 (0.2)	3.2 (1.0)
<i>Fragilaria ulna</i> var. <i>acus</i> (Kütz.) Lange-Bertalot (Frar)					
<i>Fragilariforma virescens</i> (Ralfs) Williams & Round (Frvi)					
<i>Frustulia rhomboides</i> (Ehr.) DeToni (Frrh)					
<i>Frustulia vulgaris</i> (Thwaites) DeT. (Frvu)			0.6 (0.3)	0.4 (0.2)	0.1 (0.1)
<i>Gomphoneis herculeana</i> (Ehr.) Cl. (Gohe)		2.1 (1.3)	0.6 (0.3)	0.1 (0.1)	0.5 (0.3)
<i>Gomphonema</i> sp. (Gosp)	0.3 (0.2)	0.7 (0.7)			
<i>Gomphonema accuminatum</i> Ehr. (Goac)					
<i>Gomphonema affine</i> Kütz. (Goaf)					
<i>Gomphonema angustum</i> Ag. (Goan)		0.6 (0.52)	0.6 (0.6)	0.5 (0.5)	0.1 (0.1)
<i>Gomphonema clavatum</i> Ehr. (Gocl)				0.7 (0.4)	0.4 (0.3)

APPENDIX TABLE 1d (Cont.)

TAXA	Virginia 11VII97	Glass 23VII97	Dyndenberg 18VII97	Arastra 16VII98	Hilton 17Jul98
<i>Gomphonema clevei</i> Fricke (Gocl)					
<i>Gomphonema gracile</i> Ehr. (Gogr)					
<i>Gomphonema minuta</i> (C. Ag.) C. Ag. (Gomi)					
<i>Gomphonema olivaceum</i> (Horn.) Bréb. (Gool)					
<i>Gomphonema parvulum</i> Kütz. (Gopa)	0.5 (0.5)	2.9 (1.4)	0.6 (0.6)	0.4 (0.2)	1.7 (0.8)
<i>Gomphonema truncatum</i> (Cl. Ag.) Cl. Ag. (Gotr)					
<i>Gomphonema ventricosum</i> Greg. (Gove)					
cf. <i>Grammatophora</i> (Gr)					
<i>Gyrosigma</i> sp. (Gysp)					
<i>Gyrosigma acummatum</i> (Kütz.) Rabh. (Gyac)					
<i>Hantzschia amphioxys</i> (Ehr.) Grun. (Haam)		0.4 (0.4)	0.3 (0.3)	0.4 (0.2)	0.1 (0.1)
<i>Hippodonta capitata</i> Ehr. (Naca)					
<i>Karayevia clevei</i> (Grun.) Round & Bukhtyarova (Kacl)					
<i>Luticola mutica</i> (Kütz.) Mann (Lumu)	0.1 (0.1)			0.4 (0.2)	
<i>Mastogloia smithii</i> Thwaites (Masm)					
<i>Melosira varians</i> Ag. (Meva)		0.2 (0.2)	0.3 (0.3)		0.4 (0.4)
<i>Meridion circulare</i> (Grev.) Ag. (Meci)	0.7 (0.1)		0.3 (0.3)	1.1 (0.3)	0.7 (0.4)
<i>Meridion circulare</i> var. <i>constrictum</i> (Ralfs.) Van Heurck (Mecico)					
<i>Navicula</i> sp. (Nasp)			0.6 (0.3)		
<i>Navicula angusta</i> Grun. (Naan)					
<i>Navicula arenaria</i> Donk. (Naar)					
<i>Navicula arvensis</i> Hust. (Naarv)	0.1 (0.1)				
<i>Navicula bryophila</i> Boye Petersen (Nabr)					
<i>Navicula capitatoradiata</i> Germain (Nacap)					

APPENDIX TABLE 1d. (Cont.)

TAXA	Virginia 11VII97	Glass 23VII97	Dyndenber 18VII97	Arastra 16VII98	Hilton 17Jul98
<i>Navicula cari</i> Ehr. (Nacai)					
<i>Navicula cincta</i> (Ehr.) Ralfs (Nacin)		0.9 (0.3)	4.1 (1.3)	2.5 (0.6)	0.4 (0.4)
<i>Navicula clematis</i> Grun (Nacl)				0.3 (0.3)	
<i>Navicula cryptocephala</i> Kütz. (Nacr)	0.4 (0.2)	0.2 (0.2)	0.9 (0.1)		1.4 (0.4)
<i>Navicula cryptonella</i> Lange-Bertalot (Nacry)					
<i>Navicula cuspidata</i> Kütz. (Kütz.) (Nacu)					
<i>Navicula decussis</i> Østrup. (Nade)					0.4 (0.4)
<i>Navicula dentata</i> Hust. (Naden)					
<i>Navicula elginensis</i> (Greg.) Ralfs.n (Nael)	0.1 (0.1)				
<i>Navicula erifuga</i> Lange-Bertalot (Naer)					
<i>Navicula expecta</i> Van Land. (Naex)					
<i>Navicula heufleriana</i> (Grun.) Grun. (Nahe)					
<i>Navicula incerta</i> Lange-Bertalot (Nain)					
<i>Navicula indifferens</i> Hust. (Naind)					
<i>Navicula lanceolata</i> (Ag.) Kütz. (Nala)			0.4 (0.2)		
<i>Navicula libonensis</i> Schoemann (Nali)					
<i>Navicula minuscula</i> Grun. (Namu)			0.9 (0.3)	1.7 (0.2)	
<i>Navicula protracta</i> (Grun.) Cl. (Napr)					
<i>Navicula radiosa</i> Kütz. (Nara)					
<i>Navicula reinhardtii</i> Grun. (Nare)					
<i>Navicula rhynchocephala</i> Kütz. (Narh)					
<i>Navicula rotundra</i> Hust. (Naro)					
<i>Navicula schoenfeldii</i> Hust. (Nasc)			0.9 (0.9)	0.3 (0.3)	
<i>Navicula schroeterii</i> Meister (Nasch)			0.3 (0.3)		

APPENDIX TABLE 1 d. (Cont.)

TAXA	Virginia 11VII97	Glass 23VII97	Dyndenber 18VII97	Arastra 16VII98	Hilton 17Jul98
<i>Navicula subminiscula</i> (Grun.) Lange-Bertalot (Nasb)					
<i>Navicula subrhyncocephala</i> Hust. (Nasub)			0.3 (0.3)		
<i>Navicula subrotundata</i> Hust. (Nasubr)					
<i>Navicula tenelloides</i> Hust. (Nate)					
<i>Navicula tridentula</i> Krasske (Natri)		0.4 (0.2)			0.8 (0.8)
<i>Navicula tripunctata</i> (O.F. Müll) Bory (Natr)	0.2 (0.2)				
<i>Navicula variostrata</i> Krasske (Nava)		0.1 (0.1)			
<i>Navicula veneta</i> Kütz. (Nave)	0.3 (0.2)	0.8 (0.8)	0.6 (0.6)	0.7 (0.5)	0.5 (0.4)
<i>Navicula viridula</i> (Kütz.) Kütz. (Navi)		1.5 (1.0)			
<i>Nitzschia acicularis</i> W. Sm. (Niac)					
<i>Nitzschia amphibia</i> Grun. (Niam)		0.4 (0.4)		0.7 (0.4)	0.1 (0.1)
<i>Nitzschia compressa</i> (Bailey) Boyer (Nico)					
<i>Nitzschia dissipata</i> (Kütz.) Kütz. (Nidi)	0.4 (0.3)	4.1 (1.3)	2.3 (0.6)	8.3 (2.9)	0.9 (0.2)
<i>Nitzschia epithemoides</i> Grun. (Niep)					
<i>Nitzschia filiformis</i> (W. Sm.) Hust. (Nifi)					
<i>Nitzschia frustulum</i> Kütz. (Nifr)	0.1 (0.1)	11.6 (3.5)	6.7 (0.5)	11.6 (2.4)	1.3 (0.4)
<i>Nitzschia hybrida</i> Grun. (Nihy)					
<i>Nitzschia inconspicua</i> Grun. (Niin)					
<i>Nitzschia linearis</i> W. Sm. (Nili)		1.6 (0.9)	0.3 (0.3)	2.4 (0.3)	1.6 (0.5)
<i>Nitzschia palea</i> (Kütz.) W. Sm. (Nipa)	0.6 (0.1)	1.7 (0.7)	0.3 (0.3)	1.1 (0.4)	1.2 (0.5)
<i>Nitzschia sigma</i> (Kütz.) W. Sm. (Nisi)		0.4 (0.3)			0.5 (0.3)
<i>Nitzschia sigmoidea</i> (Nitz.) W. Sm. (Nisig)					
<i>Nitzschia sinuata</i> var. <i>delognei</i> (Grun.) Lange-Bertalot (Niside)					
<i>Nitzschia umbonata</i> (Ehr.) Lange-Bertalot (Nium)					

APPENDIX TABLE 1d. (Cont.)

TAXA	Virginia 11VII97	Glass 23VII97	Dyndenber 18VII97	Arastra 16VII98	Hilton 17Jul98
<i>Nitzschia vermicularis</i> (Kütz.) Hantz. (Nive)					
<i>Opephora olsenii</i> Moller (Opol)	0.2 (0.1)			0.7 (0.1)	0.1 (0.1)
<i>Pinnularia</i> sp. (Pisp)	0.2 (0.2)	0.8 (0.4)			0.4 (0.4)
<i>Pinnularia borealis</i> Ehr. (Pibo)					0.1 (0.1)
<i>Pinnularia brevicostata</i> Cl. (Pibr)					
<i>Pinnularia divergens</i> W. Sm. (Pidi)	0.7 (0.4)			0.4 (0.2)	0.1 (0.1)
<i>Pinnularia lagerstedtii</i> (Cl.) Cl.- Euler (Pila)					
<i>Pinnularia maior</i> (Kütz.) Rabh. (Pima)					
<i>Pinnularia obscura</i> Krasske (Piob)					
<i>Pinnularia stromatophora</i> (Grun.) Cl. (Pist)					
<i>Pinnularia subcapitata</i> Greg. (Pisu)	0.3 (0.2)	0.2 (0.2)	0.3 (0.3)		0.5 (0.3)
<i>Pinnularia viridis</i> (Nitz.) Ehr. (Pivi)					
<i>Planothidium delicatula</i> (Kütz.) Round & Bukhtiyarova (Plde)					
<i>Planothidium lanceolata</i> (Breb.) Round & Bukhtiyarova (Plla)	2.6 (1.4)	8.5 (0.4)	13.1 (1.9)	8.1 (2.1)	1.8 (0.4)
<i>Planothidium lanceolata</i> var. <i>dubia</i> (Grun.) Lange-Bertalot (Plladu)					
<i>Reimeria sinuata</i> (Greg.) Kociolek & Stoermer (Resi)	0.4 (0.3)	1.5 (0.9)	1.8 (0.5)	0.4 (0.1)	0.5 (0.4)
<i>Rhopalodia gibba</i> (Ehr.) O. Müll. (Rhgi)				0.2 (0.2)	
<i>Rhopalodia gibberula</i> (Ehr.) O. Müll. (Rhgi)		0.2 (0.1)		0.3 (0.3)	0.5 (0.3)
<i>Rhoicosphenia abbreviata</i> (Ag.) Lange-Bertalort (Rhab)	0.5 (0.4)	10.7 (2.3)	1.1 (0.3)	3.7 (1.3)	0.7 (0.7)
<i>Sellophora pupula</i> (Kütz.) Mereschkowsky (Sepu)			0.6 (0.6)		0.1 (0.2)
<i>Sellophora pupula</i> var. <i>psuedopupula</i> (Krasske) Mereschkowsky (Sepups)					

APPENDIX TABLE 1d. (Cont.)

TAXA	Virginia 11VII97	Glass 23VII97	Dyndenber 18VII97	Arastra 16VII98	Hilton 17Jul98
<i>Sellaphora pygmaea</i> (Kütz.) Mereschkowsky (Sepy)					
<i>Sellaphora seminulum</i> (Grun.) Mann (Sese)					
<i>Stauroneis anceps</i> Ehr. (Stan)					
<i>Stauroneis kriegerii</i> Patrick (Stkr)					
<i>Stauroneis phoenicenteron</i> (Nitz.) Ehr. (Stph)					
<i>Stauroneis smithii</i> Grun. (Stsm)					
<i>Staurosira construens</i> (Ehr.) Hust. (Frc)	0.2 (0.2)	0.9 (0.9)	2.6 (0.5)	0.6 (0.6)	0.8 (0.8)
<i>Staurosira construens</i> f. <i>binodis</i> (Ehr.) Hust. (Frcobi)					
<i>Staurosira construens</i> var. <i>venter</i> (Ehr.) Hust. (Frve)					
<i>Staurosirella pinnata</i> (Ehr.) Williams & Round (Stpi)	1.1 (0.4)	3.2 (0.4)	1.5 (0.3)	3.8 (0.6)	1.6 (0.3)
<i>Stephanodiscus hantzschii</i> Grun. (in Cl. & Grun.) (Stha)					
<i>Stephanodiscus niagare</i> Ehr. (Stni)					
<i>Surirella angustata</i> Kütz. (Syan)					
<i>Surirella brebissonii</i> Kramm & Lange-Bertalot (Subr)					
<i>Surirella ovalis</i> Breb. (Suov)				0.7 (0.5)	
<i>Surirella striatula</i> Turp. (Sust)				0.3 (0.3)	
<i>Surirella tenera</i> Greg. (Sute)					
<i>Tabellaria flocculosa</i> (Roth) Grun.(Tafe)	2.6 (1.2)				2.3 (1.2)
<i>Tetracyclus rupestris</i> (Braun.) Grun. (Teru)	0.9 (0.2)		0.9 (0.9)		0.2 (0.2)

APPENDIX TABLE 1e. Relative % (\pm SE) frequency of diatoms and collection dates for selected streams in the Lahontan Basin, USA. Species acronyms are in parentheses.

TAXA	Marble 7 VII97	Mammoth Spring 18VIII97	Burcham 25VIII97	Nye 15VII98	Bodie 16VII98
<i>Achnanthes exigua</i> Grun. (Acex)	0.2 (0.2)		0.3 (0.1)	1.7 (0.2)	
<i>Achnanthes hungarica</i> Grun. (Achu)				0.6 (0.4)	
<i>Achnanthes laterostrata</i> Hust. (Acla)					
<i>Achnanthes linearis</i> (W. Sm.) Grun. (Acli)					
<i>Achnantheidium minutissima</i> (Kütz.) Czar. (Acmi)	18.1 (2.6)	3.0 (0.3)	3.9 (0.4)	3.2 (0.6)	1.2 (0.1)
<i>Amphipleura pellucida</i> (Kütz.) Kütz. (Ampel)					
<i>Amphora coffeaeformis</i> (Ag.) Kütz. (Amco)	0.2 (0.2)	0.2 (0.2)	0.5 (0.3)	0.1 (0.1)	
<i>Amphora ovalis</i> (Kütz.) Kütz. (Amov)				1.1 (0.1)	0.2 (0.2)
<i>Amphora pediculus</i> (Kütz.) Grun. (Ampe)	7.3 (1.7)	0.2 (0.2)		6.5 (1.9)	
<i>Amphora veneta</i> Kütz. (Amve)					
<i>Anomoeoneis sphaerophora</i> f. <i>costata</i> Kütz.) Schmid. (Anspco)					
<i>Anomoeoneis vitrea</i> (Grun.) Grun. (Anvi)					
<i>Asterionella formosa</i> Hass. (Asfo)					
<i>Aulacoseira ambigua</i> (Grun.) Simon. (Auam)					
<i>Aulacoseira islandica</i> O. Muell. (Auis)					
<i>Aulacoseira italica</i> (Ehr.) Simon. (Auit)		0.8 (0.4)			
<i>Caloneis amphibaena</i> (Bory) Cl. (Caam)					
<i>Caloneis bacillum</i> (Grun.) Cl. (Caba)			0.3 (0.3)		
<i>Caloneis molaris</i> (Grun.) Krammer (Camo)					
<i>Caloneis schumanniana</i> (Grun.) Cl. (Case)					
<i>Caloneis silicula</i> (Ehr.) Cl. (Casi)		0.2 (0.2)		0.9 (0.9)	0.9 (0.3)
<i>Caloneis tenuis</i> (Greg.) Krammer (Cate)					
<i>Caloneis sublinearis</i> (Grun.) Kramme (Casu)	0.6 (0.6)	0.3 (0.0)	0.2 (0.2)	0.5 (0.1)	
<i>Cocconeis pediculus</i> Kütz. (Cope)					

APPENDIX TABLE 1e. (Cont.)

TAXA	Marble 7 VII97	Mammoth Spring 18VIII97	Burcham 25VIII97	Nye 15VII98	Bodie 16VII98
<i>Cocconeis placentula</i> Ehr. (Copl)					
<i>Cocconeis placentula</i> var. <i>euglypta</i> (Ehr.) Cl. (Cople)	41.9 (3.6)	1.6 (0.2)	7.4 (2.2)	12.3 (2.4)	2.2 (0.2)
<i>Cocconeis placentula</i> var. <i>lineata</i> (Ehr.) V.H. (Coplli)					
<i>Cocconeis placentula</i> var. <i>pseudolineata</i> Geitler (Coplps)					
<i>Ctenophora pulchella</i> (Ralfs) Williams & Round (Ctpu)					
<i>Cyclotella</i> sp. (Csp)					
<i>Cyclotella bodanica</i> Grun. (Cybo)					
<i>Cyclotella meneghiniana</i> Kütz. (Cyme)					3.1 (1.0)
<i>Cyclotella stelligera</i> Cl. & Grun. (Cyst)					
<i>Cyclostephanos novaezeelandiae</i> (Cl.) Round (Cyno)					
<i>Cymatopleura solea</i> (Bréb) W. Sm. (Cyso)					
<i>Cymbella</i> sp. (Cysp)		0.1 (0.1)			
<i>Cymbella affinis</i> Kütz. (Cyaf)	0.8 (0.2)	2.0 (0.8)		0.2 (0.2)	0.3 (0.2)
<i>Cymbella aspera</i> (Ehr.) Cl. (Cyas)					
<i>Cymbella amphicephala</i> Naeg. ex. Kütz. (Cyam)				0.1 (0.1)	
<i>Cymbella cistula</i> (Ehr.) Kirch. (Cyci)		0.5 (0.2)			
<i>Cymbella gracilis</i> (Ehr.) Kütz. (Cygr)					
<i>Cymbella latens</i> Krasske (Cyla)					
<i>Cymbella mexicana</i> (Ehr.) Cl. (Cymex)					
<i>Cymbella minuta</i> Hilse ex. Rabh. (Cymi)		0.3 (0.2)	0.8 (0.2)		
<i>Cymbella naviculiformis</i> (Auers.) Cl. (Cyna)					
<i>Cymbella prostrata</i> (Berk.) Cl. (Cypr)					
<i>Cymbella proxima</i> Reimer (Cypro)					
<i>Cymbella silesiaca</i> Bleisch in Rabh. (Cysi)			0.8 (0.5)		
<i>Cymbella tumida</i> (Breb.) Van Heurck (Cytu)					
<i>Cymbellonitzschia diluviana</i> Hust. (Cydi)					

APPENDIX TABLE 1e. (Cont.)

TAXA	Marble 7 VII97	Mammoth Spring 18VIII97	Burcham 25VIII97	Nye 15VII98	Bodie 16VII98
<i>Denticula elegans</i> Kütz. (Deel)			1.9 (0.7)	0.2 (0.2)	0.4 (0.1)
<i>Diatoma</i> sp. (Disp)					
<i>Diatoma hyemalis</i> (Roth) Heiberg (Duhy)					
<i>Diatoma mesodon</i> (Ehr.) Kütz. (Dime)					
<i>Diatoma tenuis</i> Ag. (Dite)					
<i>Diatoma vulgaris</i> Bory (Divu)	2.1 (0.6)	2.0 (0.9)			
<i>Diploneis</i> sp. (Dipsp)					
<i>Diploneis elliptica</i> (Kütz.) Cl. (Diel)	0.2 (0.2)		0.3 (0.3)	0.7 (0.2)	0.1 (0.1)
<i>Diploneis oblongella</i> (Naeg. ex. Kütz) Ross (Diob)					
<i>Encyonopsis microcephala</i> (Grun.) Krammer (Enmi)		0.1 (0.1)			
<i>Eolimna minima</i> (Kütz.) Lange-Bertalot (Eimi)		0.4 (0.1)			1.7 (0.6)
<i>Epithemia</i> sp. (Epsp)					
<i>Epithemia adnata</i> (Kütz.) Bréb. (Epad)					
<i>Epithemia argus</i> (Ehr.) Kütz. (Epar)				0.1 (0.1)	
<i>Epithemia sorex</i> Kütz. (Epsa)		3.5 (0.8)		0.4 (0.1)	1.9 (0.8)
<i>Epithemia turgida</i> (Ehr.) Kütz. (Eptu)	0.2 (0.2)	13.0 (1.9)		0.8 (0.2)	0.6 (0.2)
<i>Eunotia</i> sp. (Eusp)					
<i>Eunotia bilunaris</i> (Ehr.) Mills. (Eubi)		0.1 (0.1)			
<i>Fallacia pygmaea</i> (Kütz.) Stickle & Mann (Fapy)					
<i>Fragilaria arcus</i> (Ehr.) Cl. (Frar)		0.1 (0.1)			
<i>Fragilaria brevistriata</i> (Grun.) Williams & Round (Frbr)		0.4 (0.1)		0.6 (0.4)	0.5 (0.4)
<i>Fragilaria capucina</i> Desm. (Frca)	1.7 (0.6)	2.8 (0.7)	5.1 (1.5)	1.7 (0.8)	3.7 (0.6)
<i>Fragilaria capucina</i> var. <i>capitellata</i> (Grun. Lange-Bertalot (Frcaca)		5.0 (1.7)			
<i>Fragilaria capucina</i> var. <i>gracilis</i> (Oestrup) Hust. (Frcag)	1.2 (0.4)	0.2 (0.2)		0.4 (0.1)	0.4 (0.2)

APPENDIX TABLE 1e. (Cont.)

TAXA	Marble 7 VII97	Mammoth Spring 18VIII97	Burcham 25VIII97	Nye 15VII98	Bodie 16VII98
<i>Fragilaria capucina</i> var. <i>rumpens</i> (Kütz) Lange-Bertalot (Frcaru)					
<i>Fragilaria capucina</i> var. <i>vaucheriae</i> (Kütz) Lange-Bertalot (Frcava)	0.9 (0.5)	1.4 (0.4)	3.5 (1.1)	0.5 (0.1)	4.8 (0.6)
<i>Fragilaria crotonensis</i> Kitt. (Frcr)					
<i>Fragilaria leptostauron</i> (Ehr.) Hust. (Frle)			1.7 (0.4)	0.7 (0.3)	
<i>Fragilaria parasitica</i> (W. Sm.) Grun. (Frpa)					
<i>Fragilaria parasitica</i> var. <i>subconstricta</i> Grun. (Frsu)					
<i>Fragilaria robusta</i> (Ralfs.) Lange-Bertalot (Frro)					
<i>Fragilaria tenera</i> (W. Sm.) Lange-Bertalot (Frte)					
<i>Fragilaria ulna</i> (Nitzs.) Lange-Bertalot (Frul)	0.8 (0.2)	2.6 (0.2)	2.4 (0.7)	3.9 (0.9)	5.8 (1.2)
<i>Fragilaria ulna</i> var. <i>acus</i> (Kütz.) Lange-Bertalot (Frar)					
<i>Fragilariforma virescens</i> (Ralfs) Williams & Round (Frvi)					
<i>Frustulia rhomboides</i> (Ehr.) DeToni (Frrh)					
<i>Frustulia vulgaris</i> (Thwaites) DeT. (Frvu)	0.2 (0.2)	0.1 (0.1)	0.2 (0.2)		0.1 (0.1)
<i>Gomphoneis herculeana</i> (Ehr.) Cl. (Gohe)	1.5 (0.5)	3.2 (1.5)	1.4 (0.4)		0.5 (0.1)
<i>Gomphonema</i> sp. (Gosp)					
<i>Gomphonema accuminatum</i> Ehr. (Goac)					2.1 (0.7)
<i>Gomphonema affine</i> Kütz. (Goaf)					
<i>Gomphonema angustum</i> Ag. (Goan)					
<i>Gomphonema clavatum</i> Ehr. (Gocl)	0.2 (0.2)				

APPENDIX TABLE 1e. (Cont.)

TAXA	Marble 7 VII97	Mammoth Spring 18VIII97	Burcham 25VIII97	Nye 15VII98	Bodie 16VII98
<i>Gomphonema clevei</i> Fricke (Gocl)		0.2 (0.2)			
<i>Gomphonema gracile</i> Ehr. (Gogr)					
<i>Gomphonema minuta</i> (C. Ag.) C. Ag. (Gomi)					
<i>Gomphonema olivaceum</i> (Horn.) Bréb. (Gool)					
<i>Gomphonema parvulum</i> Kütz. (Gopa)	0.6 (0.0)	0.3 (0.2)	0.5 (0.3)	0.4 (0.1)	0.7 (0.3)
<i>Gomphonema truncatum</i> (Cl. Ag.) Cl. Ag. (Gotr)			1.1 (0.4)		
<i>Gomphonema ventricosum</i> Greg. (Gove)		0.9 (0.3)			
<i>cf. Grammatophora</i> (Gr)					
<i>Gyrosigma</i> sp. (Gysp)					
<i>Gyrosigma acumdatum</i> (Kütz.) Rabh. (Gyac)				0.3 (0.2)	
<i>Hantzschia amphioxys</i> (Ehr.) Grun. (Haam)		0.7 (0.2)	0.7 (0.3)	1.0 (0.4)	0.5 (0.1)
<i>Hippodonta capitata</i> Ehr. (Naca)					0.2 (0.2)
<i>Karayevia clevei</i> (Grun.) Round & Bukhtyarova (Kacl)					
<i>Luticola mutica</i> (Kütz.) Mann (Lumu)				0.3 (0.2)	
<i>Mastogloia smithii</i> Thwaites (Masm)					
<i>Melosira varians</i> Ag. (Meva)		9.2 (1.5)			
<i>Meridion circulare</i> (Grev.) Ag. (Meci)					
<i>Meridion circulare</i> var. <i>constrictum</i> (Ralfs.) Van Heurck (Mecico)	1.2 (0.6)	0.2 (0.1)	2.3 (0.6)	1.8 (0.7)	2.9 (0.9)
<i>Navicula</i> sp. (Nasp)					
<i>Navicula angusta</i> Grun. (Naan)					
<i>Navicula arenaria</i> Donk. (Naar)					
<i>Navicula arvensis</i> Hust. (Naarv)					
<i>Navicula bryophila</i> Boye Petersen (Nabr)					
<i>Navicula capitatoradiata</i> Germain (Nacap)					

APPENDIX TABLE 1e. (Cont.)

TAXA	Marble 7 VII97	Mammoth Spring 18VIII97	Burcham 25VIII97	Nye 15VII98	Bodie 16VII98
<i>Navicula cari</i> Ehr. (Nacai)					
<i>Navicula cincta</i> (Ehr.) Ralfs (Nacin)	1.7 (1.1)	0.7 (0.1)	6.4 (1.7)	1.4 (0.6)	0.7 (0.2)
<i>Navicula clematis</i> Grun (Nacl)					
<i>Navicula cryptocephala</i> Kütz. (Nacr)	0.6 (0.4)	0.8 (0.1)	0.7 (0.3)	0.5 (0.2)	0.7 (0.2)
<i>Navicula cryptonella</i> Lange-Bertalot (Nacry)					
<i>Navicula cuspidata</i> Kütz. (Kütz.) (Nacu)					
<i>Navicula decussis</i> Østrup. (Nade)		0.1 (0.1)			
<i>Navicula dentata</i> Hust. (Naden)					
<i>Navicula elginensis</i> (Greg.) Ralfs.n (Nael)					
<i>Navicula erifuga</i> Lange-Bertalot (Naer)					
<i>Navicula expecta</i> Van Land. (Naex)					
<i>Navicula heufleriana</i> (Grun.) Grun. (Nahe)					
<i>Navicula incerta</i> Lange-Bertalot (Nain)					
<i>Navicula indifferens</i> Hust. (Naind)					0.1 (0.1)
<i>Navicula lanceolata</i> (Ag.) Kütz. (Nala)	3.1 (1.3)	0.3 (0.2)		0.1 (0.1)	0.4 (0.1)
<i>Navicula libonensis</i> Schoemann (Nali)					
<i>Navicula minuscula</i> Grun. (Namu)		0.2 (0.2)	0.8 (0.4)	1.7 (0.8)	0.6 (0.4)
<i>Navicula protracta</i> (Grun.) Cl. (Napr)					
<i>Navicula radiosa</i> Kütz. (Nara)	0.2 (0.2)				0.1 (0.1)
<i>Navicula reinhardtii</i> Grun. (Nare)					
<i>Navicula rhynchocephala</i> Kütz. (Narh)					
<i>Navicula rotundra</i> Hust. (Naro)					
<i>Navicula schoenfeldii</i> Hust. (Nasc)					
<i>Navicula schroeterii</i> Meister (Nasch)	0.4 (0.4)	0.6 (0.2)		0.1 (0.1)	0.5 (0.3)

APPENDIX TABLE 1e. (Cont.)

TAXA	Marble 7 VII97	Mammoth Spring 18VIII97	Burcham 25VIII97	Nye 15VII98	Bodie 16VII98
<i>Navicula subminiscula</i> (Grun.) Lange-Bertalot (Nasb)					
<i>Navicula subrhyncocephala</i> Hust. (Nasub)					
<i>Navicula subrotundata</i> Hust. (Nasubr)					
<i>Navicula tenelloides</i> Hust. (Nate)	0.2 (0.2)			1.5 (0.3)	0.4 (0.4)
<i>Navicula tridentula</i> Krasske (Natri)				0.1 (0.1)	
<i>Navicula tripunctata</i> (O.F. Müll) Bory (Natr)			0.2 (0.2)		
<i>Navicula variostrata</i> Krasske (Nava)					
<i>Navicula veneta</i> Kütz. (Nave)	1.3 (0.5)	0.5 (0.2)	1.3 (0.6)		
<i>Navicula viridula</i> (Kütz.) Kütz. (Navi)					
<i>Nitzschia acicularis</i> W. Sm. (Niac)					0.5 (0.1)
<i>Nitzschia amphibia</i> Grun. (Niam)		0.3 (0.2)		0.3 (0.2)	0.2 (0.2)
<i>Nitzschia compressa</i> (Bailey) Boyer (Nico)					
<i>Nitzschia dissipata</i> (Kütz.) Kütz. (Nidi)	1.4 (0.4)	8.2 (0.5)	5.0 (0.7)	0.6 (0.2)	7.0 (2.2)
<i>Nitzschia epithemoides</i> Grun. (Niep)					
<i>Nitzschia filiformis</i> (W. Sm.) Hust. (Nifi)					
<i>Nitzschia frustulum</i> Kütz. (Nifr)	1.1 (0.4)	7.4 (1.8)	16.6 (3.5)	7.0 (0.4)	5.4 (0.9)
<i>Nitzschia hybrida</i> Grun. (Nihy)					
<i>Nitzschia inconspicua</i> Grun. (Niin)					
<i>Nitzschia linearis</i> W. Sm. (Nili)	1.0 (0.7)	1.0 (0.2)	2.4 (0.7)	2.9 (0.7)	0.8 (0.3)
<i>Nitzschia palea</i> (Kütz.) W. Sm. (Nipa)	0.2 (0.2)	8.6 (1.0)	5.2 (1.4)	0.8 (0.4)	26.4 (2.6)
<i>Nitzschia sigma</i> (Kütz.) W. Sm. (Nisi)			1.1 (0.5)	0.1 (0.1)	
<i>Nitzschia sigmoidea</i> (Nitz.) W. Sm. (Nisig)		0.4 (0.4)			
<i>Nitzschia sinuata</i> var. <i>delognei</i> (Grun.) Lange-Bertalot (Niside)					
<i>Nitzschia umbonata</i> (Ehr.) Lange-Bertalot (Nium)					

APPENDIX TABLE 1e. (Cont.)

TAXA	Marble 7 VII97	Mammoth Spring 18VIII97	Burcham 25VIII97	Nye 15VII98	Bodie 16VII98
<i>Nitzschia vermicularis</i> (Kütz.) Hantz. (Nive)					
<i>Opephora olsenii</i> Moller (Opol)					
<i>Pinnularia</i> sp. (Pisp)					0.2 (0.2)
<i>Pinnularia borealis</i> Ehr. (Pibo)					
<i>Pinnularia brevicostata</i> Cl. (Pibr)					
<i>Pinnularia divergens</i> W. Sm. (Pidi)	0.6 (0.1)	0.6 (0.2)	0.2 (0.2)	0.3 (0.2)	
<i>Pinnularia lagerstedtii</i> (Cl.) Cl.- Euler (Pila)		0.2 (0.2)			
<i>Pinnularia maior</i> (Kütz.) Rabh. (Pima)		0.2 (0.2)			
<i>Pinnularia obscura</i> Krasske (Piob)					
<i>Pinnularia stromatophora</i> (Grun.) Cl. (Pist)					
<i>Pinnularia subcapitata</i> Greg. (Pisu)		0.1 (0.1)		0.2 (0.2)	
<i>Pinnularia viridis</i> (Nitz.) Ehr. (Pivi)					
<i>Planothidium delicatula</i> (Kütz.) Round & Bukhtiyarova (Plde)					
<i>Planothidium lanceolata</i> (Breb.) Round & Bukhtiyarova (Plla)	2.5 (0.5)	3.3 (0.6)	15.9 (1.9)	30.7 (2.6)	9.1 (1.2)
<i>Planothidium lanceolata</i> var. <i>dubia</i> (Grun.) Lange-Bertalot (Plladu)			0.5 (0.5)		
<i>Reimeria sinuata</i> (Greg.) Kociolek & Stoermer (Resi)	1.2 (0.4)	0.5 (0.2)	1.5 (0.9)		
<i>Rhopalodia gibba</i> (Ehr.) O. Müll. (Rhgi)				0.3 (0.1)	0.2 (0.2)
<i>Rhopalodia gibberula</i> (Ehr.) O. Müll. (Rhgib)		0.5 (0.1)		0.9 (0.2)	0.5 (0.1)
<i>Rhoicosphenia abbreviata</i> (Ag.) Lange-Bertalort (Rhab)	2.9 (0.4)	2.2 (0.1)	6.4 (1.5)	1.9 (0.5)	3.3 (0.6)
<i>Sellophora pupula</i> (Kütz.) Mereschkowsky (Sepu)		0.5 (0.1)			0.4 (0.2)
<i>Sellophora pupula</i> var. <i>psuedopupula</i> (Krasske) Mereschkowsky (Sepups)					

APPENDIX TABLE 1e. (Cont.)

TAXA	Marble 7 VII97	Mammoth Spring 18VIII97	Burcham 25VIII97	Nye 15VII98	Bodie 16VII98
<i>Sellaphora pygmaea</i> (Kütz.) Mereschkowsky (Sepy)					
<i>Sellaphora seminulum</i> (Grun.) Mann (Sese)					
<i>Stauroneis anceps</i> Ehr. (Stan)		0.1 (0.1)			
<i>Stauroneis kriegerii</i> Patrick (Stkr)			0.2 (0.2)		
<i>Stauroneis phoenicenteron</i> (Nitz.) Ehr. (Stph)					
<i>Stauroneis smithii</i> Grun. (Stsm)				0.1 (0.1)	0.1 (01)
<i>Staurosira construens</i> (Ehr.) Hust. (Frc)			0.8 (0.8)	0.1 (0.1)	
<i>Staurosira construens</i> f. <i>binodis</i> (Ehr.) Hust. (Frcobi)					
<i>Staurosira construens</i> var. <i>venter</i> (Ehr.) Hust. (Frve)	0.9 (0.9)	4.3 (0.3)		3.4 (2.2)	6.3 (2.6)
<i>Staurosirella pinnata</i> (Ehr.) Williams & Round (Stpi)	0.8 (0.8)	0.5 (0.1)	1.0 (0.1)	0.4 (0.3)	
<i>Stephanodiscus hantzschii</i> Grun. (in Cl. & Grun.) (Stha)		0.4 (0.1)			
<i>Stephanodiscus niagare</i> Ehr. (Stni)					
<i>Surirella angustata</i> Kütz. (Syan)					
<i>Surirella brebissonii</i> Kramm & Lange-Bertalot (Subr)				3.4 (1.0)	0.5 (0.3)
<i>Surirella ovalis</i> Breb. (Suov)					
<i>Surirella striatula</i> Turp. (Sust)					
<i>Surirella tenera</i> Greg. (Sute)					
<i>Tabellaria flocculosa</i> (Roth) Grun. (Tafe)					
<i>Tetracyclus rupestris</i> (Braun.) Grun. (Teru)					

APPENDIX TABLE 1f. Relative % (\pm SE) frequency of diatoms and collection dates for selected streams in the Lahontan Basin, USA. Species acronyms are in parentheses.

TAXA	Deadman 6VII99	McGee 21VII99	Convict 16VII99	Rock 22VI99	Cottonwood 13VIII99
<i>Achnanthes exigua</i> Grun. (Acex)					
<i>Achnanthes hungarica</i> Grun. (Achu)					
<i>Achnanthes laterostrata</i> Hust. (Acla)			0.5 (0.5)	0.4 (0.4)	
<i>Achnanthes linearis</i> (W. Sm.) Grun. (Acli)				2.3 (1.6)	
<i>Achnantheidium minutissima</i> (Kütz.) Czar. (Acmi)	5.3 (1.8)	41.0 (8.7)	9.2 (1.8)	30.2 (0.9)	2.4 (0.4)
<i>Amphipleura pellucida</i> (Kütz.) Kütz. (Ampel)			0.2 (0.2)		
<i>Amphora coffeaeformis</i> (Ag.) Kütz. (Amco)			0.3 (0.3)		
<i>Amphora ovalis</i> (Kütz.) Kütz. (Amov)					
<i>Amphora pediculus</i> (Kütz.) Grun. (Ampe)	0.2 (0.2)	0.2 (0.2)		0.7 (0.3)	
<i>Amphora veneta</i> Kütz. (Amve)		0.3 (0.3)			
<i>Anomoeoneis sphaerophora</i> f. <i>costata</i> Kütz.) Schmid. (Anspco)					
<i>Anomoeoneis vitrea</i> (Grun.) Grun. (Anvi)				0.1 (0.1)	
<i>Asterionella formosa</i> Hass. (Asfo)					
<i>Aulacoseira ambigua</i> (Grun.) Simon. (Auam)	0.8 (0.5)	0.6 (0.6)	0.2 (0.2)	2.0 (0.5)	
<i>Aulacoseira islandica</i> O. Muell. (Auis)					
<i>Aulacoseira italica</i> (Ehr.) Simon. (Auit)					
<i>Caloneis amphibaena</i> (Bory) Cl. (Caam)					
<i>Caloneis bacillum</i> (Grun.) Cl. (Caba)					
<i>Caloneis molaris</i> (Grun.) Krammer (Camo)					
<i>Caloneis schumanniana</i> (Grun.) Cl. (Case)					
<i>Caloneis silicula</i> (Ehr.) Cl. (Casi)					
<i>Caloneis sublinearis</i> (Grun.) Kramme (Casu)					
<i>Caloneis tenuis</i> (Greg.) Krammer (Cate)					
<i>Cocconeis pediculus</i> Kütz. (Cope)	0.2 (0.2)	2.5 (1.2)	1.4 (0.3)	0.3 (0.3)	

APPENDIX TABLE 1f. (Cont.)

TAXA	Deadman 6VII99	McGee 21VII99	Convict 16VII99	Rock 22VI99	Cottonwood 13VIII99
<i>Cocconeis placentula</i> Ehr. (Copl)					
<i>Cocconeis placentula</i> var. <i>euglypta</i> (Ehr.) Cl. (Cople)	0.7 (0.1)	6.2 (2.5)	15.4 (8.9)	10.7 (4.1)	6.5 (1.3)
<i>Cocconeis placentula</i> var. <i>lineata</i> (Ehr.) V.H. (Coplli)					
<i>Cocconeis placentula</i> var. <i>pseudolineata</i> Geitler (Coplps)					
<i>Ctenophora pulchella</i> (Ralfs) Williams & Round (Ctpu)					
<i>Cyclotella</i> sp. (Csp)					
<i>Cyclotella bodanica</i> Grun. (Cybo)		0.3 (0.3)	2.0 (0.4)	0.2 (0.2)	
<i>Cyclotella meneghiniana</i> Kütz. (Cyme)					
<i>Cyclotella stelligera</i> Cl. & Grun. (Cyst)		0.3 (0.3)	0.7 (0.5)		
<i>Cyclostephanos novaezeelandiae</i> (Cl.) Round (Cyno)					
<i>Cymatopleura solea</i> (Bréb) W. Sm. (Cyso)					
<i>Cymbella</i> sp. (Cysp)					
<i>Cymbella affinis</i> Kütz. (Cyaf)	5.8 (0.8)	3.4 (0.4)	1.6 (0.9)	1.5 (0.3)	0.4 (0.2)
<i>Cymbella aspera</i> (Ehr.) Cl. (Cyas)					
<i>Cymbella amphicephala</i> Naeg. ex. Kütz. (Cyam)					
<i>Cymbella cistula</i> (Ehr.) Kirch. (Cyci)					
<i>Cymbella gracilis</i> (Ehr.) Kütz. (Cygr)					
<i>Cymbella latens</i> Krasske (Cyla)					
<i>Cymbella mexicana</i> (Ehr.) Cl. (Cymex)					
<i>Cymbella minuta</i> Hilse ex. Rabh. (Cymi)	1.6 (0.6)	0.7 (0.2)		1.4 (0.5)	1.1 (0.3)
<i>Cymbella naviculiformis</i> (Auers.) Cl. (Cyna)	0.2 (0.2)				
<i>Cymbella prostrata</i> (Berk.) Cl. (Cypr)					
<i>Cymbella proxima</i> Reimer (Cypro)					
<i>Cymbella silesiaca</i> Bleisch in Rabh. (Cysi)	0.5 (0.3)				
<i>Cymbella tumida</i> (Breb.) Van Heurck (Cytu)					
<i>Cybellonitzschia diluviana</i> Hust. (Cydi)					

APPENDIX TABLE 1f. (Cont.)

TAXA	Deadman 6VII99	McGee 21VII99	Convict 16VII99	Rock 22VI99	Cottonwood 13VIII99
<i>Denticula elegans</i> Kütz. (Deel)		4.4 (3.4)	0.5 (0.3)	0.3 (0.2)	
<i>Diatoma</i> sp. (Disp)					
<i>Diatoma hyemalis</i> (Roth) Heiberg (Duhy)	6.0 (0.5)				
<i>Diatoma mesodon</i> (Ehr.) Kütz. (Dime)	1.6 (0.1)	0.1 (0.1)			0.6 (0.4)
<i>Diatoma tenuis</i> Ag. (Dite)					
<i>Diatoma vulgaris</i> Bory (Divu)	0.2 (0.2)	0.1 (0.1)	0.2 (0.2)		0.1 (0.1)
<i>Diploneis</i> sp. (Dipsp)					
<i>Diploneis elliptica</i> (Kütz.) Cl. (Diel)					
<i>Diploneis oblongella</i> (Naeg. ex. Kütz) Ross (Diob)					
<i>Encyonopsis microcephala</i> (Grun.) Krammer (Enmi)	0.2 (0.2)	3.0 (1.5)			0.3 (0.3)
<i>Eolimna minima</i> (Kütz.) Lange-Bertalot (Eimi)			0.5 (0.3)	1.9 (0.4)	1.3 (0.8)
<i>Epithemia</i> sp. (Epsp)					
<i>Epithemia adnata</i> (Kütz.) Bréb. (Epad)					
<i>Epithemia argus</i> (Ehr.) Kütz. (Epar)					
<i>Epithemia sorex</i> Kütz. (Epsa)	0.2 (0.2)	0.1 (0.1)	4.2 (2.1)	0.3 (0.2)	0.2 (0.2)
<i>Epithemia turgida</i> (Ehr.) Kütz. (Eptu)	0.2 (0.2)		3.3 (1.7)	0.2 (0.2)	
<i>Eunotia</i> sp. (Eusp)					
<i>Eunotia bilunaris</i> (Ehr.) Mills. (Eubi)	0.2 (0.2)			4.2 (2.7)	0.8 (0.8)
<i>Fallacia pygmaea</i> (Kütz.) Stickle & Mann (Fapy)					
<i>Fragilaria arcus</i> (Ehr.) Cl. (Frar)	8.7 (2.7)	1.0 (0.5)		1.9 (0.2)	
<i>Fragilaria brevistriata</i> (Grun.) Williams & Round (Frbr)					
<i>Fragilaria capucina</i> Desm. (Frca)	8.4 (2.6)	0.9 (0.6)	4.8 (0.9)	3.8 (1.0)	
<i>Fragilaria capucina</i> var. <i>capitellata</i> (Grun. Lange-Bertalot (Frcaca)					
<i>Fragilaria capucina</i> var. <i>gracilis</i> (Oestrup) Hust. (Frcag)					

APPENDIX TABLE 1f. (Cont.)

TAXA	Deadman 6VII99	McGee 21VII99	Convict 16VII99	Rock 22VI99	Cottonwood 13VIII99
<i>Fragilaria capucina</i> var. <i>rumpens</i> (Kütz) Lange-Bertalot (Frcaru)					
<i>Fragilaria capucina</i> var. <i>vaucheriae</i> (Kütz) Lange-Bertalot (Frcava)	2.1 (0.6)	5.7 (0.4)	9.7 (3.5)	8.3 (0.5)	4.0 (1.0)
<i>Fragilaria crotonensis</i> Kitt. (Frcr)			0.6 (0.6)		
<i>Fragilaria leptostauron</i> (Ehr.) Hust. (Frle)					
<i>Fragilaria parasitica</i> (W. Sm.) Grun. (Frpa)					
<i>Fragilaria parasitica</i> var. <i>subconstricta</i> Grun. (Frsu)					
<i>Fragilaria robusta</i> (Ralfs.) Lange-Bertalot (Frro)					
<i>Fragilaria tenera</i> (W. Sm.) Lange-Bertalot (Frte)		0.6 (0.6)	0.3 (0.3)	1.2 (0.4)	
<i>Fragilaria ulna</i> (Nitzs.) Lange-Bertalot (Frul)	1.2 (0.3)	0.8 (0.1)	4.6 (1.8)	2.0 (0.7)	0.8 (0.1)
<i>Fragilaria ulna</i> var. <i>arcus</i> (Kütz.) Lange-Bertalot (Frar)					
<i>Fragilariforma virescens</i> (Ralfs) Williams & Round (Frvl)		0.3 (0.3)			
<i>Frustulia rhomboides</i> (Ehr.) DeToni (Frrh)					
<i>Frustulia vulgaris</i> (Thwaites) DeT. (Frvu)	0.2 (0.2)			0.2 (0.2)	0.2 (0.2)
<i>Gomphoneis herculeana</i> (Ehr.) Cl. (Gohe)		1.2 (0.2)	1.0 (0.3)	0.7 (0.2)	
<i>Gomphonema</i> sp. (Gosp)					
<i>Gomphonema accuminatum</i> Ehr. (Goac)					
<i>Gomphonema affine</i> Kütz. (Goaf)					
<i>Gomphonema angustum</i> Ag. (Goan)	0.3 (0.3)				1.3 (1.1)
<i>Gomphonema clavatum</i> Ehr. (Gocl)			1.1 (6.6)	0.9 (0.5)	

APPENDIX TABLE 1f. (Cont.)

TAXA	Deadman 6VII99	McGee 21VII99	Convict 16VII99	Rock 22VI99	Cottonwood 13VIII99
<i>Gomphonema clevei</i> Fricke (Gocl)					
<i>Gomphonema gracile</i> Ehr. (Gogr)					
<i>Gomphonema minuta</i> (C. Ag.) C. Ag. (Gomi)		4.4 (1.3)	2.5 (0.4)	3.9 (0.4)	
<i>Gomphonema olivaceum</i> (Horn.) Bréb. (Gool)					
<i>Gomphonema parvulum</i> Kütz. (Gopa)	1.0 (0.3)	2.6 (0.5)	0.5 (0.3)		0.2 (0.2)
<i>Gomphonema truncatum</i> (Cl. Ag.) Cl. Ag. (Gotr)					
<i>Gomphonema ventricosum</i> Greg. (Gove)					
<i>cf. Grammatophora</i> (Gr)	0.2 (0.2)		0.6 (0.6)		
<i>Gyrosigma</i> sp. (Gysp)					
<i>Gyrosigma acumdatum</i> (Kütz.) Rabh. (Gyac)					
<i>Hantzschia amphioxys</i> (Ehr.) Grun. (Haam)		0.3 (0.3)	1.3 (0.4)		0.1 (0.1)
<i>Hippodonta capitata</i> Ehr. (Naca)			0.3 (0.3)		
<i>Karayevia clevei</i> (Grun.) Round & Bukhtyarova (Kacl)				0.5 (0.5)	
<i>Luticola mutica</i> (Kütz.) Mann (Lumu)		0.8 (0.1)		0.3 (0.2)	0.2 (0.2)
<i>Mastogloia smithii</i> Thwaites (Masm)					
<i>Melosira varians</i> Ag. (Meva)					
<i>Meridion circulare</i> (Grev.) Ag. (Meci)	0.4 (0.2)	0.7 (0.2)	0.5 (0.3)		0.1 (0.1)
<i>Meridion circulare</i> var. <i>constrictum</i> (Ralfs.) Van Heurck (Mecico)					
<i>Navicula</i> sp. (Nasp)					
<i>Navicula angusta</i> Grun. (Naan)					0.2 (0.2)
<i>Navicula arenaria</i> Donk. (Naar)					
<i>Navicula arvensis</i> Hust. (Naarv)					
<i>Navicula bryophila</i> Boye Petersen (Nabr)					
<i>Navicula capitatoradiata</i> Germain (Nacap)					

APPENDIX TABLE 1f. (Cont.)

TAXA	Deadman 6VII99	McGee 21VII99	Convict 16VII99	Rock 22VI99	Cottonwood 13VIII99
<i>Navicula cari</i> Ehr. (Nacai)					
<i>Navicula cincta</i> (Ehr.) Ralfs (Nacin)	0.2 (0.2)				0.2 (0.2)
<i>Navicula clematis</i> Grun (Nacl)					
<i>Navicula cryptocephala</i> Kütz. (Nacr)					0.1 (0.1)
<i>Navicula cryptonella</i> Lange-Bertalot (Nacry)				1.1 (0.3)	5.2 (2.0)
<i>Navicula cuspidata</i> Kütz. (Kütz.) (Nacu)					
<i>Navicula decussis</i> Østrup. (Nade)				0.2 (0.2)	
<i>Navicula dentata</i> Hust. (Naden)					
<i>Navicula elginensis</i> (Greg.) Ralfs.n (Nael)					
<i>Navicula erifuga</i> Lange-Bertalot (Naer)					
<i>Navicula expecta</i> Van Land. (Naex)					
<i>Navicula heufleriana</i> (Grun.) Grun. (Nahe)					
<i>Navicula incerta</i> Lange-Bertalot (Nain)					0.1 (0.1)
<i>Navicula indifferens</i> Hust. (Naind)					
<i>Navicula lanceolata</i> (Ag.) Kütz. (Nala)	0.5 (0.1)				
<i>Navicula libonensis</i> Schoemann (Nali)					
<i>Navicula minuscula</i> Grun. (Namu)		0.3 (0.3)			3.0 (0.6)
<i>Navicula protracta</i> (Grun.) Cl. (Napr)					
<i>Navicula radiosa</i> Kütz. (Nara)					
<i>Navicula reinhardtii</i> Grun. (Nare)					
<i>Navicula rhynchocephala</i> Kütz. (Narh)		0.9 (0.9)		0.3 (0.2)	
<i>Navicula rotundra</i> Hust. (Naro)					
<i>Navicula schoenfeldii</i> Hust. (Nasc)					
<i>Navicula schroeterii</i> Meister (Nasch)					

APPENDIX TABLE 1f. (Cont.)

TAXA	Deadman 6VII99	McGee 21VII99	Convict 16VII99	Rock 22VI99	Cottonwood 13VIII99
<i>Navicula subminiscula</i> (Grun.) Lange-Bertalot (Nasb)					
<i>Navicula subrhyncocephala</i> Hust. (Nasub)					
<i>Navicula subrotundata</i> Hust. (Nasubr)					
<i>Navicula tenelloides</i> Hust. (Nate)				0.4 (0.4)	
<i>Navicula tridentula</i> Krasske (Natri)					
<i>Navicula tripunctata</i> (O.F. Müll) Bory (Natr)	0.2 (0.2)	1.1 (0.3)	0.7 (0.5)	0.2 (0.2)	0.3 (0.3)
<i>Navicula variostrata</i> Krasske (Nava)					
<i>Navicula veneta</i> Kütz. (Nave)	0.8 (0.2)	0.2 (0.2)	0.5 (0.3)	0.2 (0.2)	0.6 (0.6)
<i>Navicula viridula</i> (Kütz.) Kütz. (Navi)					
<i>Nitzschia acicularis</i> W. Sm. (Niac)					
<i>Nitzschia amphibia</i> Grun. (Niam)	0.2 (0.2)	1.1 (0.2)	1.0 (0.3)		0.3 (0.1)
<i>Nitzschia compressa</i> (Bailey) Boyer (Nico)					
<i>Nitzschia dissipata</i> (Kütz.) Kütz. (Nidi)	3.9 (0.6)	1.1 (0.6)		0.9 (0.5)	5.6 (1.7)
<i>Nitzschia epithemoides</i> Grun. (Niep)					
<i>Nitzschia filiformis</i> (W. Sm.) Hust. (Nifi)					
<i>Nitzschia frustulum</i> Kütz. (Nifr)	3.0 (0.5)	1.0 (0.2)	3.6 (1.0)	0.9 (0.4)	15.9 (0.6)
<i>Nitzschia hybrida</i> Grun. (Nihy)					
<i>Nitzschia inconspicua</i> Grun. (Niin)					10.2 (0.9)
<i>Nitzschia linearis</i> W. Sm. (Nili)			1.7 (0.6)	0.7 (0.5)	0.8 (0.2)
<i>Nitzschia palea</i> (Kütz.) W. Sm. (Nipa)	12.6 (2.5)	0.4 (0.4)	2.4 (1.4)	0.2 (0.2)	4.7 (0.8)
<i>Nitzschia sigma</i> (Kütz.) W. Sm. (Nisi)					
<i>Nitzschia sigmoidea</i> (Nitz.) W. Sm. (Nisig)					
<i>Nitzschia sinuata</i> var. <i>delognei</i> (Grun.) Lange-Bertalot (Niside)					
<i>Nitzschia umbonata</i> (Ehr.) Lange-Bertalot (Nium)					

APPENDIX TABLE 1f. (Cont.)

TAXA	Deadman 6VII99	McGee 21VII99	Convict 16VII99	Rock 22VI99	Cottonwood 13VIII99
<i>Nitzschia vermicularis</i> (Kütz.) Hantz. (Nive)					
<i>Opephora olsenii</i> Moller (Opol)				0.3 (0.3)	0.2 (0.2)
<i>Pinnularia</i> sp. (Pisp)			0.3 (0.3)		
<i>Pinnularia borealis</i> Ehr. (Pibo)			0.5 (0.5)	0.2 (0.2)	
<i>Pinnularia brevicostata</i> Cl. (Pibr)					
<i>Pinnularia divergens</i> W. Sm. (Pidi)					
<i>Pinnularia lagerstedtii</i> (Cl.) Cl.- Euler (Pila)					
<i>Pinnularia maior</i> (Kütz.) Rabh. (Pima)					
<i>Pinnularia obscura</i> Krasske (Piob)				0.3 (0.3)	
<i>Pinnularia stromatophora</i> (Grun.) Cl. (Pist)					
<i>Pinnularia subcapitata</i> Greg. (Pisu)	0.4 (0.2)				
<i>Pinnularia viridis</i> (Nitz.) Ehr. (Pivi)				0.3 (0.2)	0.1 (0.1)
<i>Planothidium delicatula</i> (Kütz.) Round & Bukhtiyarova (Plde)					
<i>Planothidium lanceolata</i> (Breb.) Round & Bukhtiyarova (Plla)	25.0 (3.7)	7.7 (0.8)	9.9 (0.7)	6.8 (1.8)	9.0 (1.0)
<i>Planothidium lanceolata</i> var. <i>dubia</i> (Grun.) Lange-Bertalot (Plladu)				0.3 (0.3)	
<i>Reimeria sinuata</i> (Greg.) Kociolek & Stoermer (Resi)	2.1 (0.6)	0.9 (0.5)	4.1 (1.2)	0.8 (0.3)	2.9 (1.1)
<i>Rhopalodia gibba</i> (Ehr.) O. Müll. (Rhgi)					
<i>Rhopalodia gibberula</i> (Ehr.) O. Müll. (Rhgib)					
<i>Rhoicosphenia abbreviata</i> (Ag.) Lange-Bertalort (Rhab)	3.6 (1.1)	1.3 (0.7)	1.6 (0.2)	1.8 (0.1)	14.7 (3.6)
<i>Sellophora pupula</i> (Kütz.) Mereschkowsky (Sepu)					
<i>Sellophora pupula</i> var. <i>psuedopupula</i> (Krasske) Mereschkowsky (Sepups)					

APPENDIX TABLE 1f (Cont.)

TAXA	Deadman 6VII99	McGee 21VII99	Convict 16VII99	Rock 22VI99	Cottonwood 13VIII99
<i>Sellaphora pygmaea</i> (Kütz.) Mereschkowsky (Sepy)					
<i>Sellaphora seminulum</i> (Grun.) Mann (Sese)					
<i>Stauroneis anceps</i> Ehr. (Stan)			0.3 (0.3)	0.2 (0.1)	0.2 (0.2)
<i>Stauroneis kriegerii</i> Patrick (Stkr)			0.3 (0.3)		
<i>Stauroneis phoenicenteron</i> (Nitz.) Ehr. (Stph)					
<i>Stauroneis smithii</i> Grun. (Stsm)	0.2 (0.3)				
<i>Staurosira construens</i> (Ehr.) Hust. (Frc)	0.2 (0.2)	1.2 (0.6)	1.9 (0.5)	1.2 (1.0)	
<i>Staurosira construens</i> f. <i>binodis</i> (Ehr.) Hust. (Frcobi)			2.1 (1.3)	0.7 (0.7)	
<i>Staurosira construens</i> var. <i>venter</i> (Ehr.) Hust. (Frve)			0.5 (0.3)	0.5 (0.3)	
<i>Staurosirella pinnata</i> (Ehr.) Williams & Round (Stpi)				0.5 (0.1)	
<i>Stephanodiscus hantzschii</i> Grun. (in Cl. & Grun.) (Stha)					
<i>Stephanodiscus niagare</i> Ehr. (Stni)				0.2 (0.2)	
<i>Surirella angustata</i> Kütz. (Syan)		0.3 (0.3)	0.4 (0.4)		
<i>Surirella brebissonii</i> Kramm & Lange-Bertalot (Subr)					
<i>Surirella ovalis</i> Breb. (Suov)					
<i>Surirella striatula</i> Turp. (Sust)					
<i>Surirella tenera</i> Greg. (Sute)					
<i>Tabellaria flocculosa</i> (Roth) Grun. (Tafe)				0.2 (0.2)	0.4 (0.4)
<i>Tetracyclus rupestris</i> (Braun.) Grun. (Teru)	0.7 (0.2)				

APPENDIX TABLE 1g. Relative % (\pm SE) frequency of diatoms and collection dates for selected streams in the Lahontan Basin, USA. Species acronyms are in parentheses.

TAXA	Lower Hot 17VII98	O'Harrel 29VII99	Kirman 18VIII99	Upper Owens 24VIII99	Upper Truckee Barton 29IX99
<i>Achnanthes exigua</i> Grun. (Acex)	0.1 (0.1)	0.5 (0.2)	1.2 (0.6)	0.5 (0.1)	0.1 (0.1)
<i>Achnanthes hungarica</i> Grun. (Achu)					
<i>Achnanthes laterostrata</i> Hust. (Acla)		0.1 (0.1)			
<i>Achnanthes linearis</i> (W. Sm.) Grun. (Acli)					
<i>Achnantheidium minutissima</i> (Kütz.) Czar. (Acmi)	0.9 (0.5)	22.4 (4.4)	9.7 (4.9)	1.7 (0.7)	4.4 (1.1)
<i>Amphipleura pellucida</i> (Kütz.) Kütz. (Ampel)			1.2 (0.4)		
<i>Amphora coffeaeformis</i> (Ag.) Kütz. (Amco)	0.2 (0.1)	0.5 (0.1)		0.1 (0.1)	
<i>Amphora ovalis</i> (Kütz.) Kütz. (Amov)			0.1 (0.1)		
<i>Amphora pediculus</i> (Kütz.) Grun. (Ampe)	0.6 (0.3)	0.6 (0.1)	0.8 (0.2)	0.6 (0.2)	
<i>Amphora veneta</i> Kütz. (Amve)					
<i>Anomoeoneis sphaerophora</i> f. <i>costata</i> Kütz.) Schmid. (Anspco)					
<i>Anomoeoneis vitrea</i> (Grun.) Grun. (Anvi)					
<i>Asterionella formosa</i> Hass. (Asfo)					
<i>Aulacoseira ambigua</i> (Grun.) Simon. (Auam)	0.1 (0.1)	2.9 (.05)	0.3 (0.3)		1.3 (0.8)
<i>Aulacoseira islandica</i> O. Muell. (Auis)					
<i>Aulacoseira italica</i> (Ehr.) Simon. (Auit)					
<i>Caloneis amphisbaena</i> (Bory) Cl. (Caam)					
<i>Caloneis bacillum</i> (Grun.) Cl. (Caba)					
<i>Caloneis molaris</i> (Grun.) Krammer (Camo)		0.6 (0.2)			
<i>Caloneis schumanniana</i> (Grun.) Cl. (Case)			0.3 (0.1)		
<i>Caloneis silicula</i> (Ehr.) Cl. (Casi)		1.0 (0.2)	0.8 (0.2)	0.3 (0.1)	
<i>Caloneis sublinearis</i> (Grun.) Kramme (Casu)	1.0 (0.1)	0.5 (0.1)	1.0 (0.3)	0.1 (0.1)	
<i>Caloneis tenuis</i> (Greg.) Krammer (Cate)					
<i>Cocconeis pediculus</i> Kütz. (Cope)		0.5 (0.5)	0.4 (0.2)	1.9 (0.8)	

APPENDIX TABLE 1g. (Cont.)

TAXA	Lower Hot 17VII98	O'Harrel 29VII99	Kirman 18VIII99	Upper Owens 24VIII99	Upper Truckee Barton 29IX99
<i>Cocconeis placentula</i> Ehr. (Copl)					
<i>Cocconeis placentula</i> var. <i>euglypta</i> (Ehr.) Cl. (Cople)	1.0 (0.4)	2.9 (0.6)	2.8 (1.5)	12.8 (2.2)	1.4 (0.6)
<i>Cocconeis placentula</i> var. <i>lineata</i> (Ehr.) V.H. (Coppli)					
<i>Cocconeis placentula</i> var. <i>pseudolineata</i> Geitler (Coplps)					
<i>Ctenophora pulchella</i> (Ralfs) Williams & Round (Ctpu)	0.2 (0.2)				
<i>Cyclotella</i> sp. (Csp)					
<i>Cyclotella bodanica</i> Grun. (Cybo)					
<i>Cyclotella meneghiniana</i> Kütz. (Cyme)	0.2 (0.2)			1.2 (0.1)	0.3 (0.2)
<i>Cyclotella stelligera</i> Cl. & Grun. (Cyst)		0.4 (0.1)		0.3 (0.1)	1.0 (0.5)
<i>Cyclostephanos novaezeelandiae</i> (Cl.) Round (Cyno)					
<i>Cymatopleura solea</i> (Bréb) W. Sm. (Cyso)			0.3 (0.2)		
<i>Cymbella</i> sp. (Cysp)					
<i>Cymbella affinis</i> Kütz. (Cyaf)	0.1 (0.1)	0.6 (0.3)	1.6 (0.4)	0.1 (0.1)	0.8 (0.6)
<i>Cymbella aspera</i> (Ehr.) Cl. (Cyas)					
<i>Cymbella amphicephala</i> Naeg. ex. Kütz. (Cyam)					
<i>Cymbella cistula</i> (Ehr.) Kirch. (Cyci)					
<i>Cymbella gracilis</i> (Ehr.) Kütz. (Cygr)					
<i>Cymbella latens</i> Krasske (Cyla)					
<i>Cymbella mexicana</i> (Ehr.) Cl. (Cymex)				0.2 (0.2)	
<i>Cymbella minuta</i> Hilse ex. Rabh. (Cymi)		0.9 (0.2)	0.2 (0.2)		0.3 (0.3)
<i>Cymbella naviculiformis</i> (Auers.) Cl. (Cyna)					
<i>Cymbella prostrata</i> (Berk.) Cl. (Cypr)					
<i>Cymbella proxima</i> Reimer (Cypro)					
<i>Cymbella silesiaca</i> Bleisch in Rabh. (Cysi)		0.3 (0.1)			
<i>Cymbella tumida</i> (Breb.) Van Heurck (Cytu)			4.1 (0.4)		
<i>Cymbellonitzschia diluviana</i> Hust. (Cydi)					

APPENDIX TABLE 1g. (Cont.)

TAXA	Lower Hot 17VII98	O'Harrel 29VII99	Kirman 18VIII99	Upper Owens 24VIII99	Upper Truckee Barton 29IX99
<i>Denticula elegans</i> Kütz. (Deel)	0.2 (0.1)	1.0 (0.4)	0.4 (0.2)		
<i>Diatoma</i> sp. (Disp)					
<i>Diatoma hyemalis</i> (Roth) Heiberg (Duhy)					
<i>Diatoma mesodon</i> (Ehr.) Kütz. (Dime)					0.2 (0.2)
<i>Diatoma tenuis</i> Ag. (Dite)			0.1 (0.1)	0.1 (0.1)	
<i>Diatoma vulgaris</i> Bory (Divu)	0.2 (0.2)			1.3 (0.2)	
<i>Diploneis</i> sp. (Dipsp)					
<i>Diploneis elliptica</i> (Kütz.) Cl. (Diel)		0.3 (0.2)	0.1 (0.1)		0.3 (0.3)
<i>Diploneis oblongella</i> (Naeg. ex. Kütz) Ross (Diob)					
<i>Encyonopsis microcephala</i> (Grun.) Krammer (Enmi)		0.4 (0.1)			
<i>Eolimna minima</i> (Kütz.) Lange-Bertalot (Eimi)	0.2 (0.2)	3.4 (0.4)		0.4 (0.3)	1.4 (0.2)
<i>Epithemia</i> sp. (Epsp)					
<i>Epithemia adnata</i> (Kütz.) Bréb. (Epad)					9.3 (0.7)
<i>Epithemia argus</i> (Ehr.) Kütz. (Epar)					
<i>Epithemia sorex</i> Kütz. (Epsa)	4.4 (3.6)	0.7(0.7)	5.7 (0.9)	28.5 (4.5)	34.8 (2.0)
<i>Epithemia turgida</i> (Ehr.) Kütz. (Eptu)	3.5 (0.6)	0.3 (0.2)	1.2 (0.8)	1.9 (0.5)	0.1 (0.1)
<i>Eunotia</i> sp. (Eusp)					
<i>Eunotia bilunaris</i> (Ehr.) Mills. (Eubi)	0.2 (0.2)		0.5 (0.1)	0.2 (0.1)	0.4 (0.3)
<i>Fallacia pygmaea</i> (Kütz.) Stickle & Mann (Fapy)					
<i>Fragilaria arcus</i> (Ehr.) Cl. (Frar)					
<i>Fragilaria brevistriata</i> (Grun.) Williams & Round (Frbr)		1.3 (0.6)	0.7 (0.4)	0.3(0.1)	0.4 (0.1)
<i>Fragilaria capucina</i> Desm. (Frca)	2.4 (0.2)	4.0 (0.4)	1.3 (0.8)	1.9 (0.6)	7.9 (1.5)
<i>Fragilaria capucina</i> var. <i>capitellata</i> (Grun.) Lange-Bertalot (Frcaca)					
<i>Fragilaria capucina</i> var. <i>gracilis</i> (Oestrup) Hust. (Frcag)					

APPENDIX TABLE 1g. (Cont.)

TAXA	Lower Hot 17VII98	O'Harrel 29VII99	Kirman 18VIII99	Upper Owens 24VIII99	Upper Truckee Barton 29IX99
<i>Fragilaria capucina</i> var. <i>rumpens</i> (Kütz) Lange-Bertalot (Frcaru)					
<i>Fragilaria capucina</i> var. <i>vaucheriae</i> (Kütz) Lange-Bertalot (Frcava)	2.1 (0.2)	9.1 (1.8)	1.7 (0.2)	1.2 (0.1)	3.7 (0.2)
<i>Fragilaria crotonensis</i> Kitt. (Frcr)					
<i>Fragilaria leptostauron</i> (Ehr.) Hust. (Frle)				0.3 (0.1)	
<i>Fragilaria parasitica</i> (W. Sm.) Grun. (Frpa)					
<i>Fragilaria parasitica</i> var. <i>subconstricta</i> Grun. (Frsu)					
<i>Fragilaria robusta</i> (Ralfs.) Lange-Bertalot (Frro)					
<i>Fragilaria tenera</i> (W. Sm.) Lange-Bertalot (Frte)					0.8 (0.5)
<i>Fragilaria ulna</i> (Nitzs.) Lange-Bertalot (Frul)	1.8 (0.2)	1.5 (0.8)	11.8 (0.8)	1.8 (0.3)	1.2 (0.4)
<i>Fragilaria ulna</i> var. <i>acus</i> (Kütz.) Lange-Bertalot (Frar)	0.8 (0.5)				
<i>Fragilariforma virescens</i> (Ralfs) Williams & Round (Frv)					
<i>Frustulia rhomboides</i> (Ehr.) DeToni (Frrh)					
<i>Frustulia vulgaris</i> (Thwaites) DeT. (Frvu)		0.1 (0.1)	0.1 (0.1)	0.2 (0.1)	0.1 (0.1)
<i>Gomphoneis herculeana</i> (Ehr.) Cl. (Gohe)	0.2 (0.2)			1.1 (0.3)	
<i>Gomphonema</i> sp. (Gosp)					
<i>Gomphonema acuminatum</i> Ehr. (Goac)	0.5 (0.3)		0.9 (0.1)		
<i>Gomphonema affine</i> Kütz. (Goaf)					
<i>Gomphonema angustum</i> Ag. (Goan)		0.4 (0.2)		0.1 (0.1)	
<i>Gomphonema clavatum</i> Ehr. (Gocl)					0.3 (0.3)

APPENDIX TABLE 1g. (Cont.)

TAXA	Lower Hot 17VII98	O'Harrel 29VII99	Kirman 18VIII99	Upper Owens 24VIII99	Upper Truckee Barton 29IX99
<i>Gomphonema clevei</i> Fricke (Gocl)					
<i>Gomphonema gracile</i> Ehr. (Gogr)					
<i>Gomphonema minuta</i> (C. Ag.) C. Ag. (Gomi)					
<i>Gomphonema olivaceum</i> (Horn.) Bréb. (Gool)					
<i>Gomphonema parvulum</i> Kütz. (Gopa)	0.5 (0.1)	1.2 (0.8)	0.4 (0.1)	0.1 (0.1)	
<i>Gomphonema truncatum</i> (Cl. Ag.) Cl. Ag. (Gotr)	0.1 (0.1)		0.6 (0.2)	1.1 (0.2)	
<i>Gomphonema ventricosum</i> Greg. (Gove)					
<i>cf. Grammatophora</i> (Gr)		0.63 (0.2)	0.1 (0.1)		
<i>Gyrosigma</i> sp. (Gysp)					
<i>Gyrosigma acummatum</i> (Kütz.) Rabh. (Gyac)		0.1 (0.1)			
<i>Hantzschia amphioxys</i> (Ehr.) Grun. (Haam)	0.1 (0.1)	2.0 (0.7)		0.3 (0.1)	0.2 (0.1)
<i>Hippodonta capitata</i> Ehr. (Naca)					0.1 (0.1)
<i>Karayevia clevei</i> (Grun.) Round & Bukhtyarova (Kacl)		0.7 (0.2)		0.2 (0.1)	0.1 (0.1)
<i>Luticola mutica</i> (Kütz.) Mann (Lumu)				0.2 (0.1)	
<i>Mastogloia smithii</i> Thwaites (Masm)					
<i>Melosira varians</i> Ag. (Meva)		0.4 (0.2)	0.7 (0.3)	0.2 (0.1)	0.3 (0.1)
<i>Meridion circulare</i> (Grev.) Ag. (Meci)	0.6 (0.3)	1.6 (0.3)	1.5 (0.6)		0.1 (0.1)
<i>Meridion circulare</i> var. <i>constrictum</i> (Ralfs.) Van Heurck (Mecico)					
<i>Navicula</i> sp. (Nasp)					
<i>Navicula angusta</i> Grun. (Naan)					
<i>Navicula arenaria</i> Donk. (Naar)					
<i>Navicula arvensis</i> Hust. (Naarv)					
<i>Navicula bryophila</i> Boye Petersen (Nabr)					
<i>Navicula capitatoradiata</i> Germain (Nacap)					

APPENDIX TABLE 1g (Cont.)

TAXA	Lower Hot 17VII98	O'Harrel 29VII99	Kirman 18VIII99	Upper Owens 24VIII99	Upper Truckee Barton 29IX99
<i>Navicula cari</i> Ehr. (Nacai)					
<i>Navicula cincta</i> (Ehr.) Ralfs (Nacin)	0.4 (0.3)	0.3 (0.3)			
<i>Navicula clematis</i> Grun (Nacl)					
<i>Navicula cryptocephala</i> Kütz. (Nacr)			0.8 (0.5)	0.1 (0.1)	0.3 (0.2)
<i>Navicula cryptonella</i> Lange-Bertalot (Nacry)		0.1 (0.1)	1.3 (0.5)	1.2 (0.1)	1.3 (0.4)
<i>Navicula cuspidata</i> Kütz. (Kütz.) (Nacu)					
<i>Navicula decussis</i> Østrup. (Nade)					0.6 (0.3)
<i>Navicula dentata</i> Hust. (Naden)					
<i>Navicula elginensis</i> (Greg.) Ralfs.n (Nael)					
<i>Navicula erifuga</i> Lange-Bertalot (Naer)					
<i>Navicula expecta</i> Van Land. (Naex)		0.5 (0.2)			
<i>Navicula heufleriana</i> (Grun.) Grun. (Nahe)					
<i>Navicula incerta</i> Lange-Bertalot (Nain)					
<i>Navicula indifferens</i> Hust. (Naind)					
<i>Navicula lanceolata</i> (Ag.) Kütz. (Nala)		0.8 (0.2)	1.6 (0.3)	0.2 (0.2)	
<i>Navicula libonensis</i> Schoemann (Nali)					
<i>Navicula minuscula</i> Grun. (Namu)			0.5 (0.2)	0.2 (0.2)	0.3 (0.1)
<i>Navicula protracta</i> (Grun.) Cl. (Napr)					
<i>Navicula radiosa</i> Kütz. (Nara)					
<i>Navicula reinhardtii</i> Grun. (Nare)					0.2 (0.2)
<i>Navicula rhynchocephala</i> Kütz. (Narh)					
<i>Navicula rotundra</i> Hust. (Naro)					
<i>Navicula schoenfeldii</i> Hust. (Nasc)					
<i>Navicula schroeterii</i> Meister (Nasch)	0.4 (0.3)	0.7 (0.3)	0.8 (0.2)	0.1 (0.1)	

APPENDIX TABLE 1g. (Cont.)

TAXA	Lower Hot 17VII98	O'Harrel 29VII99	Kirman 18VIII99	Upper Owens 24VIII99	Upper Truckee Barton 29IX99
<i>Navicula subminiscula</i> (Grun.) Lange-Bertalot (Nasb)					
<i>Navicula subrhyncocephala</i> Hust. (Nasub)					
<i>Navicula subrotundata</i> Hust. (Nasubr)		1.4 (0.9)	0.1 (0.1)		
<i>Navicula tenelloides</i> Hust. (Nate)		0.6 (0.1)			
<i>Navicula tridentula</i> Krasske (Natri)					
<i>Navicula tripunctata</i> (O.F. Müll) Bory (Natr)			0.2 (0.2)	0.4 (0.1)	
<i>Navicula variostrata</i> Krasske (Nava)				0.1 (0.1)	
<i>Navicula veneta</i> Kütz. (Nave)	1.0 (0.2)	1.0 (0.4)		0.3 (0.1)	0.1 (0.1)
<i>Navicula viridula</i> (Kütz.) Kütz. (Navi)					
<i>Nitzschia acicularis</i> W. Sm. (Niac)			0.3 (0.2)		0.2 (0.1)
<i>Nitzschia amphibia</i> Grun. (Niam)	1.4 (0.6)	1.8 (0.7)	2.2 (0.9)	1.4 (0.4)	
<i>Nitzschia compressa</i> (Bailey) Boyer (Nico)					
<i>Nitzschia dissipata</i> (Kütz.) Kütz. (Nidi)	1.6 (0.1)	1.1 (0.4)	2.3 (0.6)	4.7 (1.3)	0.9 (0.2)
<i>Nitzschia epithemoides</i> Grun. (Niep)					
<i>Nitzschia filiformis</i> (W. Sm.) Hust. (Nifi)					
<i>Nitzschia frustulum</i> Kütz. (Nifr)	8.2 (1.9)	5.6 (1.7)	2.9 (0.7)	8.8 (1.7)	3.3 (0.6)
<i>Nitzschia hybrida</i> Grun. (Nihy)					
<i>Nitzschia inconspicua</i> Grun. (Niin)					
<i>Nitzschia linearis</i> W. Sm. (Nili)	0.2 (0.2)	1.3 (0.5)	1.2 (0.4)	0.7 (0.4)	0.2 (0.1)
<i>Nitzschia palea</i> (Kütz.) W. Sm. (Nipa)	6.7 (1.7)	1.0 (0.3)	7.5 (1.7)	3.9 (1.5)	9.8 (1.0)
<i>Nitzschia sigma</i> (Kütz.) W. Sm. (Nisi)	0.1 (0.1)				
<i>Nitzschia sigmoidea</i> (Nitz.) W. Sm. (Nisig)					
<i>Nitzschia sinuata</i> var. <i>delognei</i> (Grun.) Lange-Bertalot (Niside)					
<i>Nitzschia umbonata</i> (Ehr.) Lange-Bertalot (Nium)					

APPENDIX TABLE 1g. (Cont.)

TAXA	Lower Hot 17VII98	O'Harrel 29VII99	Kirman 18VIII99	Upper Owens 24VIII99	Upper Truckee Barton 29IX99
<i>Nitzschia vermicularis</i> (Kütz.) Hantz. (Nive)			0.7 (0.2)		
<i>Opephora olsenii</i> Moller (Opol)		0.2 (0.2)	0.6 (0.1)	0.3 (0.1)	0.1 (0.1)
<i>Pinnularia</i> sp. (Pisp)					
<i>Pinnularia borealis</i> Ehr. (Pibo)					0.1 (0.1)
<i>Pinnularia brevicostata</i> Cl. (Pibr)					
<i>Pinnularia divergens</i> W. Sm. (Pidi)	0.2 (0.1)	0.5 (0.1)			0.3 (0.3)
<i>Pinnularia lagerstedtii</i> (Cl.) Cl.- Euler (Pila)					
<i>Pinnularia maior</i> (Kütz.) Rabh. (Pima)					
<i>Pinnularia obscura</i> Krasske (Piob)					0.1 (0.1)
<i>Pinnularia stromatophora</i> (Grun.) Cl. (Pist)			0.2 (0.2)		
<i>Pinnularia subcapitata</i> Greg. (Pisu)		0.4 (0.2)	0.1 (0.1)		0.1 (0.1)
<i>Pinnularia viridis</i> (Nitz.) Ehr. (Pivi)					0.3 (0.1)
<i>Planothidium delicatula</i> (Kütz.) Round & Bukhtiyarova (Plde)	1.0 (0.3)	1.6 (0.5)		2.0 (0.1)	0.1 (0.1)
<i>Planothidium lanceolata</i> (Breb.) Round & Bukhtiyarova (Plla)	3.4 (0.7)	3.9 (0.5)	7.8 (1.2)	3.0 (0.1)	5.1 (0.9)
<i>Planothidium lanceolata</i> var. <i>dubia</i> (Grun.) Lange-Bertalot (Plladu)		0.4 (0.4)		0.3 (0.2)	
<i>Reimeria sinuata</i> (Greg.) Kociolek & Stoermer (Resi)	0.2 (0.2)	0.1 (0.1)		0.1 (0.1)	0.3 (0.2)
<i>Rhopalodia gibba</i> (Ehr.) O. Müll. (Rhgi)	3.0 (1.6)	0.4 (0.2)	2.1 (0.2)	0.9 (0.4)	0.6 (0.1)
<i>Rhopalodia gibberula</i> (Ehr.) O. Müll. (Rhgib)		0.1 (0.1)	0.2 (0.1)	0.2 (0.1)	
<i>Rhoicosphenia abbreviata</i> (Ag.) Lange-Bertalort (Rhab)	1.3 (0.8)	1.0 (0.4)	2.2 (0.6)	1.6 (0.3)	0.9 (0.7)
<i>Sellophora pupula</i> (Kütz.) Mereschkowsky (Sepu)		0.9 (0.3)	0.5 (0.2)		0.1 (0.1)
<i>Sellophora pupula</i> var. <i>psuedopupula</i> (Krasske) Mereschkowsky (Sepups)					

APPENDIX TABLE 1g. (Cont.)

TAXA	Lower Hot 17VII98	O'Harrel 29VII99	Kirman 18VIII99	Upper Owens 24VIII99	Upper Truckee Barton 29IX99
<i>Sellaphora pygmaea</i> (Kütz.) Mereschkowsky (Sepy)					0.2 (0.2)
<i>Sellaphora seminulum</i> (Grun.) Mann (Sese)					
<i>Stauroneis anceps</i> Ehr. (Stan)					
<i>Stauroneis kriegerii</i> Patrick (Stkr)					
<i>Stauroneis phoenicenteron</i> (Nitz.) Ehr. (Stph)			0.2 (0.2)		
<i>Stauroneis smithii</i> Grun. (Stsm)			0.1 (0.1)		
<i>Staurosira construens</i> (Ehr.) Hust. (Frc)	6.2 (1.1)	1.5 (0.6)	5.1 (2.3)	1.1 (0.1)	0.3 (0.3)
<i>Staurosira construens</i> f. <i>binodis</i> (Ehr.) Hust. (Frcobi)	7.6 (1.6)	3.4 (1.6)	0.8 (0.8)	2.4 (0.2)	
<i>Staurosira construens</i> var. <i>venter</i> (Ehr.) Hust. (Frve)	35.9 (4.3)	4.8 (1.2)	2.7 (1.1)	3.3 (1.0)	0.4 (0.2)
<i>Staurosirella pinnata</i> (Ehr.) Williams & Round (Stpi)	0.8 (0.5)	0.7 (0.1)		0.3 (0.1)	
<i>Stephanodiscus hantzschii</i> Grun. (in Cl. & Grun.) (Stha)				1.2 (0.3)	
<i>Stephanodiscus niagare</i> Ehr. (Stni)					
<i>Surirella angustata</i> Kütz. (Syan)			0.9 (0.6)		
<i>Surirella brebissonii</i> Kramm & Lange-Bertalot (Subr)			0.3 (0.2)		
<i>Surirella ovalis</i> Breb. (Suov)					
<i>Surirella striatula</i> Turp. (Sust)					
<i>Surirella tenera</i> Greg. (Sute)					
<i>Tabellaria flocculosa</i> (Roth) Grun. (Tafe)				0.1 (0.1)	0.1 (0.1)
<i>Tetracyclus rupestris</i> (Braun.) Grun. (Teru)					

APPENDIX TABLE 1h. Relative % (\pm SE) frequency of diatoms and collection dates for selected streams in the Lahontan Basin, USA. Species acronyms are in parentheses.

TAXA	Swauger 17VIII99	West Walker 20 VIII99	Upper Truckee Forest 30IX99
<i>Achnanthes exigua</i> Grun. (Acex)			
<i>Achnanthes hungarica</i> Grun. (Achu)		0.03 (0.3)	0.2 (0.2)
<i>Achnanthes laterostrata</i> Hust. (Acla)			
<i>Achnanthes linearis</i> (W. Sm.) Grun. (Acli)			
<i>Achnantheidium minutissima</i> (Kütz.) Czar. (Acmi)	3.3 (1.6)	4.2 (139)	17.1 (3.5)
<i>Amphipleura pellucida</i> (Kütz.) Kütz. (Ampel)			
<i>Amphora coffeaeformis</i> (Ag.) Kütz. (Amco)			
<i>Amphora ovalis</i> (Kütz.) Kütz. (Amov)	0.7 (0.7)		0.2 (0.2)
<i>Amphora pediculus</i> (Kütz.) Grun. (Ampe)			0.7 (0.4)
<i>Amphora veneta</i> Kütz. (Amve)			
<i>Anomoeoneis sphaerophora</i> f. <i>costata</i> Kütz.) Schmid. (Anspco)			
<i>Anomoeoneis vitrea</i> (Grun.) Grun. (Anvi)	0.4 (0.4)	0.3 (0.3)	
<i>Asterionella formosa</i> Hass. (Asfo)			
<i>Aulacoseira ambigua</i> (Grun.) Simon. (Auam)	2.4 (1.7)		1.8 (0.9)
<i>Aulacoseira islandica</i> O. Muell. (Auis)			
<i>Aulacoseira italica</i> (Ehr.) Simon. (Auit)			
<i>Caloneis amphibaena</i> (Bory) Cl. (Caam)			
<i>Caloneis bacillum</i> (Grun.) Cl. (Caba)			
<i>Caloneis molaris</i> (Grun.) Krammer (Camo)			
<i>Caloneis schumanniana</i> (Grun.) Cl. (Case)			
<i>Caloneis silicula</i> (Ehr.) Cl. (Casi)			
<i>Caloneis sublinearis</i> (Grun.) Kramme (Casu)			0.2 (0.2)
<i>Caloneis tenuis</i> (Greg.) Krammer (Cate)			
<i>Cocconeis pediculus</i> Kütz. (Cope)	0.3 (0.3)		0.5 (0.4)

APPENDIX TABLE 1h. (Cont.)

TAXA	Swauger 17VIII99	West Walker 20 VIII99	Upper Truckee Forest 30IX99
<i>Cocconeis placentula</i> Ehr. (Copl)			
<i>Cocconeis placentula</i> var. <i>euglypta</i> (Ehr.) Cl. (Cople)	1.4 (0.7)	1.4 (0.6)	30.6 (2.7)
<i>Cocconeis placentula</i> var. <i>lineata</i> (Ehr.) V.H. (Coplli)			
<i>Cocconeis placentula</i> var. <i>pseudolineata</i> Geitler (Coplps)			
<i>Ctenophora pulchella</i> (Ralfs) Williams & Round (Ctpu)			
<i>Cyclotella</i> sp. (Csp)			
<i>Cyclotella bodanica</i> Grun. (Cybo)			
<i>Cyclotella meneghiniana</i> Kütz. (Cyme)			
<i>Cyclotella stelligera</i> Cl. & Grun. (Cyst)			0.3 (0.2)
<i>Cyclostephanos novaezeelandiae</i> (Cl.) Round (Cyno)			
<i>Cymatopleura solea</i> (Bréb) W. Sm. (Cyso)			
<i>Cymbella</i> sp. (Cysp)			
<i>Cymbella affinis</i> Kütz. (Cyaf)	2.6 (0.8)	2.4 (1.3)	1.5 (0.6)
<i>Cymbella aspera</i> (Ehr.) Cl. (Cyas)			
<i>Cymbella amphicephala</i> Naeg. ex. Kütz. (Cyam)			
<i>Cymbella cistula</i> (Ehr.) Kirch. (Cyci)			0.2 (0.2)
<i>Cymbella gracilis</i> (Ehr.) Kütz. (Cygr)			
<i>Cymbella latens</i> Krasske (Cyla)			
<i>Cymbella mexicana</i> (Ehr.) Cl. (Cymex)		2.4 (0.2)	
<i>Cymbella minuta</i> Hilse ex. Rabh. (Cymi)			0.2 (0.2)
<i>Cymbella naviculiformis</i> (Auers.) Cl. (Cyna)			
<i>Cymbella prostrata</i> (Berk.) Cl. (Cypr)			
<i>Cymbella proxima</i> Reimer (Cypro)	0.4 (0.4)		
<i>Cymbella silesiaca</i> Bleisch in Rabh. (Cysi)			
<i>Cymbella tumida</i> (Breb.) Van Heurck (Cytu)		0.7 (0.4)	0.5 (0.1)
<i>Cymbellonitzschia diluviana</i> Hust. (Cydi)			

APPENDIX TABLE 1h. (Cont.)

TAXA	Swauger 17VIII99	West Walker 20 VIII99	Upper Truckee Forest 30IX99
<i>Denticula elegans</i> Kütz. (Deel)			0.2 (0.2)
<i>Diatoma</i> sp. (Disp)			
<i>Diatoma hyemalis</i> (Roth) Heiberg (Duhy)	2.9 (1.2)	0.3 (0.3)	1.2 (0.6)
<i>Diatoma mesodon</i> (Ehr.) Kütz. (Dime)	1.3 (1.3)		
<i>Diatoma tenuis</i> Ag. (Dite)			
<i>Diatoma vulgaris</i> Bory (Divu)		0.7 (0.7)	
<i>Diploneis</i> sp. (Dipsp)			
<i>Diploneis elliptica</i> (Kütz.) Cl. (Diel)			
<i>Diploneis oblongella</i> (Naeg. ex. Kütz) Ross (Diob)			
<i>Encyonopsis microcephala</i> (Grun.) Krammer (Enmi)			
<i>Eolimna minima</i> (Kütz.) Lange-Bertalot (Eimi)	1.0 (0.6)	0.8 (0.4)	0.7 (0.3)
<i>Epithemia</i> sp. (Epsp)			
<i>Epithemia adnata</i> (Kütz.) Bréb. (Epad)			
<i>Epithemia argus</i> (Ehr.) Kütz. (Epar)			
<i>Epithemia sorex</i> Kütz. (Epsa)	0.3 (0.3)	28.0 (2.7)	0.9 (0.5)
<i>Epithemia turgida</i> (Ehr.) Kütz. (Eptu)			0.6 (0.3)
<i>Eunotia</i> sp. (Eusp)			1.3 (0.5)
<i>Eunotia bilunaris</i> (Ehr.) Mills. (Eubi)	5.0 (1.8)		
<i>Fallacia pygmaea</i> (Kütz.) Stickle & Mann (Fapy)			
<i>Fragilaria arcus</i> (Ehr.) Cl. (Frar)	1.6 (0.7)	2.1 (0.5)	2.0 (0.4)
<i>Fragilaria brevistriata</i> (Grun.) Williams & Round (Frbr)			
<i>Fragilaria capucina</i> Desm. (Frca)	4.1 (1.5)	1.2 (0.8)	1.5 (1.0)
<i>Fragilaria capucina</i> var. <i>capitellata</i> (Grun.) Lange-Bertalot (Frcaca)			
<i>Fragilaria capucina</i> var. <i>gracilis</i> (Oestrup) Hust. (Frcag)			

APPENDIX TABLE 1h. (Cont.)

TAXA	Swauger 17VIII99	West Walker 20 VIII99	Upper Truckee Forest 30IX99
<i>Fragilaria capucina</i> var. <i>rumpens</i> (Kütz) Lange-Bertalot (Frcaru)			
<i>Fragilaria capucina</i> var. <i>vaucheriae</i> (Kütz) Lange-Bertalot (Frcava)	16.8 (2.2)	1.6 (0.5)	4.5 (0.8)
<i>Fragilaria crotonensis</i> Kitt. (Frcr)			
<i>Fragilaria leptostauron</i> (Ehr.) Hust. (Frle)			
<i>Fragilaria parasitica</i> (W. Sm.) Grun. (Frpa)			
<i>Fragilaria parasitica</i> var. <i>subconstricta</i> Grun. (Frsu)			
<i>Fragilaria robusta</i> (Ralfs.) Lange-Bertalot (Frro)			
<i>Fragilaria tenera</i> (W. Sm.) Lange-Bertalot (Frte)			
<i>Fragilaria ulna</i> (Nitzs.) Lange-Bertalot (Frul)	1.8 (0.3)	11.2 (4.5)	1.9 (0.4)
<i>Fragilaria ulna</i> var. <i>acus</i> (Kütz.) Lange-Bertalot (Frar)			
<i>Fragilariforma virescens</i> (Ralfs) Williams & Round (Frvi)			
<i>Frustulia rhomboides</i> (Ehr.) DeToni (Frrh)			0.3 (0.3)
<i>Frustulia vulgaris</i> (Thwaites) DeT. (Frvu)			
<i>Gomphoneis herculeana</i> (Ehr.) Cl. (Gohe)	0.4 (0.4)		0.6 (0.3)
<i>Gomphonema</i> sp. (Gosp)			
<i>Gomphonema accuminatum</i> Ehr. (Goac)			
<i>Gomphonema affine</i> Kütz. (Goaf)			
<i>Gomphonema angustum</i> Ag. (Goan)		0.3 (0.3)	1.5 (0.9)
<i>Gomphonema clavatum</i> Ehr. (Gocl)			1.0 (0.2)

APPENDIX TABLE 1h. (Cont.)

TAXA	Swauger 17VIII99	West Walker 20 VIII99	Upper Truckee Forest 30IX99
<i>Gomphonema clevei</i> Fricke (Gocl)			
<i>Gomphonema gracile</i> Ehr. (Gogr)			
<i>Gomphonema minuta</i> (C. Ag.) C. Ag. (Gomi)		10.6 (3.3)	
<i>Gomphonema olivaceum</i> (Horn.) Bréb. (Gool)			
<i>Gomphonema parvulum</i> Kütz. (Gopa)	1.8 (1.3)	1.0 (0.2)	0.3 (0.3)
<i>Gomphonema truncatum</i> (Cl. Ag.) Cl. Ag. (Gotr)			
<i>Gomphonema ventricosum</i> Greg. (Gove)			
cf. <i>Grammatophora</i> (Gr)			
<i>Gyrosigma</i> sp. (Gysp)			
<i>Gyrosigma acumdatum</i> (Kütz.) Rabh. (Gyac)			
<i>Hantzschia amphioxys</i> (Ehr.) Grun. (Haam)		0.3 (0.3)	0.2 (0.2)
<i>Hippodonta capitata</i> Ehr. (Naca)			0.4 (0.2)
<i>Karayevia clevei</i> (Grun.) Round & Bukhtyarova (Kacl)			
<i>Luticola mutica</i> (Kütz.) Mann (Lumu)			
<i>Mastogloia smithii</i> Thwaites (Masm)			
<i>Melosira varians</i> Ag. (Meva)			1.5 (0.5)
<i>Meridion circulare</i> (Grev.) Ag. (Meci)	1.1 (0.6)		0.1 (0.1)
<i>Meridion circulare</i> var. <i>constrictum</i> (Ralfs.) Van Heurck (Mecico)			
<i>Navicula</i> sp. (Nasp)		1.0 (0.2)	
<i>Navicula angusta</i> Grun. (Naan)		1.0 (0.6)	
<i>Navicula arenaria</i> Donk. (Naar)			1.0 (0.6)
<i>Navicula arvensis</i> Hust. (Naarv)			
<i>Navicula bryophila</i> Boye Petersen (Nabr)			
<i>Navicula capitatoradiata</i> Germain (Nacap)			

APPENDIX TABLE 1h. (Cont.)

TAXA	Swauger 17VIII99	West Walker 20 VIII99	Upper Truckee Forest 30IX99
<i>Navicula cari</i> Ehr. (Nacai)			
<i>Navicula cincta</i> (Ehr.) Ralfs (Nacin)			
<i>Navicula clematis</i> Grun (Nacl)			
<i>Navicula cryptocephala</i> Kütz. (Nacr)	0.7 (0.4)	1.4 (0.6)	0.5 (0.3)
<i>Navicula cryptonella</i> Lange-Bertalot (Nacry)	8.8 (2.8)	1.7 (1.3)	4.7 (1.4)
<i>Navicula cuspidata</i> Kütz. (Kütz.) (Nacu)			
<i>Navicula decussis</i> Østrup. (Nade)			0.1 (0.1)
<i>Navicula dentata</i> Hust. (Naden)			
<i>Navicula elginensis</i> (Greg.) Ralfs.n (Nael)			
<i>Navicula erifuga</i> Lange-Bertalot (Naer)			
<i>Navicula expecta</i> Van Land. (Naex)			
<i>Navicula heufleriana</i> (Grun.) Grun. (Nahe)		5.1 (2.8)	0.2 (0.2)
<i>Navicula incerta</i> Lange-Bertalot (Nain)			
<i>Navicula indifferens</i> Hust. (Naind)	0.8 (0.8)		
<i>Navicula lanceolata</i> (Ag.) Kütz. (Nala)			
<i>Navicula libonensis</i> Schoemann (Nali)			
<i>Navicula minuscula</i> Grun. (Namu)	3.9 (1.4)	0.3 (0.3)	1.0 (0.8)
<i>Navicula protracta</i> (Grun.) Cl. (Napr)			
<i>Navicula radiosa</i> Kütz. (Nara)			
<i>Navicula reinhardtii</i> Grun. (Nare)			
<i>Navicula rhynchocephala</i> Kütz. (Narh)			
<i>Navicula rotundra</i> Hust. (Naro)			
<i>Navicula schoenfeldii</i> Hust. (Nasc)			
<i>Navicula schroeterii</i> Meister (Nasch)			

APPENDIX TABLE 1h (Cont.)

TAXA	Swauger 17VIII99	West Walker 20 VIII99	Upper Truckee Forest 30IX99
<i>Navicula subminiscula</i> (Grun.) Lange-Bertalot (Nasb)			0.9 (0.3)
<i>Navicula subrhyncocephala</i> Hust. (Nasub)			
<i>Navicula subrotundata</i> Hust. (Nasubr)			
<i>Navicula tenelloides</i> Hust. (Nate)			0.8 (0.4)
<i>Navicula tridentula</i> Krasske (Natri)			
<i>Navicula tripunctata</i> (O.F. Müll) Bory (Natr)	0.4 (0.4)		
<i>Navicula variostrata</i> Krasske (Nava)			
<i>Navicula veneta</i> Kütz. (Nave)	0.4 (0.4)	0.3 (0.3)	1.4 (0.3)
<i>Navicula viridula</i> (Kütz.) Kütz. (Navi)			
<i>Nitzschia acicularis</i> W. Sm. (Niac)			
<i>Nitzschia amphibia</i> Grun. (Niam)	2.6 (1.0)		0.8 (0.3)
<i>Nitzschia compressa</i> (Bailey) Boyer (Nico)			
<i>Nitzschia dissipata</i> (Kütz.) Kütz. (Nidi)	7.9 (1.5)	4.3 (1.1)	4.3 (0.6)
<i>Nitzschia epithemoides</i> Grun. (Niep)			
<i>Nitzschia filiformis</i> (W. Sm.) Hust. (Nifi)			0.1 (0.1)
<i>Nitzschia frustulum</i> Kütz. (Nifr)	2.1 (1.0)	3.1 (0.5)	1.4 (0.6)
<i>Nitzschia hybrida</i> Grun. (Nihy)	1.5 (0.3)		1.6 (0.5)
<i>Nitzschia inconspicua</i> Grun. (Niin)	0.7 (0.4)		
<i>Nitzschia linearis</i> W. Sm. (Nili)		0.3 (0.3)	
<i>Nitzschia palea</i> (Kütz.) W. Sm. (Nipa)	1.1 (0.6)	2.3 (0.7)	0.5 (0.4)
<i>Nitzschia sigma</i> (Kütz.) W. Sm. (Nisi)			
<i>Nitzschia sigmoidea</i> (Nitz.) W. Sm. (Nisig)			
<i>Nitzschia sinuata</i> var. <i>delognei</i> (Grun.) Lange-Bertalot (Niside)			
<i>Nitzschia umbonata</i> (Ehr.) Lange-Bertalot (Nium)			

APPENDIX TABLE 1h. (Cont.)

TAXA	Swauger 17VIII99	West Walker 20 VIII99	Upper Truckee Forest 30IX99
<i>Nitzschia vermicularis</i> (Kütz.) Hantz. (Nive)			
<i>Opephora olsenii</i> Moller (Opol)			
<i>Pinnularia</i> sp. (Pisp)			
<i>Pinnularia borealis</i> Ehr. (Pibo)			
<i>Pinnularia brevicostata</i> Cl. (Pibr)			
<i>Pinnularia divergens</i> W. Sm. (Pidi)			
<i>Pinnularia lagerstedtii</i> (Cl.) Cl.- Euler (Pila)			
<i>Pinnularia maior</i> (Kütz.) Rabh. (Pima)			
<i>Pinnularia obscura</i> Krasske (Piob)			
<i>Pinnularia stromatophora</i> (Grun.) Cl. (Pist)			
<i>Pinnularia subcapitata</i> Greg. (Pisu)			
<i>Pinnularia viridis</i> (Nitz.) Ehr. (Pivi)			0.6 (0.3)
<i>Planothidium delicatula</i> (Kütz.) Round & Bukhtiyarova (Plde)			
<i>Planothidium lanceolata</i> (Breb.) Round & Bukhtiyarova (Plla)	15.1 (0.6)	6.0 (3.3)	3.4 (0.5)
<i>Planothidium lanceolata</i> var. <i>dubia</i> (Grun.) Lange-Bertalot (Plladu)			
<i>Reimeria sinuata</i> (Greg.) Kociolek & Stoermer (Resi)	2.2 (0.6)	0.6 (0.3)	0.2 (0.2)
<i>Rhopalodia gibba</i> (Ehr.) O. Müll. (Rhgi)		0.2 (0.2)	
<i>Rhopalodia gibberula</i> (Ehr.) O. Müll. (Rhgi)			
<i>Rhoicosphenia abbreviata</i> (Ag.) Lange-Bertalort (Rhab)	1.5 (0.9)	0.8 (0.4)	0.5 (0.1)
<i>Sellophora pupula</i> (Kütz.) Mereschkowsky (Sepu)		1.1 (0.7)	0.2 (0.2)
<i>Sellophora pupula</i> var. <i>psuedopupula</i> (Krasske) Mereschkowsky (Sepups)			

APPENDIX TABLE 1h. (Cont.)

TAXA	Swauger 17VIII99	West Walker 20 VIII99	Upper Truckee Forest 30IX99
<i>Sellaphora pygmaea</i> (Kütz.) Mereschkowsky (Sepy)			
<i>Sellaphora seminulum</i> (Grun.) Mann (Sese)			
<i>Stauroneis anceps</i> Ehr. (Stan)			0.2 (0.2)
<i>Stauroneis kriegerii</i> Patrick (Stkr)			
<i>Stauroneis phoenicenteron</i> (Nitz.) Ehr. (Stph)			
<i>Stauroneis smithii</i> Grun. (Stsm)			
<i>Staurosira construens</i> (Ehr.) Hust. (Frc)			
<i>Staurosira construens</i> f. <i>binodis</i> (Ehr.) Hust. (Frcobi)			0.2 (0.2)
<i>Staurosira construens</i> var. <i>venter</i> (Ehr.) Hust. (Frve)			
<i>Staurosirella pinnata</i> (Ehr.) Williams & Round (Stpi)		0.7 (0.7)	
<i>Stephanodiscus hantzschii</i> Grun. (in Cl. & Grun.) (Stha)			
<i>Stephanodiscus niagare</i> Ehr. (Stni)			
<i>Surirella angustata</i> Kütz. (Syan)	0.7 (0.7)		0.5 (0.1)
<i>Surirella brebissonii</i> Kramm & Lange-Bertalot (Subr)			
<i>Surirella ovalis</i> Breb. (Suov)			
<i>Surirella striatula</i> Turp. (Sust)			
<i>Surirella tenera</i> Greg. (Sute)			
<i>Tabellaria flocculosa</i> (Roth) Grun. (Tafe)			
<i>Tetracyclus rupestris</i> (Braun.) Grun. (Teru)			

APPENDIX TABLE 1i. Relative % (\pm SE) frequency of diatoms and collection dates for selected streams in the Lahontan Basin, USA. Species acronyms are in parentheses.

TAXA	Hidden Valley 30 VII 01	Trout Cr (BF) 11VII01	Robinson Cr 31VIII01	Deep Creek 27VVIII01	Heavenly Valley 30VII01
<i>Achnanthes exigua</i> Grun.					
<i>Achnanthes hungarica</i> Grun.					
<i>Achnanthes laevis</i> Oestrup	0.3 \pm 0.3				
<i>Achnanthes laterostrata</i> Hust.					
<i>Achnanthes linearis</i> (W. Sm.) Grun.					
<i>Achnantheidium minutissima</i> (Kütz.) Czar.	16.5 \pm 3.1	9.0 \pm 3.8	12.2 \pm 3.8	3.7 \pm 1.0	18.0 \pm 2.9
<i>Amphipleura pellucida</i> (Kütz.) Kütz.					
<i>Amphora coffeaeformis</i> (Ag.) Kütz					
<i>Amphora ovalis</i> (Kütz.) Kütz.			0.1 \pm 0.1		
<i>Amphora pediculus</i> (Kütz.) Grun.	1.0 \pm 0.5	0.1 \pm 0.1			0.3 \pm 0.2
<i>Amphora veneta</i> Kütz.					
<i>Anomoeoneis sphaerophora</i> (Ehr.) Pfitz.					
<i>Anomoeoneis sphaerophora</i> f. <i>costata</i> (Kütz.) Schmid.					
<i>Anomoeoneis vitrea</i> (Grun.) Grun.					
<i>Asterionella formosa</i> Hass.					
<i>Aulocoseira ambigua</i> (Grun.) Simonsen	0.8 \pm 0.8	0.3 \pm 0.3	4.1 \pm 2.3	0.4 \pm 0.1	0.5 \pm 0.5
<i>Aulocoseira distans</i> (Ehr.) Simonsen				0.5 \pm 0.1	0.2 \pm 0.2
<i>Aulocoseira granulata</i> (Ehr.) Simonsen					
<i>Aulacoseira islandica</i> O. Muell.					
<i>Aulacoseira italica</i> (Ehr.) Simononsen					
<i>Caloneis amphibaena</i> (Bory) Cl.					
<i>Caloneis bacillum</i> (Grun.) Cl.					
<i>Caloneis molaris</i> (Grun.) Krammer					
<i>Caloneis schumanniana</i> (Grun.) Cl.					

APPENDIX TABLE 1i. (Cont.)

TAXA	Hidden Valley 30 VII 01	Trout Cr (BF) 11VII01	Robinson Cr 31VIII01	Deep Creek 27VVIII01	Heavenly Valley 30VII01
<i>Caloneis silicula</i> (Ehr.) Cl.					
<i>Caloneis sublinearis</i> (Grun.) Krammer					
<i>Caloneis tenuis</i> (Greg.) Krammer					
<i>Cocconeis pediculus</i> Kütz.					
<i>Cocconeis placentula</i> Ehr.					
<i>Cocconeis placentula</i> var. <i>euglypta</i> (Ehr.) Cl.	38.7 ±7.6	5.4 ±0.8	20.7 ±5.4	50.2 ±4.7	6.6 ±1.5
<i>Cocconeis placentula</i> var. <i>lineata</i> (Ehr.) V.H.					
<i>Cocconeis placentula</i> var. <i>pseudolineata</i> Geitler					
<i>Ctenophora pulchella</i> (Ralfs) Williams & Round					
<i>Cyclotella bodanica</i> Grun.					
<i>Cyclotella meneghiniana</i> Kütz.		1.3 ±1.3	0.1 ±0.1		
<i>Cyclotella stelligera</i> Cl. & Grun.	0.1 ±0.1	0.1 ±0.1	0.1 ±0.1		
<i>Cyclostephanos novaezealandiae</i> (Cl.) Round					
<i>Cymatopleura solea</i> (Bréb) W. Sm.					
<i>Cymbella affinis</i> Kütz.	1.3 ±0.5	0.1 ±0.1	1.9 ±0.3	0.3 ±0.1	0.1 ±0.1
<i>Cymbella amphicephala</i> Naeg. ex. Kütz.				0.1 ±0.1	0.2 ±0.2
<i>Cymbella aspera</i> (Ehr.) Cl.					
<i>Cymbella cistula</i> (Ehr.) Kirch.					
<i>Cymbella cymbiformis</i> var. <i>nonpunctata</i> Fontell	0.3 ±0.3				
<i>Cymbella gracilis</i> (Ehr.) Kütz.					
<i>Cymbella latens</i> Krasske					
<i>Cymbella mexicana</i> (Ehr.) Cl.					
<i>Cymbella minuta</i> Hilse ex. Rabh.		1.6 ±0.6			
<i>Cymbella naviculiformis</i> (Auers.) Cl.					
<i>Cymbella prostrata</i> (Berk.) Cl.					

APPENDIX TABLE 1i. (Cont.)

TAXA	Hidden Valley 30 VII 01	Trout Cr (BF) 11VII01	Robinson Cr 31VIII01	Deep Creek 27VVIII01	Heavenly Valley 30VII01
<i>Cymbella proxima</i> Reimer					
<i>Cymbella silesiaca</i> Bleisch in Rabh.		1.1 ±0.9	4.5 ±4.2	0.9 ±0.2	2.7 ±0.5
<i>Cymbella subcuspidata</i> Krammer			0.4 ±0.4		
<i>Cymbella tumida</i> (Breb.) Van Heurck					
<i>Cymbella tumidula</i> Grun.					
<i>Cymbellonitzschia diluviana</i> Hust.					
<i>Denticula elegans</i> Kütz.					
<i>Diatoma hyemalis</i> (Roth) Heiberg					
<i>Diatoma mesodon</i> (Ehr.) Kütz.	3.7 ±2.3	0.5 ±0.5	1.1 ±0.5	0.6 ±0.2	5.4 ±1.6
<i>Diatoma tenuis</i> Ag.					
<i>Diatoma vulgare</i> Bory					0.2 ±0.2
<i>Didymosphenia geminata</i> (Lyngbye) M. Schmidt					
<i>Diploneis elliptica</i> (Kütz.) Cl.					0.2 ±0.2
<i>Diploneis oblongella</i> (Naeg. ex. Kütz) Ross					
<i>Diploneis ovalis</i> (Hilse) Cl.					
<i>Encyonopsis microcephala</i> (Grun.) Krammer					
<i>Epithemia adnata</i> (Kütz.) Bréb.		0.1 ±0.1	0.4 ±0.3		
<i>Epithemia argus</i> (Ehr.) Kütz.				0.2 ±0.2	
<i>Epithemia argus</i> var. <i>alpestris</i> (W. Sm.) Grun.					
<i>Epithemia sorex</i> Kütz.			1.1 ±0.1		0.7 ±0.4
<i>Epithemia turgida</i> (Ehr.) Kütz.					
<i>Epithemia turgida</i> var. <i>westermanni</i> (Grun.) Ehr.					1.2 ±0.6
<i>Eunotia</i>				0.2 ±0.2	
<i>Eunotia bilunaris</i> (Ehr.) Mills.	1.7 ±1.0	0.5 ±0.3	0.5 ±0.3		4.5 ±1.7
<i>Eunotia pectinatus</i> (Dillw.) Rabh.					
<i>Fragilaria arcus</i> (Ehr.) Cl.		0.3 ±0.3	2.5 ±0.6		2.0 ±0.4
<i>Fragilaria bicapitata</i> A. Moyer					0.4 ±0.4
<i>Fragilaria capucina</i> Desm.	0.4 ±0.2	2.8 ±0.8	1.6 ±0.8	0.5 ±0.3	6.9 ±3.7

APPENDIX TABLE 1i. (Cont.)

TAXA	Hidden Valley 30 VII 01	Trout Cr (BF) 11VII01	Robinson Cr 31VIII01	Deep Creek 27VVIII01	Heavenly Valley 30VII01
<i>Fragilaria capucina</i> var. <i>capitellata</i> (Gru Lange-Bertalot					
<i>Fragilaria capucina</i> var. <i>gracilis</i> (Oestrup) Hust.					
<i>Fragilaria capucina</i> var. <i>rumpens</i> (Kütz.) Lange-Bertalot					
<i>Fragilaria capucina</i> var. <i>vaucheriae</i> (Kütz.) Lange-Bertalot	4.5 ±1.5	5.7 ±1.3	4.0 ±1.0	0.8 ±0.1	7.9 ±0.9
<i>Fragilaria crotonensis</i> Kitt.					
<i>Fragilaria cycloporum</i> (Brutschy) Lange-Bertalot					
<i>Fragilaria leptostauron</i> (Ehr.) Hust.		0.1 ±0.1	0.1 ±0.1	0.2 ±0.2	
<i>Fragilaria mazamaensis</i> (Soveign) Lange-Bertalot					
<i>Fragilaria parasitica</i> (W. Sm.) Grun.					
<i>Fragilaria parasitica</i> var. <i>subconstricta</i> Grun.					
<i>Fragilaria robusta</i> (Ralfs.) Lange-Bertalot					
<i>Fragilaria tenera</i> (W. Sm.) Lange-Bertalot					4.3 ±0.7
<i>Fragilaria ulna</i> (Nitzs.) Lange-Bertalot	1.8 ±1.2	3.2 ±0.6	0.4 ±0.3	1.4 ±0.4	0.8 ±0.5
<i>Fragilaria ulna</i> var. <i>arcus</i> (Kütz.) Lange-Bertalot					
<i>Fragilariforma virescens</i> (Ralfs) Williams & Round					
<i>Frustulia rhomboides</i> (Ehr.) DeToni	0.2 ±0.2	0.4 ±0.2			0.4 ±0.3
<i>Frustulia vulgaris</i> (Thwaites) DeT.					0.1 ±0.1
<i>Gomphoneis herculeana</i> (Ehr.) Cl.		0.5 ±0.4		1.2 ±0.6	
<i>Gomphonema accuminatum</i> Ehr.				0.1 ±0.1	
<i>Gomphonema affine</i> Kütz.					
<i>Gomphonema angustum</i> Ag.					
<i>Gomphonema clavatum</i> Ehr.					
<i>Gomphonema clevei</i> Fricke	2.3 ±1.0	14.3 ±4.8	23.5 ±7.0	0.3 ±0.3	0.7 ±0.7

APPENDIX TABLE 1i. (Cont.)

TAXA	Hidden Valley 30 VII 01	Trout Cr (BF) 11VII01	Robinson Cr 31VIII01	Deep Creek 27VVIII01	Heavenly Valley 30VII01
<i>Gomphonema gracile</i> Ehr.					
<i>Gomphonema minuta</i> (C. Ag.) C. Ag.					
<i>Gomphonema olivaceum</i> (Horn.) Bréb.					
<i>Gomphonema parvulum</i> Kütz.	1.3 ±0.7				
<i>Gomphonema subtile</i> Ehr.	1.9 ±1.1				
<i>Gomphonema truncatum</i> (Cl. Ag.) Cl. Ag.					
<i>Gomphonema ventricosum</i> Greg.					
cf. <i>Grammatophora</i>					
<i>Gyrosigma acummatum</i> (Kütz.) Rabh.					
<i>Hantzschia amphioxys</i> (Ehr.) Grun.					0.2 ±0.2
<i>Hippodonta capitata</i> (Ehr.) Lange-Bertalot					
<i>Karayevia clevei</i> (Grun.) Round & Bukhtiyarova					
<i>Luticola goeppertinana</i> (Bleisch) Mann					
<i>Lutica mutica</i> (Kütz.) Mann					
<i>Mastogloia smithii</i> Thwaites					
<i>Melosira varians</i> Ag.		0.4 ±0.4	0.4 ±0.2		1.6 ±0.9
<i>Meridion circulare</i> (Grev.) Ag.		1.8 ±0.9	0.3 ±0.3	0.2 ±0.2	1.2 ±0.5
<i>Meridion circulare</i> var. <i>constrictum</i> (Ralfs.) Van Heurck					
<i>Navicula angusta</i> Grun.					
<i>Navicula arenaria</i> Donk.					
<i>Navicula arvensis</i> Hust.		0.5 ±0.3		0.2 ±0.2	
<i>Navicula bryophila</i> Boye Petersen					
<i>Navicula capitatoradiata</i> Germain					
<i>Navicula cari</i> Ehr.					
<i>Navicula cincta</i> (Ehr.) Ralfs					
<i>Navicula clematis</i> Grun.					

APPENDIX TABLE 1i. (Cont.)

TAXA	Hidden Valley 30 VII 01	Trout Cr (BF) 11VII01	Robinson Cr 31VIII01	Deep Creek 27VVIII01	Heavenly Valley 30VII01
<i>Navicula cryptocephala</i> Kütz	0.1 ±0.1		0.2 ±0.1		
<i>Navicula cryptonella</i> Lange-Bertalot					
<i>Navicula cuspidata</i> Kütz. (Kütz.)					
<i>Navicula declivis</i> Hust.					
<i>Navicula decussis</i> Østrup.					
<i>Navicula dentata</i> Hust.					
<i>Navicula elginensis</i> (Greg.) Ralfs.					
<i>Navicula erifuga</i> Lange-Bertalot					
<i>Navicula expecta</i> Van Land.					
<i>Navicula gregaria</i> Donk.		0.1 ±0.1			
<i>Navicula heufleriana</i> (Grun.) Grun.					
<i>Navicula incerta</i> Lange-Bertalot					
<i>Navicula indifferens</i> Hust.					
<i>Navicula lanceolata</i> (Ag.) Kütz.					
<i>Navicula laterostrata</i> Hust.					
<i>Navicula libonensis</i> Schoemann	0.3 ±0.3				
<i>Navicula minuscula</i> Grun.					
<i>Navicula protracta</i> (Grun.) Cl.					
<i>Navicula pygmaea</i> Kütz.					
<i>Navicula radiosa</i> Kütz.	0.8 ±0.5	0.1 ±0.1			
<i>Navicula reinhardtii</i> Grun.					
<i>Navicula rhynchocephala</i> Kütz.		0.6 ±0.6		0.1 ±0.1	1.0 ±0.3
<i>Navicula rotundra</i> Hust.					
<i>Navicula salinarum</i> Grun.					0.1 ±0.1
<i>Navicula schoenfeldii</i> Hust.					
<i>Navicula schroeterii</i> Meister					
<i>Navicula seminulum</i> Grun.					
cf. <i>Navicula splendicula</i> Van Land.					

APPENDIX TABLE 1i. (Cont.)

TAXA	Hidden Valley 30 VII 01	Trout Cr (BF) 11VII01	Robinson Cr 31VIII01	Deep Creek 27VVIII01	Heavenly Valley 30VII01
<i>Navicula subminiscula</i> Mang.					
<i>Navicula subrhyncocephala</i> Hust.					
<i>Navicula subrotundata</i> Hust.					
<i>Navicula tenelloides</i> Hust.					
<i>Navicula tridentula</i> Krasske					
<i>Navicula tripunctata</i> (O.F. Müll) Bory			0.2 ±0.2	1.6 ±0.5	
<i>Navicula variostrata</i> Krasske					
<i>Navicula veneta</i> Kütz.				0.8 ±0.1	
<i>Navicula viridula</i> (Kütz.) Kütz.					
<i>Nitzschia acicularis</i> W. Sm					
<i>Nitzschia amphibia</i> Grun.					0.2 ±0.1
<i>Nitzschia capitellata</i> Hust.					
<i>Nitzschia compressa</i> (Bailey) Boyer					0.4 ±0.4
<i>Nitzschia dissipata</i> (Kütz.) Kütz.	1.3 ±0.6	7.4 ±2.0	1.2 ±0.8	3.7 ±0.6	9.3 ±2.4
<i>Nitzschia epithemoides</i> Grun.					
<i>Nitzschia filiformis</i> (W. Sm.) Hust.					
<i>Nitzschia fonticola</i> Grun.	2.0 ±0.9				
<i>Nitzschia frustulum</i> Kütz.	0.3 ±0.3	0.1 ±0.1	0.1 ±0.1	2.8 ±0.4	0.2 ±0.2
<i>Nitzschia gracilis</i> Hantz.			0.3 ±0.2		2.4 ±1.2
<i>Nitzschia heufleriana</i> Grun.					
<i>Nitzschia hybrida</i> Grun.		1.0 ±0.6			
<i>Nitzschia inconspicua</i> Grun.					
<i>Nitzschia linearis</i> W. Sm.					
<i>Nitzschia palea</i> (Kütz.) W. Sm.	0.7 ±0.5	0.7 ±0.7		0.2 ±0.1	
<i>Nitzschia parvula</i> W. Sm.					0.5 ±0.5
<i>Nitzschia pellucida</i> Grun.	2.9 ±1.2				0.2 ±0.3
<i>Nitzschia sigma</i> (Kütz.) W. Sm.		2.0 ±0.9			
<i>Nitzschia sigmoidea</i> (Nitz.) W. Sm.			1.2 ±0.4	1.3 ±0.7	

APPENDIX TABLE 1i. (Cont.)

TAXA	Hidden Valley 30 VII 01	Trout Cr (BF) 11VII01	Robinson Cr 31VIII01	Deep Creek 27VVIII01	Heavenly Valley 30VII01
<i>Nitzschia sinuata</i> var. <i>delognei</i> (Grun.) Lange-Bertalot					
<i>Nitzschia umbonata</i> (Ehr.) Lange-Bertalot					0.2 ±0.2
<i>Nitzschia vermicularis</i> (Kütz.) Hantz.					
<i>Opephora olsenii</i> Moller			4.7 ±4.7	0.1 ±0.1	1.2 ±0.6
<i>Pinnularia borealis</i> Ehr.					
<i>Pinnularia brevicostata</i> Cl.					
<i>Pinnularia divergens</i> W. Sm.					
<i>Pinnularia divergentissima</i> (Grun.) Cl.		0.7 ±0.4			0.4 ±0.2
<i>Pinnularia gibba</i> Ehr.					
<i>Pinnularia gibba</i> var. <i>linearis</i> Ehr.					
<i>Pinnularia interrupta</i> W. Sm.					
<i>Pinnularia lagerstedtii</i> (Cl.) Cl.- Euler					
<i>Pinnularia lata</i> (Bréb.) W. Sm.					
<i>Pinnularia maior</i> (Kütz.) Rabh.					
<i>Pinnularia nodosa</i> Ehr.					
<i>Pinnularia obscura</i> Krasske					
<i>Pinnularia similis</i> Hust.					
<i>Pinnularia stromatophora</i> (Grun.) Cl.					
<i>Pinnularia subcapitata</i> Greg.					
<i>Pinnularia viridis</i> (Nitz.) Ehr.					
<i>Planothidium delicatula</i> (Kütz.) Round & Bukhtiyarova					
<i>Planothidium lanceolata</i> (Breb.) Round & Bukhtiyarova	11.3 ±4.6	8.3 ±2.7	1.3 ±0.5	5.9 ±0.1	12.2 ±1.3
<i>Planothidium lanceolata</i> var. <i>dubia</i> (Grun.) Lange-Bertalot					

APPENDIX TABLE 1i. (Cont.)

TAXA	Hidden Valley 30 VII 01	Trout Cr (BF) 11VII01	Robinson Cr 31VIII01	Deep Creek 27VVIII01	Heavenly Valley 30VII01
<i>Pseudostaurosira brevistriata</i> (Grun.) Williams & Round			0.9 ±0.3		
<i>Reimeria sinuata</i> (Greg.) Kociolek & Stoermer	0.3 ±0.3	2.7 ±2.0	0.9 ±0.5	0.6 ±0.1	0.7 ±0.5
<i>Rhopalodia gibba</i> (Ehr.) O. Müll.	0.4 ±0.2	0.9 ±0.6			
<i>Rhopalodia gibberula</i> (Ehr.) O. Müll.					
<i>Rhoicosphenia abbreviata</i> (Ag.) Lange-Bertalot	2.2 ±1.9	22.2 ±5.4	0.1 ±0.1	21.2 ±6.0	0.5 ±0.5
<i>Sellaphora minima</i> (Kütz.) Gell et al.					
<i>Sellaphora pupula</i> (Kütz.) Gell et al.		0.6 ±0.3	0.1 ±0.1		
<i>Stauroneis anceps</i> Ehr.					
<i>Stauroneis kriegerii</i> Patrick					
<i>Stauroneis phoenicenteron</i> (Nitz.) Ehr.					
<i>Stauroneis smithii</i> Grun.					
<i>Staurosira construens</i> (Ehr.) Hust.					2.9 ±1.4
<i>Staurosira construens</i> f. <i>binodis</i> (Ehr.) Hust.					
<i>Staurosira construens</i> var. <i>venter</i> (Ehr.) Hust.		1.6 ±0.7	6.3 ±2.2		
<i>Staurosirella pinnata</i> (Ehr.) Williams & Round	0.5 ±0.5				
<i>Stephanodiscus hantzschii</i> Grun. (in Cl. & Grun.)					
<i>Stephanodiscus niagare</i> Ehr.					
<i>Surirella angustata</i> Kütz.		1.2 ±0.7			0.1 ±0.1
<i>Surirella brebissonii</i> Krammer & Lange-Bertalot					
<i>Surirella ovalis</i> Breb.					
<i>Surirella striatula</i> Turp.					
<i>Surirella tenera</i> Greg.					
<i>Tabellaria fenestrata</i> (Lyngb.) Grun.					
<i>Tabellaria flocculosa</i> (Roth) Kütz.	0.1 ±0.1		2.7 ±2.5		
<i>Tetracyclus rupestris</i> (Braun.) Grun.	0.1 ±0.1				

APPENDIX TABLE 1j. Relative % (\pm SE) frequency of diatoms and collection dates for selected streams in the Lahontan Basin, USA. Species acronyms are in parentheses.

TAXA	Squaw Cr Middle 9VII01	Squaw Cr Lower 9VII01	Convict Lower 21VI01	Saxon Cr 22VIII01	Rush above 395 26VII01
<i>Achnanthes exigua</i> Grun.					
<i>Achnanthes hungarica</i> Grun.					
<i>Achnanthes laevis</i> Oestrup					
<i>Achnanthes laterostrata</i> Hust.					
<i>Achnanthes linearis</i> (W. Sm.) Grun.					
<i>Achnanthidium minutissima</i> (Kütz.) Czar.	14.4 \pm 0.5	20.2 \pm 4.9	3.8 \pm 1.5	3.0 \pm 1.0	3.6 \pm 0.3
<i>Amphipleura pellucida</i> (Kütz.) Kütz.					0.3 \pm 0.1
<i>Amphora coffeaeformis</i> (Ag.) Kütz					
<i>Amphora ovalis</i> (Kütz.) Kütz.					0.2 \pm 0.2
<i>Amphora pediculus</i> (Kütz.) Grun			0.2 \pm 0.2	0.5 \pm 0.3	0.1 \pm 0.1
<i>Amphora veneta</i> Kütz.					
<i>Anomoeoneis sphaerophora</i> (Ehr.) Pfitz.					
<i>Anomoeoneis sphaerophora</i> f. <i>costata</i> (Kütz.) Schmid.					
<i>Anomoeoneis vitrea</i> (Grun.) Grun.					
<i>Asterionella formosa</i> Hass.			10.5 \pm 1.4		3.3 \pm 0.3
<i>Aulocoseira ambigua</i> (Grun.) Simon.		0.2 \pm 0.2		1.3 \pm 1.3	0.3 \pm 0.3
<i>Aulocoseira granulata</i> (Ehr.) Simonsen					
<i>Aulocoseira distans</i> (Ehr.) Simonsen		5.1 \pm 2.6			
<i>Aulacoseira islandica</i> O. Muell.					
<i>Aulacoseira italica</i> (Ehr.) Simon.	0.1 \pm 0.1				
<i>Caloneis amphisbaena</i> (Bory) Cl.					
<i>Caloneis bacillum</i> (Grun.) Cl.					
<i>Caloneis molaris</i> (Grun.) Krammer	0.1 \pm 0.1				
<i>Caloneis schumanniana</i> (Grun.) Cl.					

APPENDIX TABLE 1j. (Cont.).

TAXA	Squaw Cr Middle 9VII01	Squaw Cr Lower 9VII01	Convict Lower 21VI01	Saxon Cr 22VIII01	Rush above 395 26VII01
<i>Caloneis silicula</i> (Ehr.) Cl.				1.6 ±0.8	
<i>Caloneis sublinearis</i> (Grun.) Krammer					
<i>Caloneis tenuis</i> (Greg.) Krammer					
<i>Cocconeis pediculus</i> Kütz.					
<i>Cocconeis placentula</i> Ehr.					
<i>Cocconeis placentula</i> var. <i>euglypta</i> (Ehr.) Cl.	2.8 ±1.2	3.3 ±1.1	28.4 ±10.4	33.2 ±4.9	17.0 ±3.1
<i>Cocconeis placentula</i> var. <i>lineata</i> (Ehr.) V.H.					
<i>Cocconeis placentula</i> var. <i>pseudolineata</i> Geitler					
<i>Ctenophora pulchella</i> (Ralfs) Williams & Round					0.1 ±0.1
<i>Cyclotella meneghiniana</i> Kütz.	0.1 ±0.1	0.1 ±0.1	0.8 ±0.4		0.3 ±0.1
<i>Cyclotella stelligera</i> Cl. & Grun.	0.1 ±0.1	1.7 ±0.2	0.1 ±0.1		0.6 ±0.4
<i>Cyclostephanos novaezealandiae</i> (Cl.) Round					
<i>Cymatopleura solea</i> (Bréb) W. Sm.					
<i>Cymbella affinis</i> Kütz.	5.3 ±0.6	2.3 ±0.7	2.1 ±0.6	0.8 ±0.4	4.0 ±1.0
<i>Cymbella amphicephala</i> Naeg. ex. Kütz.				0.1 ±0.1	
<i>Cymbella aspera</i> (Ehr.) Cl.					
<i>Cymbella cistula</i> (Ehr.) Kirch.					0.1 ±0.1
<i>Cymbella cymbiformis</i> var. <i>nonpunctata</i> Fontell					
<i>Cymbella gracilis</i> (Ehr.) Kütz.					
<i>Cymbella latens</i> Krasske					
<i>Cymbella mexicana</i> (Ehr.) Cl.					
<i>Cymbella minuta</i> Hilse ex. Rabh.					
<i>Cymbella naviculiformis</i> (Auers.) Cl.					
<i>Cymbella prostrata</i> (Berk.) Cl.					
<i>Cymbella proxima</i> Reimer					1.6 ±0.9
<i>Cymbella silesiaca</i> Bleisch in Rabh.	0.1 ±0.1				0.1 ±0.1

APPENDIX TABLE 1j. (Cont.).

TAXA	Squaw Cr Middle 9VII01	Squaw Cr Lower 9VII01	Convict Lower 21VI01	Saxon Cr 22VIII01	Rush above 395 26VII01
<i>Cymbella subcuspidata</i> Krammer					
<i>Cymbella tumida</i> (Breb.) Van Heurck					
<i>Cymbella tumidula</i> Grun.				0.1 ±0.1	
<i>Cymbellonitzschia diluviana</i> Hust.					
<i>Denticula elegans</i> Kütz.					
<i>Diatoma hyemalis</i> (Roth) Heiberg					
<i>Diatoma mesodon</i> (Ehr.) Kütz.	0.1 ±0.1	0.4 ±0.2	0.2 ±0.2	1.8 ±0.8	0.3 ±0.1
<i>Diatoma tenuis</i> Ag.					
<i>Diatoma vulgaris</i> Bory					
<i>Didymosphenia geminata</i> (Lyngbye) M. Schmidt					0.6 ±0.4
<i>Diploneis elliptica</i> (Kütz.) Cl.					
<i>Diploneis oblongella</i> (Naeg. ex. Kütz) Ross					
<i>Diploneis ovalis</i> (Hilse) Cl.		0.1 ±0.1			
<i>Encyonopsis microcephala</i> (Grun.) Krammer					
<i>Epithemia adnata</i> (Kütz.) Bréb.			1.1 ±0.6		2.6 ±0.5
<i>Epithemia argus</i> (Ehr.) Kütz.					
<i>Epithemia argus</i> var. <i>alpestris</i> (W. Sm.) Grun.	0.3 ±0.2	1.1 ±0.6			
<i>Epithemia sorex</i> Kütz.					0.3 ±0.1
<i>Epithemia turgida</i> (Ehr.) Kütz.					
<i>Epithemia turgida</i> var. <i>westermanni</i> (Grun.) Ehr.					
<i>Eunotia</i>					
<i>Eunotia bilunaris</i> (Ehr.) Mills.	1.0 ±0.1	0.4 ±0.2		0.5 ±0.5	
<i>Eunotia pectinatus</i> (Dillw.) Rabh.					
<i>Fragilaria arcus</i> (Ehr.) Cl.	0.3 ±0.2	0.7 ±0.4			0.2 ±0.2
<i>Fragilaria bicapitata</i> A. Moyer					
<i>Fragilaria capucina</i> Desm.	10.4 ±2.8	5.5 ±4.2	0.4 ±0.3	1.6 ±0.8	19.5 ±2.4
<i>Fragilaria capucina</i> var. <i>capitellata</i> (Grun.) Lange-Bertalot					1.0 ±0.4

APPENDIX TABLE 1j. (Cont.).

TAXA	Squaw Cr Middle 9VII01	Squaw Cr Lower 9VII01	Convict Lower 21VI01	Saxon Cr 22VIII01	Rush above 395 26VII01
<i>Fragilaria capucina</i> var. <i>gracilis</i> (Oestrup) Hust.					
<i>Fragilaria capucina</i> var. <i>rumpens</i> (Kütz.) Lange-Bertalot					
<i>Fragilariaria capucina</i> var. <i>vaucheriae</i> (Kütz.) Lange-Bertalot	4.4 ±0.5	5.0 ±1.3	3.4 ±0.5	12.9 ±1.8	1.9 ±0.7
<i>Fragilaria crotonensis</i> Kitt.			7.8 ±3.4		0.3 ±0.3
<i>Fragilaria cycloporum</i> (Brutschy) Lange-Bertalot					0.2 ±0.2
<i>Fragilaria leptostauron</i> (Ehr.) Hust.					
<i>Fragilaria mazamaensis</i> (Soveign) Lange-Bertalot			0.2 ±0.2		
<i>Fragilaria parasitica</i> (W. Sm.) Grun.					
<i>Fragilaria parasitica</i> var. <i>subconstricta</i> Grun.					
<i>Fragilaria robusta</i> (Ralfs.) Lange-Bertalot					
<i>Fragilaria tenera</i> (W. Sm.) Lange-Bertalot	0.7 ±0.4				0.3 ±0.2
<i>Fragilaria ulna</i> (Nitzs.) Lange-Bertalot	4.0 ±1.7	2.4 ±0.8	1.6 ±0.3	5.0 ±1.7	6.4 ±0.6
<i>Fragilaria ulna</i> var. <i>arcus</i> (Kütz.) Lange-Bertalot					
<i>Fragilariformis virescens</i> (Ralfs.) Williams & Round					
<i>Frustulia rhomboides</i> (Ehr.) DeToni	0.2 ±0.2	0.8 ±0.6		0.1 ±0.1	
<i>Frustulia vulgaris</i> (Thwaites) DeT.					
<i>Gomphoneis herculeana</i> (Ehr.) Cl.			0.2 ±0.2	0.5 ±0.5	2.6 ±1.2
<i>Gomphonema acuminatum</i> Ehr.		0.1 ±0.1			0.1 ±0.1
<i>Gomphonema affine</i> Kütz.					
<i>Gomphonema angustum</i> Ag.					
<i>Gomphonema clavatum</i> Ehr.					
<i>Gomphonema clevei</i> Fricke	43.5 ±2.0	29.9 ±5.2	5.5 ±0.6	8.5 ±3.8	2.9 ±0.7
<i>Gomphonema gracile</i> Ehr.					
<i>Gomphonema minuta</i> (C. Ag.) C. Ag.					

APPENDIX TABLE 1j. (Cont.).

TAXA	Squaw Cr Middle 9VII01	Squaw Cr Lower 9VII01	Convict Lower 21VI01	Saxon Cr 22VIII01	Rush above 395 26VI01
<i>Gomphonema olivaceum</i> (Horn.) Bréb.					
<i>Gomphonema parvulum</i> Kütz.	0.3 (0.3)		4.0 ±4.0	1.3 ±1.1	0.3 ±0.2
<i>Gomphonema subtile</i> Ehr.					
<i>Gomphonema truncatum</i> (Cl. Ag.) Cl. Ag.	0.1 ±0.1				
<i>Gomphonema ventricosum</i> Greg. cf. <i>Grammatophora</i>					
<i>Gyrosigma acummatum</i> (Kütz.) Rabh.					
<i>Hantzschia amphioxys</i> (Ehr.) Grun.					
<i>Hippodonta capitata</i> (Ehr.) Lange-Bertalot					
<i>Karayevia clevei</i> (Grun.) Round & Bukhtiyarova				0.3 ±0.3	0.3 ±0.3
<i>Luticola goeppertinana</i> (Bleisch) Mann					
<i>Luticola mutica</i> (Kütz.) Mann					
<i>Mastogloia smithii</i> Thwaites					
<i>Melosira varians</i> Ag.	0.1 ±0.1			3.1 ±1.1	
<i>Meridion circulare</i> (Grev.) Ag.	0.6 ±0.2	0.4 ±0.2			
<i>Meridion circulare</i> var. <i>constrictum</i> (Ralfs.) Van Heurck					
<i>Navicula angusta</i> Grun.					
<i>Navicula arenaria</i> Donk.					
<i>Navicula arvensis</i> Hust.		0.8 ±0.6			
<i>Navicula bryophila</i> Boye Petersen					
<i>Navicula capitatoradiata</i> Germain	0.5 ±0.5	1.9 ±1.1			
<i>Navicula cari</i> Ehr.					
<i>Navicula cincta</i> (Ehr.) Ralfs					
<i>Navicula clematis</i> Grun.					
<i>Navicula cryptocephala</i> Kütz	0.5 ±0.4	0.8 ±0.6		1.8 ±0.9	0.8 ±0.3
<i>Navicula cryptonella</i> Lange-Bertalot					

APPENDIX TABLE 1j. (Cont.).

TAXA	Squaw Cr Middle 9VII01	Squaw Cr Lower 9VII01	Convict Lower 21VI01	Saxon Cr 22VIII01	Rush above 395 26VII01
<i>Navicula declivis</i> Hust.					
<i>Navicula decussis</i> Østrup.					
<i>Navicula dentata</i> Hust.					
<i>Navicula elginensis</i> (Greg.) Ralfs.					
<i>Navicula erifuga</i> Lange-Bertalot					
<i>Navicula expecta</i> Van Land.					
<i>Navicula gregaria</i> Donk.					
<i>Navicula heufleriana</i> (Grun.) Grun.					
<i>Navicula incerta</i> Lange-Bertalot					
<i>Navicula indifferens</i> Hust.					
<i>Navicula lanceolata</i> (Ag.) Kütz.					
<i>Navicula laterostrata</i> Hust.					
<i>Navicula libonensis</i> Schoemann					
<i>Navicula minuscula</i> Grun.					
<i>Navicula protracta</i> (Grun.) Cl.					
<i>Navicula pygmaea</i> Kütz.					
<i>Navicula radiosa</i> Kütz.			0.5 ±0.3	0.9 ±0.3	0.6 ±0.3
<i>Navicula reinhardtii</i> Grun.					
<i>Navicula rhynchocephala</i> Kütz.		0.1 ±0.1			
<i>Navicula rotundra</i> Hust.					
<i>Navicula salinarum</i> Grun.		0.1 ±0.1			
<i>Navicula schoenfeldii</i> Hust.					
<i>Navicula schroeterii</i> Meister					
<i>Navicula seminulum</i> Grun.					
cf. <i>Navicula splendicula</i> Van Land.					
<i>Navicula subminiscula</i> Mang.					
<i>Navicula subrhynchocephala</i> Hust.					

APPENDIX TABLE 1j. (Cont.).

TAXA	Squaw Cr Middle 9VII01	Squaw Cr Lower 9VII01	Convict Lower 21VI01	Saxon Cr 22VIII01	Rush above 395 26VII01
<i>Navicula subrotundata</i> Hust.					
<i>Navicula tenelloides</i> Hust.					
<i>Navicula tridentula</i> Krasske					
<i>Navicula tripunctata</i> (O.F. Müll) Bory					
<i>Navicula variostrata</i> Krasske					
<i>Navicula veneta</i> Kütz.	1.0 ±0.1	0.7 ±0.7	0.7 ±0.4	2.2 ±0.4	1.4 ±0.7
<i>Nitzschia acicularis</i> W. Sm					
<i>Nitzschia amphibia</i> Grun.			6.4 ±5.6	0.1 ±0.1	3.8 ±0.5
<i>Nitzschia capitellata</i> Hust.		0.5 ±0.4		0.1 ±0.1	
<i>Nitzschia compressa</i> (Bailey) Boyer					
<i>Nitzschia dissipata</i> (Kütz.) Kütz.	0.7 ±0.2	1.3 ±1.3	1.3 ±0.6	4.2 ±0.7	6.1 ±2.0
<i>Nitzschia epithemoides</i> Grun.					
<i>Nitzschia filiformis</i> (W. Sm.) Hust.					
<i>Nitzschia fonticola</i> Grun.					0.8 ±0.8
<i>Nitzschia frustulum</i> Kütz.	1.0 ±0.7	0.4 ±0.2	1.4 ±0.6		4.3 ±0.9
<i>Nitzschia gracilis</i> Hantz.		0.2 ±0.2	0.2 ±0.2		0.9 ±0.3
<i>Nitzschia heufleriana</i> Grun.					
<i>Nitzschia hybrida</i> Grun.					
<i>Nitzschia inconspicua</i> Grun.					
<i>Nitzschia linearis</i> W. Sm.	0.1 ±0.1	0.6 ±0.3			
<i>Nitzschia palea</i> (Kütz.) W. Sm.	0.8 ±0.3				
<i>Nitzschia parvula</i> W. Sm.					
<i>Nitzschia pellucida</i> Grun.					
<i>Nitzschia sigma</i> (Kütz.) W. Sm.					1.1 ±0.4
<i>Nitzschia sigmoidea</i> (Nitz.) W. Sm.	0.1 ±0.1		0.2 ±0.2	1.9 ±0.6	0.1 ±0.1
<i>Nitzschia sinuata</i> var. <i>delognei</i> (Grun.) Lange-Bertalot					

APPENDIX TABLE 1j. (Cont.).

TAXA	Squaw Cr Middle 9VII01	Squaw Cr Lower 9VII01	Convict Lower 21VI01	Saxon Cr 22VIII01	Rush above 395 26VII01
<i>Nitzschia umbonata</i> (Ehr.) Lange-Bertalot					
<i>Nitzschia vermicularis</i> (Kütz.) Hantz.					
<i>Opephora olsenii</i> Moller				0.4 ±0.4	
<i>Pinnularia borealis</i> Ehr.				0.2 ±0.2	
<i>Pinnularia brevicostata</i> Cl.					
<i>Pinnularia divergens</i> W. Sm.	0.5 ±0.3	1.2 ±0.5			
<i>Pinnularia divergentissima</i> (Grun.) Cl.					
<i>Pinnularia gibba</i> Ehr.					
<i>Pinnularia gibba</i> var. <i>linearis</i> Ehr.		0.1 ±0.1			
<i>Pinnularia interrupta</i> W. Sm.					
<i>Pinnularia lagerstedtii</i> (Cl.) Cl.- Euler		0.7 ±0.7			
<i>Pinnularia lata</i> (Bréb.) W. Sm.					
<i>Pinnularia maior</i> (Kütz.) Rabh.					
<i>Pinnularia nodosa</i> Ehr.					
<i>Pinnularia obscura</i> Krasske					
<i>Pinnularia similis</i> Hust.					
<i>Pinnularia stromatophora</i> (Grun.) Cl.					
<i>Pinnularia subcapitata</i> Greg.					
<i>Pinnularia viridis</i> (Nitz.) Ehr.					
<i>Planothidium delicatula</i> (Kütz.) Round & Bukhtiyarova					
<i>Planothidium lanceolata</i> (Breb.) Round & Bukhtiyarova	1.2 ±0.1	1.8 ±0.6	1.9 ±0.6	9.0 ±4.0	0.9 ±0.5
<i>Planothidium lanceolata</i> var. <i>dubia</i> (Grun.) Lange-Bertalot					
<i>Pseudostaurosira brevistriata</i> (Grun.) Williams & Round				0.3 ±0.2	0.1 ±0.1

APPENDIX TABLE 1j. (Cont.).

TAXA	Squaw Cr Middle <i>9VII01</i>	Squaw Cr Lower <i>9VII01</i>	Convict Lower <i>21VI01</i>	Saxon Cr <i>22VIII01</i>	Rush above 395 <i>26VII01</i>
<i>Reimeria sinuata</i> (Greg.) Kociolek & Stoermer	2.8 ±0.8	5.5 ±2.2	15.3 ±8.4	0.1 ±0.1	
<i>Rhopalodia gibba</i> (Ehr.) O. Müll.	0.1 ±0.1	0.1 ±0.1	0.4 ±0.4		0.4 ±0.1
<i>Rhopalodia gibberula</i> (Ehr.) O. Müll.					
<i>Rhoicosphenia abbreviata</i> (Ag.) Lange-Bertalot	0.6 ±0.4	0.4 ±0.4	1.4 ±1.1	2.2 ±0.9	
<i>Sellaphora minima</i> (Kütz.) Gell et al.					
<i>Sellaphora pupula</i> (Kütz.) Gell et al.				0.2 ±0.2	
<i>Stauroneis anceps</i> Ehr.		0.1 ±0.1			
<i>Stauroneis kriegerii</i> Patrick				0.3 ±0.3	
<i>Stauroneis phoenicenteron</i> (Nitz.) Ehr.	0.1 ±0.1	0.1 ±0.1			
<i>Stauroneis smithii</i> Grun.					
<i>Staurosira construens</i> (Ehr.) Hust.					
<i>Staurosira construens</i> f. <i>binodis</i> (Ehr.) Hust.					
<i>Staurosira construens</i> var. <i>venter</i> (Ehr.) Hust.	0.9 ±0.2	2.7 ±1.8			7.3 ±1.4
<i>Staurosirella pinnata</i> (Ehr.) Williams & Round					
<i>Stephanodiscus hantzschii</i> Grun. (<i>in Cl. & Grun.</i>)					
<i>Stephanodiscus niagare</i> Ehr.					
<i>Surirella angustata</i> Kütz.	0.1 ±0.1	0.2 ±0.2			
<i>Surirella brebissonii</i> Krammer & Lange-Bertalot					
<i>Surirella ovalis</i> Breb.					
<i>Surirella striatula</i> Turp.					
<i>Surirella tenera</i> Greg.					
<i>Tabellaria fenestrata</i> (Lyngb.) Grun.					
<i>Tabellaria flocculosa</i> (Roth) Kütz.					
<i>Tetracyclus rupestris</i> (Braun.) Grun.					0.4 ±0.2

APPENDIX TABLE 1k. Relative % (\pm SE) frequency of diatoms and collection dates for selected streams in the Lahontan Basin, USA. Species acronyms are in parentheses.

TAXA	Sagenhen below 12VII01	Parker Cr below 26VII01	Squaw Cr N Fork 9VII01	E. Martis 10VI01	S. Fork Squaw 9VII01
<i>Achnanthes exigua</i> Grun.				0.2 \pm 0.2	
<i>Achnanthes hungarica</i> Grun.					
<i>Achnanthes laevis</i> Oestrup					
<i>Achnanthes laterostrata</i> Hust.					
<i>Achnanthes linearis</i> (W. Sm.) Grun.					
<i>Achnantheidium minutissima</i> (Kütz.) Czar.	2.6 \pm 1.2	32.8 \pm 10.6	72.8 \pm 1.2	4.0 \pm 0.2	18.4 \pm 3.6
<i>Amphipleura pellucida</i> (Kütz.) Kütz.	0.9 \pm 0.2			0.4 \pm 0.2	
<i>Amphora coffeaeformis</i> (Ag.) Kütz					
<i>Amphora ovalis</i> (Kütz.) Kütz.	0.1 \pm 0.1	0.1 \pm 0.1			1.8 \pm 0.8
<i>Amphora pediculus</i> (Kütz.) Grun		0.6 \pm 0.5		0.2 \pm 0.2	
<i>Amphora veneta</i> Kütz.					
<i>Anomoeoneis sphaerophora</i> (Ehr.) Pfitz.					
<i>Anomoeoneis sphaerophora</i> f. <i>costata</i> (Kütz.) Schmid.					
<i>Anomoeoneis vitrea</i> (Grun.) Grun.					
<i>Asterionella formosa</i> Hass.					
<i>Aulocoseira ambigua</i> (Grun.) Simon.			0.2 \pm 0.2	0.4 \pm 0.2	
<i>Aulocoseira distans</i> (Ehr.) Simonsen					
<i>Aulocoseira granulata</i> (Ehr.) Simonsen	1.0 \pm 0.5				4.2 \pm 2.5
<i>Aulacoseira islandica</i> O. Muell.					0.6 \pm 0.6
<i>Aulacoseira italica</i> (Ehr.) Simon.					
<i>Caloneis amphibaena</i> (Bory) Cl.					
<i>Caloneis bacillum</i> (Grun.) Cl.					
<i>Caloneis molaris</i> (Grun.) Krammer					
<i>Caloneis schumanniana</i> (Grun.) Cl.					

APPENDIX TABLE 1k (Cont.).

TAXA	Sagenhen below 12VII01	Parker Cr below 26VII01	Squaw Cr N Fork 9VII01	E. Martis 10VI01	S. Fork Squaw 9VII01
<i>Caloneis silicula</i> (Ehr.) Cl.					
<i>Caloneis sublinearis</i> (Grun.) Krammer					
<i>Caloneis tenuis</i> (Greg.) Krammer					
<i>Cocconeis pediculus</i> Kütz.					0.5 ±0.5
<i>Cocconeis placentula</i> Ehr.					
<i>Cocconeis placentula</i> var. <i>euglypta</i> (Ehr.) Cl.	11.8 ±2.5	15.8 ±2.6	1.3 ±0.9	11.1 ±3.6	0.5 ±0.4
<i>Cocconeis placentula</i> var. <i>lineata</i> (Ehr.) V.H.					24.9 ±9.7
<i>Cocconeis placentula</i> var. <i>pseudolineata</i> Geitler					
<i>Ctenophora pulchella</i> (Ralfs) Williams & Round					
<i>Cyclotella meneghiniana</i> Kütz.	2.1 ±0.6			3.1 ±0.1	
<i>Cyclotella stelligera</i> Cl. & Grun.		0.1 ±0.1			
<i>Cyclostephanos novaezeelandiae</i> (Cl.) Round					
<i>Cymatopleura solea</i> (Bréb) W. Sm.					
<i>Cymbella affinis</i> Kütz.	1.7 ±0.3	3.3±0.8	2.1 ±0.3	1.9 ±0.2	6.9 ±2.3
<i>Cymbella amphicephala</i> Naeg. ex. Kütz.					
<i>Cymbella aspera</i> (Ehr.) Cl.		0.6 ±0.3			
<i>Cymbella cistula</i> (Ehr.) Kirch.				1.4 ±0.1	
<i>Cymbella cymbiformis</i> var. <i>nonpunctata</i>					
<i>Fontell</i>					
<i>Cymbella gracilis</i> (Ehr.) Kütz.					
<i>Cymbella latens</i> Krasske					
<i>Cymbella mexicana</i> (Ehr.) Cl.					
<i>Cymbella minuta</i> Hilse ex. Rabh.					
<i>Cymbella naviculiformis</i> (Auers.) Cl.					
<i>Cymbella prostrata</i> (Berk.) Cl.					
<i>Cymbella proxima</i> Reimer	0.1 ±0.1				
<i>Cymbella silesiaca</i> Bleisch in Rabh.	1.8 ±0.4		0.2 ±0.2	0.8 ±0.5	

APPENDIX TABLE 1k (Cont.).

TAXA	Sagenhen below 12VII01	Parker Cr below 26VII01	Squaw Cr N Fork 9VII01	E. Martis 10VI01	S. Fork Squaw 9VII01
<i>Cymbella subcuspidata</i> Krammer					
<i>Cymbella tumida</i> (Breb.) Van Heurck					
<i>Cymbella tumidula</i> Grun.					
<i>Cymbellonitzschia diluviana</i> Hust.					
<i>Denticula elegans</i> Kütz.					
<i>Diatoma hyemalis</i> (Roth) Heiberg					
<i>Diatoma mesodon</i> (Ehr.) Kütz.	0.2 ±0.1	0.5 ±0.2		0.8 ±0.6	0.1 ±0.1
<i>Diatoma tenuis</i> Ag.					
<i>Diatoma vulgare</i> Bory					
<i>Didymosphenia geminata</i> (Lyngbye) M. Schmidt					
<i>Diploneis elliptica</i> (Kütz.) Cl.					
<i>Diploneis oblongella</i> (Naeg. ex. Kütz) Ross			0.2 ±0.2		
<i>Diploneis ovalis</i> (Hilse) Cl.	0.1 ±0.1			0.1 ±0.1	0.1 ±0.1
<i>Encyonopsis microcephala</i> (Grun.) Krammer		0.1 ±0.1			
<i>Epithemia adnata</i> (Kütz.) Bréb.	0.1 ±0.1	0.2 ±0.2		0.5 ±0.4	1.0 ±0.6
<i>Epithemia argus</i> (Ehr.) Kütz.					1.2 ±1.1
<i>Epithemia argus</i> var. <i>alpestris</i> (W. Sm.) Grun.			0.3 ±0.3		
<i>Epithemia sorex</i> Kütz.					
<i>Epithemia turgida</i> (Ehr.) Kütz.					
<i>Epithemia turgida</i> var. <i>westermanni</i> (Grun.) Ehr.					
<i>Eunotia</i>					0.3 ±0.3
<i>Eunotia bilunaris</i> (Ehr.) Mills.		0.1 ±0.1		0.3 ±0.3	0.6 ±0.3
<i>Eunotia pectinatus</i> (Dillw.) Rabh.					
<i>Fragilaria arcus</i> (Ehr.) Cl.			0.3 ±0.1		7.7 ±2.1
<i>Fragilaria bicapitata</i> A. Moyer					
<i>Fragilaria capucina</i> Desm.	4.2 ±1.7	3.1 ±1.2	0.2 ±0.2	1.7 ±0.5	2.7 ±1.5

APPENDIX TABLE 1k (Cont.).

TAXA	Sagenhen below 12VII01	Parker Cr below 26VII01	Squaw Cr N Fork 9VII01	E. Martis 10VI01	S. Fork Squaw 9VII01
<i>Fragilaria capucina</i> var. <i>capitellata</i> (Grun.) Lange-Bertalot					
<i>Fragilaria capucina</i> var. <i>gracilis</i> (Oestrup) Hust.					
<i>Fragilaria capucina</i> var. <i>rumpens</i> (Kütz.) Lange-Bertalot					
<i>Fragilaria capucina</i> var. <i>vaucheriae</i> (Kütz.) Lange-Bertalot	3.3 ±1.4	8.8 ±2.2	0.6 ±0.1	1.4 ±0.4	2.2 ±1.0
<i>Fragilaria crotonensis</i> Kitt.		4.1 ±0.7		0.9 ±0.5	
<i>Fragilaria cycloporum</i> (Brutschy) Lange-Bertalot					
<i>Fragilaria leptostauron</i> (Ehr.) Hust.	0.2 ±0.1			0.2 ±0.2	
<i>Fragilaria mazamaensis</i> (Soveign) Lange-Bertalot					
<i>Fragilaria parasitica</i> (W. Sm.) Grun.	0.1 ±0.1				
<i>Fragilaria parasitica</i> var. <i>subconstricta</i> Grun.					
<i>Fragilaria robusta</i> (Ralfs.) Lange-Bertalot					
<i>Fragilaria tenera</i> (W. Sm.) Lange-Bertalot	0.3 ±0.2	0.9 ±0.4			
<i>Fragilaria ulna</i> (Nitzs.) Lange-Bertalot	4.7 ±1.9	2.7 ±0.7	0.7 ±0.4	4.7 ±0.8	5.1 ±1.3
<i>Fragilaria ulna</i> var. <i>arcus</i> (Kütz.) Lange-Bertalot					
<i>Fragilariformis virescens</i> (Ralfs) Williams & Round.					
<i>Frustulia rhomboides</i> (Ehr.) DeToni					
<i>Frustulia vulgaris</i> (Thwaites) DeT.					
<i>Gomphoneis herculeana</i> (Ehr.) Cl.	0.3 ±0.2	0.9 ±0.4	0.7 ±0.4	1.0 ±0.3	
<i>Gomphonema accuminatum</i> Ehr.					
<i>Gomphonema affine</i> Kütz.					
<i>Gomphonema angustum</i> Ag.					
<i>Gomphonema clavatum</i> Ehr.					
<i>Gomphonema clevei</i> Fricke	6.5 ±0.3	2.0 ±0.4	17.8 ±10.8	8.3 ±1.6	5.5 ±3.1

APPENDIX TABLE 1k (Cont.).

TAXA	Sagenhen below 12VII01	Parker Cr below 26VII01	Squaw Cr N Fork 9VII01	E. Martis 10VI01	S. Fork Squaw 9VII01
<i>Gomphonema gracile</i> Ehr.					
<i>Gomphonema minuta</i> (C. Ag.) C. Ag.					
<i>Gomphonema olivaceum</i> (Horn.) Bréb.					
<i>Gomphonema parvulum</i> Kütz.	0.4 ±0.1		0.5 ±0.2	0.1 ±0.1	3.0 ±0.3
<i>Gomphonema subtile</i> Ehr.					
<i>Gomphonema truncatum</i> (Cl. Ag.) Cl. Ag.	0.5 ±0.2	0.1 ±0.1		0.2 ±0.2	1.1 ±1.1
<i>Gomphonema ventricosum</i> Greg. cf. <i>Grammatophora</i>					
<i>Gyrosigma acummatum</i> (Kütz.) Rabh.					
<i>Hantzschia amphioxys</i> (Ehr.) Grun.					
<i>Hippodonta capitata</i> (Ehr.) Lange-Bertalot					
<i>Karayevia clevei</i> (Grun.) Round & Bukhtiyarova		1.1 ±0.5			
<i>Luticola goeppertinana</i> (Bleisch) Mann					
<i>Luticola mutica</i> (Kütz.) Mann					
<i>Mastogloia smithii</i> Thwaites					
<i>Melosira varians</i> Ag.	3.8 ±0.7			1.5 ±0.8	
<i>Meridion circulare</i> (Grev.) Ag.			0.1 ±0.1	0.2 ±0.2	
<i>Meridion circulare</i> var. <i>constrictum</i> (Ralfs.) Van Heurck					
<i>Navicula angusta</i> Grun.					
<i>Navicula arenaria</i> Donk.					
<i>Navicula arvensis</i> Hust.					
<i>Navicula bryophila</i> Boye Petersen					
<i>Navicula capitatoradiata</i> Germain	0.4 ±0.4				1.2 ±1.1
<i>Navicula cari</i> Ehr.					
<i>Navicula cincta</i> (Ehr.) Ralfs					
<i>Navicula clematis</i> Grun.					

APPENDIX TABLE 1k (Cont.)

TAXA	Sagenhen below	Parker Cr below	Squaw Cr N Fork	E. Martis	S. Fork Squaw
	12VII01	26VII01	9VII01	10VI01	9VII01
<i>Navicula cryptocephala</i> Kütz	0.9 ±0.3	0.8 ±0.3	0.3 ±0.2	0.3 ±0.2	0.6 ±0.6
<i>Navicula cryptonella</i> Lange-Bertalot					
<i>Navicula cuspidata</i> Kütz. (Kütz.)					
<i>Navicula declivis</i> Hust.					
<i>Navicula decussis</i> Østrup.					
<i>Navicula dentata</i> Hust.					
<i>Navicula elginensis</i> (Greg.) Ralfs.					
<i>Navicula erifuga</i> Lange-Bertalot					
<i>Navicula expecta</i> Van Land.					
<i>Navicula gregaria</i> Donk.					
<i>Navicula heufleriana</i> (Grun.) Grun.					
<i>Navicula incerta</i> Lange-Bertalot					
<i>Navicula indifferens</i> Hust.					
<i>Navicula lanceolata</i> (Ag.) Kütz.					
<i>Navicula laterostrata</i> Hust.					
<i>Navicula libonensis</i> Schoemann					
<i>Navicula minuscula</i> Grun.					
<i>Navicula protracta</i> (Grun.) Cl.					
<i>Navicula pygmaea</i> Kütz.					
<i>Navicula radiosa</i> Kütz.	1.0 ±0.3			0.6 ±0.1	2.3 ±0.8
<i>Navicula reinhardtii</i> Grun.					
<i>Navicula rhynchocephala</i> Kütz.					
<i>Navicula rotundra</i> Hust.					
<i>Navicula salinarum</i> Grun.					
<i>Navicula schoenfeldii</i> Hust.					
<i>Navicula schroeterii</i> Meister					
<i>Navicula seminulum</i> Grun.					
cf. <i>Navicula splendicula</i> Van Land.					

APPENDIX TABLE 1k (Cont.).

TAXA	Sagenhen below 12VII01	Parker Cr below 26VII01	Squaw Cr N Fork 9VII01	E. Martis 10VI01	S. Fork Squaw 9VII01
<i>Navicula cryptocephala</i> Kütz	0.9 ±0.3	0.8 ±0.3	0.3 ±0.2	0.3 ±0.2	0.6 ±0.6
<i>Navicula cryptonella</i> Lange-Bertalot					
<i>Navicula cuspidata</i> Kütz. (Kütz.)					
<i>Navicula declivis</i> Hust.					
<i>Navicula subrotundata</i> Hust.					
<i>Navicula tenelloides</i> Hust.					
<i>Navicula tridentula</i> Krasske					
<i>Navicula tripunctata</i> (O.F. Müll) Bory					
<i>Navicula variostrata</i> Krasske					
<i>Navicula veneta</i> Kütz.	7.8 ±1.1	1.3 ±0.4	0.3 ±0.1	2.1 ±1.2	
<i>Nitzschia acicularis</i> W. Sm					
<i>Nitzschia amphibia</i> Grun.	0.1 ±0.1			2.8 ±1.4	4.2 ±0.9
<i>Nitzschia capitellata</i> Hust.					
<i>Nitzschia compressa</i> (Bailey) Boyer					
<i>Navicula declivis</i> Hust.					
<i>Nitzschia dissipata</i> (Kütz.) Kütz.	8.2 ±1.1	1.6 ±1.1	0.7 ±0.1	7.0 ±1.7	
<i>Nitzschia epithemoides</i> Grun.					
<i>Nitzschia filiformis</i> (W. Sm.) Hust.					
<i>Nitzschia fonticola</i> Grun.	0.1 ±0.1				
<i>Nitzschia frustulum</i> Kütz.	8.6 ±0.7	2.0 ±0.9	0.3 ±0.3	11.0 ±1.0	
<i>Nitzschia gracilis</i> Hantz.	0.2 ±0.2	1.5 ±1.1			
<i>Nitzschia heufleriana</i> Grun.					
<i>Nitzschia hybrida</i> Grun.					
<i>Nitzschia inconspicua</i> Grun.					
<i>Nitzschia linearis</i> W. Sm.					

APPENDIX TABLE 1k (Cont.).

TAXA	Sagenhen below	Parker Cr below	Squaw Cr N Fork	E. Martis	S. Fork Squaw
	12VII01	26VII01	9VII01	10VI01	9VII01
<i>Nitzschia palea</i> (Kütz.) W. Sm.	12.7 ±0.6	0.2±0.2		11.5 ±4.3	
<i>Nitzschia parvula</i> W. Sm.					
<i>Nitzschia pellucida</i> Grun.					
<i>Nitzschia sigma</i> (Kütz.) W. Sm.	0.5 ±0.5			0.2 ±0.2	
<i>Nitzschia sigmaidea</i> (Nitz.) W. Sm.	3.8 ±0.5	0.1 ±0.1		3.6 ±0.6	0.4 ±0.2
<i>Nitzschia sinuata</i> var. <i>delognei</i> (Grun.) Lange-Bertalot					
<i>Nitzschia umbonata</i> (Ehr.) Lange-Bertalot					
<i>Nitzschia vermicularis</i> (Kütz.) Hantz.					
<i>Opephora olsenii</i> Moller					
<i>Pinnularia borealis</i> Ehr.					
<i>Pinnularia brevicostata</i> Cl.					
<i>Pinnularia divergens</i> W. Sm.					0.1 ±0.1
<i>Pinnularia divergentissima</i> (Grun.) Cl.		0.1 ±0.1			
<i>Pinnularia gibba</i> Ehr.					
<i>Pinnularia gibba</i> var. <i>linearis</i> Ehr.					
<i>Pinnularia interrupta</i> W. Sm.					
<i>Pinnularia lagerstedtii</i> (Cl.) Cl.- Euler					
<i>Pinnularia lata</i> (Bréb.) W. Sm.				0.1 ±0.1	
<i>Pinnularia maior</i> (Kütz.) Rabh.					
<i>Pinnularia nodosa</i> Ehr.					
<i>Pinnularia obscura</i> Krasske					
<i>Pinnularia similis</i> Hust.					
<i>Pinnularia stromatophora</i> (Grun.) Cl.					
<i>Pinnularia subcapitata</i> Greg.					
<i>Pinnularia viridis</i> (Nitz.) Ehr.					0.1 ±0.1
<i>Planothidium delicatula</i> (Kütz.) Round & Bukhtiyarova					

APPENDIX TABLE 1k (Cont.).

TAXA	Sagenhen below	Parker Cr below	Squaw Cr N Fork	E. Martis	S. Fork Squaw
	12VII01	26VII01	9VII01	10VI01	9VII01
<i>Planoth. lanceolata</i> (Breb.) Round & Bukhtiyarova	4.7 ±0.2	1.6 ±0.2	0.2 ±0.2	5.0 ±2.6	1.4 ±0.9
<i>Planothidium lanceolata</i> var. <i>dubia</i> (Grun.) Lange-Bertalot					
<i>Pseudostaurosira brevistriata</i> (Grun.) Williams & Round	0.7 ±0.4		0.1 ±0.1		
<i>Reimeria sinuata</i> (Greg.) Kociolek & Stoermer	2.1 ±0.4	0.3 ±0.2	0.1 ±0.1	1.6 ±0.8	
<i>Rhopalodia gibba</i> (Ehr.) O. Müll.				0.2 ±0.2	0.8 ±0.8
<i>Rhopalodia gibberula</i> (Ehr.) O. Müll.					
<i>Rhoicosphenia abbreviata</i> (Ag.) Lange-Bertalot	2.1 ±0.8	0.1 ±0.1		2.3 ±1.1	0.1 ±0.1
<i>Sellaphora pupula</i> (Kütz.) Gell et al.	0.2 ±0.2	0.1 ±0.1		0.3 ±0.2	
<i>Stauroneis anceps</i> Ehr.					
<i>Stauroneis kriegerii</i> Patrick					
<i>Stauroneis phoenicenteron</i> (Nitz.) Ehr.	0.2 ±0.1				
<i>Stauroneis smithii</i> Grun.					
<i>Staurosira construens</i> (Ehr.) Hust.		0.4 ±0.4			
<i>Staurosira construens</i> f. <i>binodis</i> (Ehr.) Hust.					
<i>Staurosira construens</i> var. <i>venter</i> (Ehr.) Hust.	0.5 ±0.5	9.2 ±3.0	0.3 ±0.3	5.9 ±2.3	
<i>Staurosirella pinnata</i> (Ehr.) Williams & Round				0.6 ±0.5	
<i>Stephanodiscus hantzschii</i> Grun. (<i>in Cl. & Grun.</i>)					
<i>Stephanodiscus niagare</i> Ehr.		0.1 ±0.1			
<i>Surirella angustata</i> Kütz.	1.2 ±0.5			0.4 ±0.2	
<i>Surirella brebissonii</i> Krammer & Lange-Bertalot				0.1 ±0.1	
<i>Surirella ovalis</i> Breb.					
<i>Surirella striatula</i> Turp.					
<i>Surirella tenera</i> Greg.					0.3 ±0.3
<i>Tabellaria fenestrata</i> (Lyngb.) Grun.		0.1 ±0.1			
<i>Tabellaria flocculosa</i> (Roth) Kütz.					
<i>Tetracyclus rupestris</i> (Braun.) Grun.		0.2 ±0.2			0.1 ±0.1

APPENDIX TABLE 11. Relative % (\pm SE) frequency of diatoms and collection dates for selected streams in the Lahontan Basin, USA. Species acronyms are in parentheses.

TAXA	Cold Cr below 23VIII01	Hot Springs 22VIII01	Little Truckee 13VII01	Taylor Cr 31VII01	Lacey Cr 12V1101	Perrazo Cr 12V1101
<i>Achnanthes exigua</i> Grun.	0.8 \pm 0.8		0.2 \pm 0.2	0.2 \pm 0.2		
<i>Achnanthes hungarica</i> Grun.						
<i>Achnanthes laevis</i> Oestrup						
<i>Achnanthes laterostrata</i> Hust.						
<i>Achnanthes linearis</i> (W. Sm.) Grun.						
<i>Achnanthidium minutissima</i> (Kütz.) Czar.	12.0 \pm 2.2	7.5 \pm 3.3	3.9 \pm 1.1	38.0 \pm 7.7	12.3 \pm 4.9	0.7 \pm 0.3
<i>Amphipleura pellucida</i> (Kütz.) Kütz.						
<i>Amphora coffeaeformis</i> (Ag.) Kütz						
<i>Amphora ovalis</i> (Kütz.) Kütz.						
<i>Amphora pediculus</i> (Kütz.) Grun	0.1 \pm 0.1	0.7 \pm 0.5	0.2 \pm 0.2			
<i>Amphora veneta</i> Kütz.						
<i>Anomoeoneis sphaerophora</i> (Ehr.) Pfitz.						
<i>Anomoeoneis sphaerophora</i> f. <i>costata</i> (Kütz.) Schmid.						
<i>Anomoeoneis vitrea</i> (Grun.) Grun.						
<i>Asterionella formosa</i> Hass.						
<i>Aulocoseira ambigua</i> (Grun.) Simon.	4.7 \pm 0.7	0.2 \pm 0.2	6.6 \pm 2.8	1.8 \pm 0.4		0.8 \pm 0.5
<i>Aulocoseira distans</i> (Ehr.) Simonsen				1.0 \pm 0.7		1.3 \pm 0.7
<i>Aulocoseira granulata</i> (Ehr.) Simonsen						
<i>Aulacoseira islandica</i> O. Muell.	0.5 \pm 0.5		2.7 \pm 2.7			
<i>Aulacoseira italica</i> (Ehr.) Simon.			2.7 \pm 2.5			
<i>Caloneis amphisbaena</i> (Bory) Cl.						
<i>Caloneis bacillum</i> (Grun.) Cl.	1.8 \pm 1.8.					
<i>Caloneis molaris</i> (Grun.) Krammer						
<i>Caloneis schumanniana</i> (Grun.) Cl.						

APPENDIX TABLE 11. (Cont.)

TAXA	Cold Cr below 23VIII01	Hot Springs 22VIII01	Little Truckee 13VII01	Taylor Cr 31VII01	Lacey Cr 12V1101	Perrazo Cr 12V1101
<i>Caloneis silicula</i> (Ehr.) Cl.	0.7 ±0.7	0.2 ±0.2	0.6 ±0.4			
<i>Caloneis sublinearis</i> (Grun.) Krammer						
<i>Caloneis tenuis</i> (Greg.) Krammer						
<i>Cocconeis pediculus</i> Kütz.						
<i>Cocconeis placentula</i> Ehr.						
<i>Cocconeis placentula</i> var. <i>euglypta</i> (Ehr.) Cl.	28.9 ±11.0	27.2 ±3.7	3.6 ±0.3	6.8 ±3.1	4.7 ±1.3	8.4 ±2.9
<i>Cocconeis placentula</i> var. <i>lineata</i> (Ehr.) V.H.						
<i>Cocconeis placentula</i> var. <i>pseudolineata</i> Geitler						
<i>Ctenophora pulchella</i> (Ralfs) Williams & Round						
<i>Cyclotella meneghiniana</i> Kütz.			0.2 ±0.2			
<i>Cyclotella stelligera</i> Cl. & Grun.	0.1 ±0.1		0.3 ±0.3	0.2 ±0.2	0.8 ±0.5	0.2 ±0.2
<i>Cyclostephanos novaezeelandiae</i> (Cl.) Round						
<i>Cymatopleura solea</i> (Bréb) W. Sm.						
<i>Cymbella affinis</i> Kütz.	2.0 ±1.0	2.3 ±0.6	7.4 ±1.7	7.4 ±1.1	6.5 ±2.1	10.1 ±0.7
<i>Cymbella amphicephala</i> Naeg. ex Kütz.			0.5 ±0.3			
<i>Cymbella aspera</i> (Ehr.) Cl.						
<i>Cymbella cistula</i> (Ehr.) Kirch.				0.2 ±0.2		
<i>Cymbella cymbiformis</i> var. <i>nonpunctata</i> Fontell						
<i>Cymbella gracilis</i> (Ehr.) Kütz.						
<i>Cymbella latens</i> Krasske						
<i>Cymbella mexicana</i> (Ehr.) Cl.						
<i>Cymbella minuta</i> Hilse ex. Rabh.						
<i>Cymbella naviculiformis</i> (Auers.) Cl.						
<i>Cymbella prostrata</i> (Berk.) Cl.						
<i>Cymbella proxima</i> Reimer						
<i>Cymbella silesiaca</i> Bleisch in Rabh.						
<i>Cymbella subcuspidata</i> Krammer						
<i>Cymbella tumida</i> (Breb.) Van Heurck						

APPENDIX TABLE 11. (Cont.)

TAXA	Cold Cr below 23VIII01	Hot Springs 22VIII01	Little Truckee 13VII01	Taylor Cr 31VII01	Lacey Cr 12V1101	Perrazo Cr 12V1101
<i>Cymbella tumidula</i> Grun.						
<i>Cymbellonitzschia diluviana</i> Hust.						
<i>Denticula elegans</i> Kütz.				0.5 ±0.5		
<i>Diatoma hyemalis</i> (Roth) Heiberg						
<i>Diatoma mesodon</i> (Ehr.) Kütz.	1.3 ±1.2		0.3 ±0.2		1.1 ±0.5	0.2 ±0.2
<i>Diatoma tenuis</i> Ag.						
<i>Diatoma vulgare</i> Bory						
<i>Didymosphenia geminata</i> (Lyngbye) M. Schmidt				0.2 ±0.2		
<i>Diploneis elliptica</i> (Kütz.) Cl.						
<i>Diploneis oblongella</i> (Naeg. ex. Kütz) Ross						
<i>Diploneis ovalis</i> (Hilse) Cl.						
<i>Encyonopsis microcephala</i> (Grun.) Krammer		0.3 ±0.3				
<i>Epithemia adnata</i> (Kütz.) Bréb.	0.6 ±0.6	1.1 ±0.3			0.2 ±0.2	0.4 ±0.3
<i>Epithemia argus</i> (Ehr.) Kütz.			0.5 ±0.5			
<i>Epithemia argus</i> var. <i>alpestris</i> (W. Sm.) Grun.						
<i>Epithemia sorex</i> Kütz.			2.1 ±1.3			
<i>Epithemia turgida</i> (Ehr.) Kütz.						
<i>Epithemia turgida</i> var. <i>westermanni</i> (Grun.) Ehr.						
<i>Eunotia</i>						
<i>Eunotia bilunaris</i> (Ehr.) Mills.	4.0 ±1.3		0.3 ±0.2		1.5 ±1.5	0.2 ±0.2
<i>Eunotia pectinatus</i> (Dillw.) Rabh.	0.5 ±0.5					
<i>Fragilaria arcus</i> (Ehr.) Cl.	0.1 ±0.1		0.4 ±0.1		15.1 ±2.6	2.0 ±0.9
<i>Fragilaria bicapitata</i> A. Moyer						
<i>Fragilaria capucina</i> Desm.	2.8 ±1.5	0.6 ±0.5	4.4 ±0.1	4.9 ±1.0	6.8 ±6.8	1.1 ±0.2
<i>Fragilaria capucina</i> var. <i>capitellata</i> (Grun.) Lange-Bertalot						
<i>Fragilaria capucina</i> var. <i>gracilis</i> (Oestrup) Hust.						

APPENDIX TABLE 11. (Cont.)

TAXA	Cold Cr below 23VIII01	Hot Springs 22VIII01	Little Truckee 13VII01	Taylor Cr 31VII01	Lacey Cr 12V1101	Perrazo Cr 12V1101
<i>Fragilaria capucina</i> var. <i>rumpens</i> (Kütz.) Lange-Bertalot						
<i>Fragilaria capucina</i> var. <i>vaucheriae</i> (Kütz.) Lange-Bertalot	2.8 ±1.6	2.6 ±0.2	1.3 ±0.5	0.6 ±0.4 1.6 ±0.8	6.3 ±0.2	1.1 ±0.3
<i>Fragilaria crotonensis</i> Kitt.						
<i>Fragilaria cycloporum</i> (Brutschy) Lange-Bertalot						
<i>Fragilaria leptostauron</i> (Ehr.) Hust.						
<i>Fragilaria mazamaensis</i> (Soveign) Lange-Bertalot						
<i>Fragilaria parasitica</i> (W. Sm.) Grun.						
<i>Fragilaria parasitica</i> var. <i>subconstricta</i> Grun.						
<i>Fragilaria robusta</i> (Ralfs.) Lange-Bertalot						
<i>Fragilaria tenera</i> (W. Sm.) Lange-Bertalot				3.5 ±1.0		
<i>Fragilaria ulna</i> (Nitzs.) Lange-Bertalot	1.8 ±0.6	1.9 ±0.3	4.2 ±1.3	3.5 ±0.3	6.9 ±1.1	38.0 ±7.9
<i>Fragilaria ulna</i> var. <i>arcus</i> (Kütz.) Lange-Bertalot						
<i>Fragilariformis virescens</i> (Ralfs.) Williams & Round						
<i>Frustulia rhomboides</i> (Ehr.) DeToni			0.2 ±0.2			0.1 ±0.1
<i>Frustulia vulgaris</i> (Thwaites) DeT.						
<i>Gomphoneis herculeana</i> (Ehr.) Cl.		0.1 ±0.1				
<i>Gomphonema acuminatum</i> Ehr.						
<i>Gomphonema affine</i> Kütz.						
<i>Gomphonema angustum</i> Ag.						
<i>Gomphonema clavatum</i> Ehr.						
<i>Gomphonema clevei</i> Fricke	4.7 ±2.0	29.8 ±6.3	15.4 ±2.3	2.1 ±1.1	20.6 ±4.9	20.4 ±4.4
<i>Gomphonema gracile</i> Ehr.						
<i>Gomphonema minuta</i> (C. Ag.) C. Ag.						
<i>Gomphonema olivaceum</i> (Horn.) Bréb.						

APPENDIX TABLE 11. (Cont.)

TAXA	Cold Cr below 23VIII01	Hot Springs 22VIII01	Little Truckee 13VII01	Taylor Cr 31VII01	Lacey Cr 12V1101	Perrazo Cr 12V1101
<i>Gomphonema parvulum</i> Kütz.	0.1 ±0.1	0.9 ±0.2	1.0 ±0.1		0.8 ±0.4	9.9 ±4.6
<i>Gomphonema subtile</i> Ehr.						
<i>Gomphonema truncatum</i> (Cl. Ag.) Cl. Ag.						
<i>Gomphonema ventricosum</i> Greg. cf. <i>Grammatophora</i>						
<i>Gyrosigma acumdatum</i> (Kütz.) Rabh.						
<i>Hantzschia amphioxys</i> (Ehr.) Grun.						
<i>Hippodonta capitata</i> (Ehr.) Lange-Bertalot						
<i>Karayevia clevei</i> (Grun.) Round & Bukhtiyarova						
<i>Luticola goeppertinana</i> (Bleisch) Mann						
<i>Luticola mutica</i> (Kütz.) Mann			0.2 ±0.2			
<i>Mastogloia smithii</i> Thwaites						
<i>Melosira varians</i> Ag.	1.2 ±1.2	0.5 ±0.5	0.1 ±0.1			0.1 ±0.1
<i>Meridion circulare</i> (Grev.) Ag.	0.1 ±0.1		1.6 ±0.5		3.3 ±1.3	0.7 ±0.1
<i>Meridion circulare</i> var. <i>constrictum</i> (Ralfs.) Van Heurck						
<i>Navicula angusta</i> Grun.						
<i>Navicula arenaria</i> Donk.						
<i>Navicula arvensis</i> Hust.						0.1 ±0.1
<i>Navicula bryophila</i> Boye Petersen						
<i>Navicula capitatoradiata</i> Germain						
<i>Navicula cari</i> Ehr.						
<i>Navicula clematis</i> Grun.						
<i>Navicula cryptocephala</i> Kütz	0.6 ±0.3		1.3 ±0.4	1.4 ±0.6	0.2 ±0.2	0.1 ±0.1
<i>Navicula cryptonella</i> Lange-Bertalot						
<i>Navicula cuspidata</i> Kütz. (Kütz.)						
<i>Navicula declivis</i> Hust.		0.1 ±0.1				
<i>Navicula decussis</i> Østrup.						

APPENDIX TABLE 11. (Cont.)

TAXA	Cold Cr below 23VIII01	Hot Springs 22VIII01	Little Truckee 13VII01	Taylor Cr 31VII01	Lacey Cr 12V1101	Perrazo Cr 12V1101
<i>Navicula dentata</i> Hust.						
<i>Navicula elginensis</i> (Greg.) Ralfs.						
<i>Navicula erifuga</i> Lange-Bertalot						
<i>Navicula expecta</i> Van Land.						
<i>Navicula gregaria</i> Donk.						
<i>Navicula heufleriana</i> (Grun.) Grun.						
<i>Navicula incerta</i> Lange-Bertalot						
<i>Navicula indifferens</i> Hust.						
<i>Navicula lanceolata</i> (Ag.) Kütz.						
<i>Navicula laterostrata</i> Hust.	0.3 ±0.3					
<i>Navicula libonensis</i> Schoemann						
<i>Navicula minuscula</i> Grun.						
<i>Navicula protracta</i> (Grun.) Cl.						
<i>Navicula pygmaea</i> Kütz.						
<i>Navicula radiosa</i> Kütz.		0.1 ±0.1	0.3 ±0.3		1.5 ±0.4	
<i>Navicula reinhardtii</i> Grun.						
<i>Navicula rhynchocephala</i> Kütz.			0.2 ±0.2			
<i>Navicula rotundra</i> Hust.						
<i>Navicula salinarum</i> Grun.		0.4 ±0.4	0.1 ±0.1			
<i>Navicula schoenfeldii</i> Hust.						
<i>Navicula schroeterii</i> Meister						
<i>Navicula seminulum</i> Grun.						
<i>cf. Navicula splendidula</i> Van Land.	0.3 ±0.3					
<i>Navicula subminiscula</i> Mang.						
<i>Navicula subrhynchocephala</i> Hust.						
<i>Navicula subrotundata</i> Hust.						
<i>Navicula tenelloides</i> Hust.						
<i>Navicula tridentula</i> Krasske						

APPENDIX TABLE 11 (Cont.)

TAXA	Cold Cr below 23VIII01	Hot Springs 22VIII01	Little Truckee 13VII01	Taylor Cr 31VII01	Lacey Cr 12V1101	Perrazo Cr 12V1101
<i>Navicula tripunctata</i> (O.F. Müll) Bory						
<i>Navicula variostrata</i> Krasske						
<i>Navicula veneta</i> Kütz.	1.2 ±0.3		1.4 ±0.4		1.5 ±0	0.1 ±0.1
<i>Nitzschia acicularis</i> W. Sm		1.1 ±0.8	0.9 ±0.4			0.1 ±0.1
<i>Nitzschia amphibia</i> Grun.	0.1 ±0.1		0.2 ±0.2	0.2 ±0.2		0.2 ±0.2
<i>Nitzschia capitellata</i> Hust.						
<i>Nitzschia compressa</i> (Bailey) Boyer						
<i>Nitzschia dissipata</i> (Kütz.) Kütz.	8.0 ±1.8	3.3 ±0.8	7.5 ±1.2	0.5 ±0.5	1.8 ±0.8	1.2 ±0.7
<i>Nitzschia epithemoides</i> Grun.						
<i>Nitzschia filiformis</i> (W. Sm.) Hust.						
<i>Nitzschia fonticola</i> Grun.						
<i>Nitzschia frustulum</i> Kütz.	1.2 ±0.4		2.0 ±0.2	1.3 ±0.7		0.1 ±0.1
<i>Nitzschia gracilis</i> Hantz.		2.1 ±1.7				
<i>Nitzschia heufleriana</i> Grun.						
<i>Nitzschia hybrida</i> Grun.						
<i>Nitzschia inconspicua</i> Grun.						
<i>Nitzschia linearis</i> W. Sm.						
<i>Nitzschia palea</i> (Kütz.) W. Sm.	0.1 ±0.1	2.8 ±1.5	5.0 ±1.0			0.5 ±0.2
<i>Nitzschia parvula</i> W. Sm.						
<i>Nitzschia pellucida</i> Grun.						
<i>Nitzschia sigma</i> (Kütz.) W. Sm.	0.1 ±0.1	0.4 ±0.2				
<i>Nitzschia sigmoidea</i> (Nitz.) W. Sm.	0.3 ±0.3	0.8 ±0.8	1.3 ±0.2			0.1 ±0.1
<i>Nitzschia sinuata</i> var. <i>delognei</i> (Grun.) Lange-Bertalot						
<i>Nitzschia umbonata</i> (Ehr.) Lange-Bertalot						
<i>Nitzschia vermicularis</i> (Kütz.) Hantz.						
<i>Opephora olsenii</i> Moller						
<i>Pinnularia borealis</i> Ehr.						

APPENDIX TABLE 11. (Cont.)

TAXA	Cold Cr below 23VIII01	Hot Springs 22VIII01	Little Truckee 13VII01	Taylor Cr 31VII01	Lacey Cr 12V1101	Perrazo Cr 12V1101
<i>Pinnularia brevicostata</i> Cl.						
<i>Pinnularia divergens</i> W. Sm.	0.9 ±0.9					
<i>Pinnularia divergentissima</i> (Grun.) Cl.						
<i>Pinnularia gibba</i> Ehr.	0.4 ±0.4		0.3 ±0.2			0.5 ±0.1
<i>Pinnularia gibba</i> var. <i>linearis</i> Ehr.						
<i>Pinnularia interrupta</i> W. Sm.				0.2 ±0.2		
<i>Pinnularia lagerstedtii</i> (Cl.) Cl.- Euler						
<i>Pinnularia lata</i> (Bréb.) W. Sm.					0.5 ±0.5	0.1 ±0.1
<i>Pinnularia maior</i> (Kütz.) Rabh.						
<i>Pinnularia nodosa</i> Ehr.	0.3 ±0.3					
<i>Pinnularia obscura</i> Krasske						
<i>Pinnularia similis</i> Hust.			0.2 ±0.2			
<i>Pinnularia stromatophora</i> (Grun.) Cl.						
<i>Pinnularia subcapitata</i> Greg.						
<i>Pinnularia viridis</i> (Nitz.) Ehr.						
<i>Planothidium delicatula</i> (Kütz.) Round & Bukhtiyarova						
<i>Planothidium lanceolata</i> (Breb.) Round & Bukhtiyarova	8.7 ±0.7	3.7 ±0.8	4.7 ±0.7	1.4 ±0.5	3.2 ±0.8	0.8 ±0.4
<i>Planothidium lanceolata</i> var. <i>dubia</i> (Grun.) Lange-Bertalot						
<i>Pseudostaurosira brevistriata</i> (Grun.) Williams & Round	0.3 ±0.3		0.5 ±0.5	1.3 ±0.7	0.2 ±0.2	0.1 ±0.1
<i>Reimeria sinuata</i> (Greg.) Kociolek & Stoermer	0.1 ±0.1	1.1 ±0.1			0.8 ±0.8	0.1 ±0.1
<i>Rhopalodia gibba</i> (Ehr.) O. Müll.	0.3 ±0.3	0.3 ±0.2	1.4 ±0.7			0.3 ±0.2
<i>Rhopalodia gibberula</i> (Ehr.) O. Müll.						
<i>Rhoicosphenia abbreviata</i> (Ag.) Lange-Bertalot	2.9 ±0.2	7.4 ±0.8	1.2 ±0.7		1.1 ±1.1	
<i>Sellaphora pupula</i> (Kütz.) Gell et al.		0.2 ±0.2	0.2 ±0.2			

APPENDIX TABLE 11. (Cont.)

TAXA	Cold Cr below 23VIII01	Hot Springs 22VIII01	Little Truckee 13VII01	Taylor Cr 31VII01	Lacey Cr 12V1101	Perrazo Cr 12V1101
<i>Stauroneis anceps</i> Ehr.						
<i>Stauroneis kriegerii</i> Patrick						
<i>Stauroneis phoenicenteron</i> (Nitz.) Ehr.					0.2 ±0.2	0.2 ±0.2
<i>Stauroneis smithii</i> Grun.						
<i>Staurosira construens</i> (Ehr.) Hust.						
<i>Staurosira construens</i> f. <i>binodis</i> (Ehr.) Hust.						
<i>Staurosira construens</i> var. <i>venter</i> (Ehr.) Hust.	2.9 ±2.1	0.3 ±0.3	8.3 ±1.3		0.8 ±0.8	
<i>Staurosirella pinnata</i> (Ehr.) Williams & Round			0.5 ±0.5	4.3 ±2.3		0.5 ±0.5
<i>Stephanodiscus hantzschii</i> Grun. (in Cl. & Grun.)						
<i>Stephanodiscus niagare</i> Ehr.						
<i>Surirella angustata</i> Kütz.						
<i>Surirella brebissonii</i> Krammer & Lange-Bertalot						
<i>Surirella ovalis</i> Breb.						
<i>Surirella striatula</i> Turp.						
<i>Surirella tenera</i> Greg.						
<i>Tabellaria fenestrata</i> (Lyngb.) Grun.			1.5 ±1.2	7.2 ±3.3		
<i>Tabellaria flocculosa</i> (Roth) Kütz.				4.5 ±2.1		
<i>Tetracyclus rupestris</i> (Braun.) Grun.	0.2 ±0.2					

APPENDIX TABLE 1m. Relative % (\pm SE) frequency of diatoms and collection dates for selected streams in the Lahontan Basin, USA. Species acronyms are in parentheses.

TAXA	Bear Cr 10VII01	Prosser Cr 11VII01	Alder Cr 11VII01	Juniper Cr 10VII01	Independence 13VII01	Trout Cr below 23VIII01
<i>Achnanthes exigua</i> Grun.						0.2 \pm 0.2
<i>Achnanthes hungarica</i> Grun.						
<i>Achnanthes laevis</i> Oestrup						
<i>Achnanthes laterostrata</i> Hust.						
<i>Achnanthes linearis</i> (W. Sm.) Grun.						
<i>Achnanthidium minutissima</i> (Kütz.) Czar.	14.5 \pm 0.9	18.1 \pm 4.9	6.7 \pm 2.4	3.6 \pm 1.5	9.2 \pm 1.2	7.6 \pm 2.8
<i>Amphipleura pellucida</i> (Kütz.) Kütz.	0.2 \pm 0.2			2.6 \pm 0.8		
<i>Amphora coffeaeformis</i> (Ag.) Kütz						
<i>Amphora ovalis</i> (Kütz.) Kütz.						
<i>Amphora pediculus</i> (Kütz.) Grun					0.1 \pm 0.1	0.1 \pm 0.1
<i>Amphora veneta</i> Kütz.						
<i>Anomoeoneis sphaerophora</i> (Ehr.) Pfitz.		0.1 \pm 0.1				
<i>Anomoeoneis sphaerophora</i> f. <i>costata</i> (Kütz.) Schmid.						
<i>Anomoeoneis vitrea</i> (Grun.) Grun.						
<i>Asterionella formosa</i> Hass.						
<i>Aulocoseira ambigua</i> (Grun.) Simon.		0.7 \pm 0.7			3.4 \pm 1.3	
<i>Aulocoseira distans</i> (Ehr.) Simonsen						
<i>Aulocoseira granulata</i> (Ehr.) Simonsen						1.5 \pm 0.3
<i>Aulacoseira islandica</i> O. Muell.						
<i>Aulacoseira italica</i> (Ehr.) Simon.						
<i>Caloneis amphisbaena</i> (Bory) Cl.						
<i>Caloneis bacillum</i> (Grun.) Cl.				0.3 \pm 0.3		
<i>Caloneis molaris</i> (Grun.) Krammer						
<i>Caloneis schumanniana</i> (Grun.) Cl.						

APPENDIX TABLE 1m (Cont.)

TAXA	Bear Cr 10VII01	Prosser Cr 11VII01	Alder Cr 11VII01	Juniper Cr 10VII01	Independence 13VII01	Trout Cr below 23VIII01
<i>Caloneis silicula</i> (Ehr.) Cl.				0.5 ±0.3	0.6 ±0.6	0.9 ±0.3
<i>Caloneis sublinearis</i> (Grun.) Krammer						
<i>Caloneis tenuis</i> (Greg.) Krammer						
<i>Cocconeis pediculus</i> Kütz.						
<i>Cocconeis placentula</i> Ehr.						
<i>Cocconeis placentula</i> var. <i>euglypta</i> (Ehr.) Cl.	9.9 ±0.3	21.5 ±0.6	1.6 ±0.5	28.5 ±3.1	26.7 ±2.9	43.8 ±4.8
<i>Cocconeis placentula</i> var. <i>lineata</i> (Ehr.) V.H.						
<i>Cocconeis placentula</i> var. <i>pseudolineata</i> Geitler						
<i>Ctenophora pulchella</i> (Ralfs) Williams & Round						
<i>Cyclotella meneghiniana</i> Kütz.			3.8 ±0.6			
<i>Cyclotella stelligera</i> Cl. & Grun.		0.1 ±0.1			1.0 ±0.6	
<i>Cyclostephanos novaezealandiae</i> (Cl.) Round						
<i>Cymatopleura solea</i> (Bréb) W. Sm.						
<i>Cymbella affinis</i> Kütz.	3.3 ±1.7	1.0 ±0.5	8.4 ±1.3	0.3 ±0.3	11.1 ±2.5	0.3 ±0.2
<i>Cymbella amphicephala</i> Naeg. ex. Kütz.						
<i>Cymbella aspera</i> (Ehr.) Cl.						
<i>Cymbella cistula</i> (Ehr.) Kirch.			0.1 ±0.1		0.2 ±0.2	
<i>Cymbella cymbiformis</i> var. <i>nonpunctata</i> Fontell						
<i>Cymbella gracilis</i> (Ehr.) Kütz.						
<i>Cymbella latens</i> Krasske						
<i>Cymbella mexicana</i> (Ehr.) Cl.						
<i>Cymbella minuta</i> Hilse ex. Rabh.						
<i>Cymbella naviculiformis</i> (Auers.) Cl.						
<i>Cymbella prostrata</i> (Berk.) Cl.						
<i>Cymbella proxima</i> Reimer						
<i>Cymbella silesiaca</i> Bleisch in Rabh.		0.1 ±0.1				
<i>Cymbella subcuspidata</i> Krammer						
<i>Cymbella tumida</i> (Breb.) Van Heurck						

APPENDIX TABLE 1m (Cont.)

TAXA	Bear Cr 10VII01	Prosser Cr 11VII01	Alder Cr 11VII01	Juniper Cr 10VII01	Independence 13VII01	Trout Cr below 23VIII01
<i>Cymbella tumidula</i> Grun.						
<i>Cymbellonitzschia diluviana</i> Hust.						
<i>Denticula elegans</i> Kütz.						
<i>Diatoma hyemalis</i> (Roth) Heiberg						
<i>Diatoma mesodon</i> (Ehr.) Kütz.	0.4 ±0.2	0.1 ±0.1	0.1 ±0.1			0.8 ±0.5
<i>Diatoma tenuis</i> Ag.						
<i>Diatoma vulgare</i> Bory	3.2 ±0.7					0.1 ±0.1
<i>Didymosphenia geminata</i> (Lyngbye) M. Schmidt	0.2 ±0.2					
<i>Diploneis elliptica</i> (Kütz.) Cl.						
<i>Diploneis oblongella</i> (Naeg. ex. Kütz) Ross						
<i>Diploneis ovalis</i> (Hilse) Cl.	0.2 ±0.2					
<i>Encyonopsis microcephala</i> (Grun.) Krammer						
<i>Epithemia adnata</i> (Kütz.) Bréb.	0.5 ±0.5	0.8 ±0.3		3.6 ±0.9	0.6 ±0.6	3.1 ±2.3
<i>Epithemia argus</i> (Ehr.) Kütz.	0.4 ±0.4					
<i>Epithemia argus</i> var. <i>alpestris</i> (W. Sm.) Grun.						
<i>Epithemia sorex</i> Kütz.						0.6 ±0.3
<i>Epithemia turgida</i> (Ehr.) Kütz.						
<i>Epithemia turgida</i> var. <i>westermanni</i> (Grun.) Ehr.						
<i>Eunotia</i>						1.2 ±0.5
<i>Eunotia bilunaris</i> (Ehr.) Mills.		0.2 ±0.2		0.2 ±0.2	0.7 ±0.6	
<i>Eunotia pectinatus</i> (Dillw.) Rabh.						0.2 ±0.2
<i>Fragilaria arcus</i> (Ehr.) Cl.		0.1 ±0.1	0.1 ±0.3		2.6 ±1.0	
<i>Fragilaria bicapitata</i> A. Moyer						
<i>Fragilaria capucina</i> Desm.	5.4 ±0.1	3.2 ±1.0	12.8 ±1.5	1.1 ±0.6	2.6 ±1.4	0.5 ±0.3
<i>Fragilaria capucina</i> var. <i>capitellata</i> (Grun.) Lange-Bertalot						
<i>Fragilaria capucina</i> var. <i>gracilis</i> (Oestrup) Hust.						

APPENDIX TABLE 1m (Cont.)

TAXA	Bear Cr 10VII01	Prosser Cr 11VII01	Alder Cr 11VII01	Juniper Cr 10VII01	Independence 13VII01	Trout Cr below 23VIII01
<i>Fragilaria capucina</i> var. <i>rumpens</i> (Kütz.) Lange-Bertalot						
<i>Fragilaria capucina</i> var. <i>vaucheriae</i> (Kütz.) Lange-Bertalot	3.6 ±0.2	0.9 ±0.3	3.2 ±1.1	1.4 ±0.6	1.0 ±0.6	0.5 ±0.3
<i>Fragilaria crotonensis</i> Kitt.						
<i>Fragilaria cycloporum</i> (Brutschy) Lange-Bertalot						
<i>Fragilaria leptostauron</i> (Ehr.) Hust.					0.4 ±0.4	0.6 ±0.6
<i>Fragilaria mazamaensis</i> (Soveign) Lange-Bertalot						
<i>Fragilaria parasitica</i> (W. Sm.) Grun.						
<i>Fragilaria parasitica</i> var. <i>subconstricta</i> Grun.						
<i>Fragilaria robusta</i> (Ralfs.) Lange-Bertalot						
<i>Fragilaria tenera</i> (W. Sm.) Lange-Bertalot						
<i>Fragilaria ulna</i> (Nitzs.) Lange-Bertalot	3.7 ±0.6	1.5 ±0.2	5.4 ±1.8	3.3 ±1.7	5.8 ±0.8	3.4 ±1.2
<i>Fragilaria ulna</i> var. <i>arcus</i> (Kütz.) Lange-Bertalot						
<i>Fragilariforma virescens</i> (Ralfs.) Williams & Round						
<i>Frustulia rhomboides</i> (Ehr.) DeToni		1.3 ±1.3	0.2 ±0.2	0.2 ±0.2		
<i>Frustulia vulgaris</i> (Thwaites) DeT.						
<i>Gomphoneis herculeana</i> (Ehr.) Cl.	1.3 ±0.8		0.2 ±0.2	1.1 ±0.1	0.8 ±0.4	
<i>Gomphonema acuminatum</i> Ehr.						
<i>Gomphonema affine</i> Kütz.						
<i>Gomphonema angustum</i> Ag.	0.8 ±0.4	0.4 ±0.3				
<i>Gomphonema clavatum</i> Ehr.						
<i>Gomphonema clevei</i> Fricke	33.0 ±3.0	20.6 ±3.3	12.5 ±2.6	9.7 ±3.7	10.9 ±3.5	5.4 ±0.7
<i>Gomphonema gracile</i> Ehr.						
<i>Gomphonema minuta</i> (C. Ag.) C. Ag.						
<i>Gomphonema olivaceum</i> (Horn.) Bréb.						

APPENDIX TABLE 1m (Cont.)

TAXA	Bear Cr 10VII01	Prosser Cr 11VII01	Alder Cr 11VII01	Juniper Cr 10VII01	Independence 13VII01	Trout Cr below 23VIII01
<i>Gomphonema parvulum</i> Kütz.	1.8 ±0.1	0.5 ±0.1	2.0 ±1.0		0.4 ±0.4	0.8 ±0.2
<i>Gomphonema subtile</i> Ehr.						
<i>Gomphonema truncatum</i> (Cl. Ag.) Cl. Ag.					0.2 ±0.2	
<i>Gomphonema ventricosum</i> Greg. cf. <i>Grammatophora</i>						
<i>Gyrosigma acumdatum</i> (Kütz.) Rabh.						
<i>Hantzschia amphioxys</i> (Ehr.) Grun.						
<i>Hippodonta capitata</i> (Ehr.) Lange-Bertalot						
<i>Karayevia clevei</i> (Grun.) Round & Bukhtiyarova						
<i>Luticola goeppertinana</i> (Bleisch) Mann						
<i>Luticola mutica</i> (Kütz.) Mann	0.1 ±0.1					
<i>Mastogloia smithii</i> Thwaites						
<i>Melosira varians</i> Ag.	1.0 ±0.2		4.3 ±1.5		0.4 ±0.4	0.1 ±0.1
<i>Meridion circulare</i> (Grev.) Ag.		0.7 ±0.5	0.6 ±0.3	0.2 ±0.2	0.4 ±0.4	
<i>Meridion circulare</i> var. <i>constrictum</i> (Ralfs.) Van Heurck						
<i>Navicula angusta</i> Grun.						
<i>Navicula arenaria</i> Donk.						
<i>Navicula arvensis</i> Hust.			0.1 ±0.1			
<i>Navicula bryophila</i> Boye Petersen						
<i>Navicula capitatoradiata</i> Germain						
<i>Navicula cari</i> Ehr.					0.7 ±0.7	
<i>Navicula cincta</i> (Ehr.) Ralfs						
<i>Navicula clematis</i> Grun.						
<i>Navicula cryptocephala</i> Kütz		0.3 ±0.3	0.7 ±0.4	0.7 ±0.5	1.3 ±1.3	
<i>Navicula cryptonella</i> Lange-Bertalot						
<i>Navicula cuspidata</i> Kütz. (Kütz.)						
<i>Navicula declivis</i> Hust.						

APPENDIX TABLE 1m (Cont.)

TAXA	Bear Cr 10VII01	Prosser Cr 11VII01	Alder Cr 11VII01	Juniper Cr 10VII01	Independence 13VII01	Trout Cr below 23VIII01
<i>Navicula decussis</i> Østrup.						
<i>Navicula dentata</i> Hust.						
<i>Navicula elginensis</i> (Greg.) Ralfs.						
<i>Navicula erifuga</i> Lange-Bertalot						
<i>Navicula expecta</i> Van Land.						
<i>Navicula gregaria</i> Donk.						
<i>Navicula heufleriana</i> (Grun.) Grun.						
<i>Navicula incerta</i> Lange-Bertalot						
<i>Navicula indifferens</i> Hust.						
<i>Navicula lanceolata</i> (Ag.) Kütz.						
<i>Navicula laterostrata</i> Hust.						
<i>Navicula libonensis</i> Schoemann						
<i>Navicula minuscula</i> Grun.						
<i>Navicula protracta</i> (Grun.) Cl.						
<i>Navicula pygmaea</i> Kütz.						
<i>Navicula radiosa</i> Kütz.		0.3 ±0.3	0.1 ±0.1		0.4 ±0.4	
<i>Navicula reinhardtii</i> Grun.						
<i>Navicula rhynchocephala</i> Kütz.		0.6 ±0.3	0.1 ±0.1		0.4 ±0.4	
<i>Navicula rotundra</i> Hust.						
<i>Navicula salinarum</i> Grun.		2.1 ±1.0	0.1 ±0.1	1.3 ±0.5		
<i>Navicula schoenfeldii</i> Hust.						
<i>Navicula schroeterii</i> Meister						
<i>Navicula seminulum</i> Grun.						
cf. <i>Navicula splendicula</i> Van Land.						
<i>Navicula subminiscula</i> Mang.						
<i>Navicula subrhynchocephala</i> Hust.						
<i>Navicula subrotundata</i> Hust.						
<i>Navicula tenelloides</i> Hust.						

APPENDIX TABLE 1m (Cont.)

TAXA	Bear Cr 10VII01	Prosser Cr 11VII01	Alder Cr 11VII01	Juniper Cr 10VII01	Independence 13VII01	Trout Cr below 23VIII01
<i>Navicula tridentula</i> Krasske						
<i>Navicula tripunctata</i> (O.F. Müll) Bory						
<i>Navicula variostrata</i> Krasske						
<i>Navicula veneta</i> Kütz.	0.4 ±0.2	4.1 ±1.2	0.7 ±0.4	2.8 ±1.0	1.7 ±1.2	
<i>Nitzschia acicularis</i> W. Sm			0.1 ±0.1	1.6 ±1.1		2.0 ±0.6
<i>Nitzschia amphibia</i> Grun.						
<i>Nitzschia capitellata</i> Hust.		0.1 ±0.1				
<i>Nitzschia compressa</i> (Bailey) Boyer						
<i>Nitzschia dissipata</i> (Kütz.) Kütz.	4.2 ±0.7	6.3 ±0.4	8.4 ±1.3	5.2 ±0.8	3.0 ±1.7	7.3 ±3.9
<i>Nitzschia epithemoides</i> Grun.						
<i>Nitzschia filiformis</i> (W. Sm.) Hust.						
<i>Nitzschia fonticola</i> Grun.						
<i>Nitzschia frustulum</i> Kütz.	1.2 ±0.1	1.6 ±0.4	2.3 ±0.1	10.1 ±1.1	0.4 ±0.4	2.4 ±1.0
<i>Nitzschia gracilis</i> Hantz.						
<i>Nitzschia heufleriana</i> Grun.						
<i>Nitzschia hybrida</i> Grun.						
<i>Nitzschia inconspicua</i> Grun.						
<i>Nitzschia linearis</i> W. Sm.						
<i>Nitzschia palea</i> (Kütz.) W. Sm.		0.4 ±0.4	10.5 ±2.4	2.3 ±0.5	0.6 ±0.6	
<i>Nitzschia parvula</i> W. Sm.						
<i>Nitzschia pellucida</i> Grun.						
<i>Nitzschia sigma</i> (Kütz.) W. Sm.						
<i>Nitzschia sigmoidea</i> (Nitz.) W. Sm.	0.2 ±0.2		2.5 ±0.5	1.5 ±0.5	0.6 ±0.3	0.3 ±0.3
<i>Nitzschia sinuata</i> var. <i>delognei</i> (Grun.) Lange-Bertalot						
<i>Nitzschia umbonata</i> (Ehr.) Lange-Bertalot						
<i>Nitzschia vermicularis</i> (Kütz.) Hantz.						
<i>Opephora olsenii</i> Moller						

APPENDIX TABLE 1m (Cont.)

TAXA	Bear Cr 10VII01	Prosser Cr 11VII01	Alder Cr 11VII01	Juniper Cr 10VII01	Independence 13VII01	Trout Cr below 23VIII01
<i>Pinnularia borealis</i> Ehr.						
<i>Pinnularia brevicostata</i> Cl.						
<i>Pinnularia divergens</i> W. Sm.						
<i>Pinnularia divergentissima</i> (Grun.) Cl.						
<i>Pinnularia gibba</i> Ehr.				0.1 ±0.1	0.2 ±0.2	
<i>Pinnularia gibba</i> var. <i>linearis</i> Ehr.						
<i>Pinnularia interrupta</i> W. Sm.						
<i>Pinnularia lagerstedtii</i> (Cl.) Cl.- Euler						
<i>Pinnularia lata</i> (Bréb.) W. Sm.						
<i>Pinnularia maior</i> (Kütz.) Rabh.						
<i>Pinnularia nodosa</i> Ehr.						
<i>Pinnularia obscura</i> Krasske						
<i>Pinnularia similis</i> Hust.						
<i>Pinnularia stromatophora</i> (Grun.) Cl.						
<i>Pinnularia subcapitata</i> Greg.						
<i>Pinnularia viridis</i> (Nitz.) Ehr.		0.2 ±0.2				
<i>Planothidium delicatula</i> (Kütz.) Round & Bukhtiyarova						
<i>Planothidium lanceolata</i> (Breb.) Round & Bukhtiyarova	1.6 ±0.3	3.5 ±0.5	2.6 ±0.9	2.9 ±0.5	4.7 ±0.6	8.3 ±1.2
<i>Planothidium lanceolata</i> var. <i>dubia</i> (Grun.) Lange-Bertalot						
<i>Pseudostaurosira brevistriata</i> (Grun.) Williams & Round	0.2 ±0.2	0.4 ±0.4			0.4 ±0.4	1.6 ±0.9
<i>Reimeria sinuata</i> (Greg.) Kociolek & Stoermer	1.4 ±0.7	1.6 ±0.5	0.3 ±0.3	4.2 ±1.0	1.0 ±0.6	1.2 ±0.7
<i>Rhopalodia gibba</i> (Ehr.) O. Müll.	0.2 ±0.2	1.0 ±0.5	0.1 ±0.1	0.5 ±0.3	0.4 ±0.4	
<i>Rhopalodia gibberula</i> (Ehr.) O. Müll.						

APPENDIX TABLE 1m (Cont.)

TAXA	Bear Cr 10VII01	Prosser Cr 11VII01	Alder Cr 11VII01	Juniper Cr 10VII01	Independence 13VII01	Trout Cr below 23VIII01
<i>Rhoicosphenia abbreviata</i> (Ag.) Lange-Bertalot	6.8 ±2.6	2.9 ±0.8	5.8 ±1.7	10.4 ±4.9	3.1 ±0.6	1.4 ±0.4
<i>Sellaphora pupula</i> (Kütz.) Gell et al.			0.7 ±0.6			
<i>Stauroneis anceps</i> Ehr.						
<i>Stauroneis kriegerii</i> Patrick						
<i>Stauroneis phoenicenteron</i> (Nitz.) Ehr.						
<i>Stauroneis smithii</i> Grun.						
<i>Staurosira construens</i> (Ehr.) Hust.			0.5 ±0.3			
<i>Staurosira construens</i> f. <i>binodis</i> (Ehr.) Hust.						
<i>Staurosira construens</i> var. <i>venter</i> (Ehr.) Hust.	0.4 ±0.4	1.4 ±0.3	1.1 ±0.8		2.2 ±1.1	3.8 ±1.1
<i>Staurosirella pinnata</i> (Ehr.) Williams & Round						
<i>Stephanodiscus hantzschii</i> Grun. (in Cl. & Grun.)						
<i>Stephanodiscus niagare</i> Ehr.						
<i>Surirella angustata</i> Kütz.			1.0 ±0.6	0.1 ±0.1		
<i>Surirella brebissonii</i> Krammer & Lange-Bertalot						
<i>Surirella ovalis</i> Breb.						
<i>Surirella striatula</i> Turp.						
<i>Surirella tenera</i> Greg.		0.2 ±0.2				
<i>Tabellaria fenestrata</i> (Lyngb.) Grun.						
<i>Tabellaria flocculosa</i> (Roth) Kütz.						
<i>Tetracyclus rupestris</i> (Braun.) Grun.						