

Database Code: CF004

Title: Stream, hyporheic, and ground water chemistry of McRae Creek in the Andrews Experimental Forest, 1989 to 1992

Abstract:

Measurements of nitrogen concentrations from grab samples collected from McRae Ck, and from a network of shallow wells located adjacent to the stream. All samples were analyzed for NO3 and NH4. Some samples include additional data such as DON and Total N, and sometimes temperature and dissolved oxygen concentrations were measured at the time the water samples were collected for analysis. Data were collected from September 1989 to September 1992 on an irregular basis to sample both baseflow periods and storm events across seasons of the year. Water samples were collected from the stream as grab samples; samples from shallow wells were pumped into a small flask using a vacuum pump and then transferred into a sample bottle.

Keywords: Aquatic ecosystems; Groundwater processes; Hyporheic zone; Nitrogen cycling; Riparian ecosystems; Storms; Stream ecology; Subsurface flow; Water chemistry; Disturbance; Inorganic nutrients; water chemistry; stream ecology; storms; nitrogen cycling; disturbance; physical processes; hydrologic processes; inorganic nutrients; groundwater; hyporheic zone; riparian ecosystems; aquatic ecosystems;

Date data commenced: 1989-09-14

Date data terminated: 1993-03-25

Principal Investigator: Steven M. Wondzell

List of Entities:

- 1. Hyporheic and stream water chemistry of McRae Creek

1. Hyporheic and stream water chemistry of McRae Creek

Attribute List:

DBCOD	N	N	char(5)	enum			
ENTITY	N	N	numeric(2,0)	range	1.0000	1.0000	number
CCAL_ID	N	Y	numeric(3,0)	range	101.0000	899.0000	number
DUPLICATE	Y	N	char(2)	enum			
FLAG	N	Y	char(2)	freetext			
FIELD_ID	Y	N	numeric(4,0)	range	1.0000	1275.0000	number
DATE_TIME	Y	N	datetime	range	9/14/1989	3/25/1993	YYYY-MM-DD hh:mm:ss
E_TIME	N	N	numeric(8,6)	range	7:30:00 AM	12:38:00 PM	YYYY
LOCATE	N	N	char(8)	enum			
H2ODEPTH	N	Y	numeric(6,2)	range	0.5300	274.1000	cm
H2OELEV	N	Y	numeric(6,1)	range	-310.2000	612.4000	cm
LANDFORM	N	N	char(9)	enum			
SEASON	N	N	char(6)	enum			
FLOINDEX	N	N	char(4)	enum			
TEMP	N	Y	numeric(4,1)	range	4.2000	14.7000	deg c
OXYGEN	N	Y	numeric(4,1)	range	1.0000	12.1000	mg/l
TURBID	N	N	char(3)	enum			
COLOR	N	N	char(3)	enum			

SEDIMENT	N	N	char(1)	enum			
TKN	N	Y	numeric(5,3)	range	0.0000	0.4500	mg/l
NH4	N	Y	numeric(5,3)	range	0.0000	0.7430	mg/l
NO3	N	Y	numeric(5,3)	range	0.0000	0.6370	mg/l
DON	N	Y	numeric(5,3)	range	0.0000	0.1310	mg/l
TOTALN	N	Y	numeric(5,3)	range	0.0000	0.4520	mg/l

Attributes Definitions:

CCAL_ID

Unique sample id number from the ccal lab

COLOR

Denotes colored (not clear or turbid) samples after filtering

DATE_TIME

Date and time of sample collection

DBCODE

FSDB Database code

DON

Dissolved organic nitrogen concentration calculated by difference between tkn and nh4

DUPLICATE

Duplicated lab analysis for qa/qc

E_TIME

Elapsed time (in years) since beginning of the study where 0.000000 is 1 jan 1989.

ENTITY

Entity number

FIELD_ID

Number assigned in the field to the sample

FLAG

Special collection - see comments in supplemental information

FLOINDEX

State of stream hydrograph at time of sample collection

H2ODEPTH

Depth of water, measured from top of well, or height of water in stream

H2OELEV

Elevation of water table or stream stage where all locations are measured relative to arbitrarily located benchmark. gives true elev dif btwn sites.

LANDFORM

Landform within the study site where samples were located

LOCATE

Location of sample collection

NH4

Amonium concentration (may include nh3 if present in sample)

NO3

Nitrate concentration

OXYGEN

Dissolved oxygen concentration in water at time of collection

SEASON

Season of year

SEDIMENT

Ranking of amount of sediment left on filter paper after filtering the sample through whatman gf/c filter

TEMP

Temperature of water at time of collection

TKN

Total kjeldahl nitrogen concentration

TOTALN

Total dissolved nitrogen calculated by sum of nh4, no3, and don

TURBID

Denotes turbid samples after filtering

Enumerated Domains:

Enumerated Domain for Attribute: COLOR

C	Colored after filtering
N-C	Not colored
NA	Not indicated

Enumerated Domain for Attribute: DUPLICATE

D	Duplicate lab analysis
R	Repeated lab analysis
RD	Duplicate in repeat analysis
NA	Not indicated

Enumerated Domain for Attribute: FLOINDEX

BASE	Base flow
FALL	Falling leg of hydrograph
LOW	Annual low flow
PEAK	Peak of storm hydrograph
POST	Post-storm sample
PRE	Pre-storm sample

RISE	Rising leg of hydrograph
NA	Not indicated

Enumerated Domain for Attribute: LANDFORM

FAN	Alluvial fan
FLOOD	Flood plain
GRAVEL	Gravel bar
SEEP	Seep or spring
STLET	Back channel
STREAM	Mcrae creek
STREAMBED	Streambed of mcrae creek
TERRACE	Terrace
TRIB	Tributary stream
NA	Not indicated

Enumerated Domain for Attribute: LOCATE

FIELD-B	Di water field blank
GB02	Observation well on gravel bar - see map for location
GB03	Observation well on gravel bar - see map for location
GB04	Observation well on gravel bar - see map for location
GB05	Observation well on gravel bar - see map for location
GB06	Observation well on gravel bar - see map for location
GB07	Observation well on gravel bar - see map for location
GB08	Observation well on gravel bar - see map for location
GB09	Observation well on gravel bar - see map for location
GB10	Observation well on gravel bar - see map for location
GB11	Observation well on gravel bar - see map for location
GB12	Observation well on gravel bar - see map for location
GB13	Observation well on gravel bar - see map for location
GB14	Observation well on gravel bar - see map for location
GB15	Observation well on gravel bar - see map for location
GB16	Observation well on gravel bar - see map for location
GB17	Observation well on gravel bar - see map for location
PA03	Observation well - see map for location
PA07	Observation well - see map for location
PA11	Observation well - see map for location

PA14	Observation well - see map for location
PA17	Observation well - see map for location
PA72	Observation well - see map for location
PB30	Observation well - see map for location
PE18	Observation well - see map for location
PE23	Observation well - see map for location
PE27	Observation well - see map for location
PE30	Observation well - see map for location
PE37	Observation well - see map for location
PN31	Observation well - see map for location
PP20	Observation well - see map for location
PP28	Observation well - see map for location
PP34	Observation well - see map for location
PP41	Observation well - see map for location
PQ10	Observation well - see map for location
PS04	Observation well - see map for location
PS29	Observation well - see map for location
PS40	Observation well - see map for location
PV05	Observation well - see map for location
PV19	Observation well - see map for location
PV31	Observation well - see map for location
PV40-A	Observation well - see map for location
PX09	Observation well - see map for location
PX18	Observation well - see map for location
PX22	Observation well - see map for location
PX30	Observation well - see map for location
PX40	Observation well - see map for location
W00A	Sample well - see map for location
W007	Sample well - see map for location
W07A	Sample well - see map for location
W24A	Sample well - see map for location
W32A	Sample well - see map for location
W51A	Sample well - see map for location
W21E	Sample well - see map for location

W37E	Sample well - see map for location
W10X	Sample well - see map for location
W30X	Sample well - see map for location
W60X	Sample well - see map for location
STLET@E	Grab sample location for collection of surface water - see map
STREAM	Grab sample location for collection of surface water - see map
STREAM@N	Grab sample location for collection of surface water - see map
POOL@A	Grab sample location for collection of surface water - see map
POOL@D	Grab sample location for collection of surface water - see map
POOL@E	Grab sample location for collection of surface water - see map
TRIB-00	Grab sample location for collection of surface water - see map
TRIB-A1	Grab sample location for collection of surface water - see map
TRIB-A2	Grab sample location for collection of surface water - see map
PP42	Not on map

Enumerated Domain for Attribute: SEDIMENT

1	Little to no sediment left on sample paper after filtering
2	Some sediment left on sample paper after filtering
3	More sediment left on sample paper after filtering
4	Even more sediment left on sample paper after filtering
5	Very sediment rich, usually required several filters to filter entire sample
9	Not indicated

Enumerated Domain for Attribute: TURBID

T	Turbid (after filtering)
N-T	Not turbid
NA	Not indicated

Enumerated Domain for Attribute: SEASON

FALL	Fall
SPRING	Spring
SUMMER	Summer
WINTER	Winter
NA	Not indicated

Enumerated Domain for Attribute: DBCODE

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