

**Utah High Plateaus Ecoregion  
Aquatic System Descriptor Information  
December, 2003  
The Nature Conservancy**

**Listed below is the type of information we are seeking for each of the system types depicted in the accompanying maps.**

**Data1\_System General Info**

Published Information  
Notes

**Data2\_Biota**

Typical fish species: list the 5-10 most common native and non-native species  
Rare/sensitive/endangered fauna:

Typical macroinvertebrate taxa/functional groups: describe the taxa or groups occurring in system type

Fish functional group types: list the group or groups found in system type

- cold-water specialists
- warm-water specialists
- turbid water specialists
- gravel spawners
- visual predators
- other

Typical Fish IBI scores

Typical Invert IBI scores

Additional notes related to stream biota: beavers? amphibians? mollusks?

**Data3\_Chemistry and Productivity**

Patterns of macronutrients: describe seasonal or geographic variations in ambient levels of P and N

Limiting nutrient:

- P-limited
- N-limited

Typical pH range/alkalinity:

- typically acidic (pH <7)
- high levels of alkaline compounds that shift pH above 7

Primary control on river chemistry:

- precipitation (TDS <20 mg/l, high Na/(Na+Ca); rivers drain intensely weathered materials, cation poor siliceous rocks, or deeply weathered soils and saprolites; chemical composition of streamwater similar to rainwater; e.g., tropical rivers of Africa and South America in highly leached areas of low relief )

- ❑ hard (igneous/metamorphic) rock weathering (TDS 20-40 mg/l; low Na/(Na+Ca); rivers draining siliceous terrains of cation-rich igneous and metamorphic rocks and terrestrial shales)
- ❑ soft (sedimentary) rock weathering (TDS 40-250 mg/l; low Na/(Na+Ca); rivers draining marine sedimentary rocks)
- ❑ evaporation (TDS > 250 mg/l ; high Na/(Na+Ca); rivers draining evaporates)

Primary energy source:

- ❑ Heterotrophic – allochthonous material supplies energy for secondary productivity
- ❑ Autotrophic – autochthonous sources supply primary energy for secondary productivity
- ❑ Mixed

Macrophyte abundance: describe the amount of stream surface area covered by macrophytes

Macrophyte structure: describe the macrophyte forms, e.g., floating, anchored, submergent emergent

Macrophyte importance/roles; describe the macrophyte function, e.g., fish nesting habitat, macroinvert habitat/food

Water clarity:

- ❑ Always clear
- ❑ Seasonally clear; some turbidity
- ❑ Moderately turbid year-round
- ❑ Very Turbid year-round
- ❑ other

Expected temperature range: describe annual variation in temperature

Trout stream status: indicate if system type supports trout

- ❑ trout
- ❑ no trout

#### **Data4\_Hydrology and Geomorphology**

Temporal and spatial continuity of flow:

- ❑ ephemeral – temporally discontinuous flow
- ❑ intermittent – spatially discontinuous flow
- ❑ perennial – continuous flow

Primary driver of annual peak flows:

- ❑ snowmelt
- ❑ glaciermelt
- ❑ rainfall
- ❑ rain-on-snow

Average annual discharge: describe range in annual discharge

Connection to subsurface:

- ❑ gaining – infiltration from subsurface
- ❑ losing – infiltration to subsurface

Connection to lakes: describe lake/stream interactions, if any

Sediment balance/Channel stability

- erosional
- depositional
- stable

Predominant sediment transport form:

- Bedload (65-85% suspended load, 8-30% silt-clay in channel perimeter)
- suspended load (85-100% suspended load, 30-100% silt-clay in channel perimeter)
- mixed load (30-65% suspended load, 0-8% silt-clay in channel perimeter)

Channel cross-section form:

- Narrow, v-shaped
- u-shaped
- broad, flat

Channel planform:

- straight – sinuosity < 1.5, commonly have wandering thalweg, pool-riffle sequences
- meandering – sinuosity > 1.5
- braided – channel divided around alluvial bars and islands

Bedforms:

- cascade - longitudinal and latitudinally disorganized bed material; high gradient
- step-pool – discrete channel- spanning accumulations of steps separated by pools
- plane bed – lack well-defined bedforms; long stretches of relatively planar channel bed
- pool-riffle – undulating bed defines sequence of bars, pools and riffles
- dune ripple – variety of mobile bedforms provide primary flow resistance

Channel confinement: describe the degree to which stream is laterally confined

Additional Hydrology and Geomorphology Notes

### **Data5\_Riparian/Upland Community Composition:**

Predominant riparian vegetation type:

- woody
- herbaceous
- mixed woody/herbaceous

Typical riparian species:

Vegetation and stream structure: describe the role of riparian vegetation in supplying LWD, root mats, etc.

Channel shading: describe the degree of canopy openness over stream

Influence on nutrients/chemistry: describe the primary nutrients or chemical qualities riparian vegetation confers on stream

Predominant upland cover type:

- forested/woody
- herbaceous
- rock/barren
- ice

Additional Riparian/Upland Community Notes

## **Data6\_Threats**

Describe the current level of threat (high, medium, low) posed by the following activities, and the ways in which the system is sensitive to these perturbations:

Climate

Mining

Logging

Recreation

Agriculture/Ranching

Frequency of natural disturbances:

Forest fire

Slope failure

Avalanches

Floods

Tree blowdown

Glacial activity

Thank you for your time and effort!