

National Biological Assessment
and Criteria Workshop

Advancing State and Tribal Programs



Coeur d'Alene, Idaho
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TRIBE 101

Developing Biological Criteria: Fort Peck's Experience

Presented by

Deb Madison, Fort Peck Assiniboine & Sioux Tribes

Historical Overview of Surface Water Quality (106) Program

- Quarterly Physicochemical Sampling

- Rapid Bioassessment Protocol (RBP)
 - Fish
 - Benthic Macroinvertebrates
 - Habitat Assessment

Rapid Bioassessment Protocol Pilot Project (1991)

- Conducted monthly sampling (April - Sept.)
- Sampled benthic macroinvertebrates (kicknet)
- Sampled fish (electrofishing)
- Intensive habitat assessment (2 methods)
- Defined index period (June 1 to July 15)

RBP-Benthic Macroinvertebrates

- Field sampling with kicknet
- Laboratory analysis
 - 100-organism sub-samples
 - Family-level identification

RBP-Benthic Macroinvertebrates

- Metric Selection
- Reference Site/Condition
- Metric Scoring Criteria
- Impairment Ratings
- Develop Biocriteria

Metric Selection (1991-1994)

- Taxa Richness
- EPT Richness
- Family Biotic Index (FBI)
- % Scraper/Filterer
- EPT/Chironomid Ratio
- Community Loss Index (CLI)
- % Shredders

Metric Selection (1995)

▪ Retained in 1995

- Taxa Richness
- EPT Richness
- FBI
- % Dominant Family

▪ Eliminated in 1995

- % Scraper/Filterer
- EPT/Chironomid Ratio
- Community Loss Index
- % Shredders

Metric Selection (1995-Present)

- Retained from 1994
 - Taxa Richness
 - EPT Richness
 - FBI
 - % Dominant Family
- Adopted in 1995
 - % Collectors
 - % EPT
 - % Diptera + non-insect
 - % Shredders + Scrapers

Reference Site/Condition

- 1991-1994 = Reference Site
(West Fork of the Poplar River)
- 1995-present = Reference Condition
(Least Impaired/Disturbed Sites)

Metric Scoring Criteria

- 1991-1994
 - 6 (non-impaired)
 - 3 (moderately impaired)
 - 0 (severely impaired)
- 1995-present
 - 3 (non-impaired)
 - 2 (slightly impaired)
 - 1 (moderately impaired)
 - 0 (severely impaired)

Metric Scoring Criteria

<u>Quartile</u>	<u>Score</u>
● >75 th	3
● >50 th -75 th	2
● >25 th -50 th	1
● 0-25 th	0

Impairment Rating

- Non-Impaired
- Slightly Impaired
- Moderately Impaired
- Severely Impaired

Designated Use Classification

- Class I Cool Water Aquatic Life
- Class I Warm Water Aquatic Life
- Class II Cool Water Aquatic Life
- Class II Warm Water Aquatic Life

Biological Criteria

- Narrative Biocriteria
- Numeric Biocriteria

Narrative Biocriteria

- Reservation waters shall be “free from” substance in concentration or combinations that would adversely alter the structure and function of aquatic communities, as defined by the reference condition.

Numeric Biocriteria

Any site failing to attain minimum values for Taxa Richness/EPT Index or exceeding maximum values for FBI would be categorized as failing to meet designated aquatic life use designation.

Numeric Biocriteria

Designated Use	Taxa Richness	FBI	EPT Index
Class I Cool	5	6.5	3
Class I Warm	5	7.0	2
Class II Cool	5	7.5	1
Class II Warm	4	7.5	1

Preliminary Use of Biocriteria

- Identify priority sites for stream restoration and water quality improvement projects (Section 319 funds)