

National Biological Assessment
and Criteria Workshop

Advancing State and Tribal Programs



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TRIBE 101

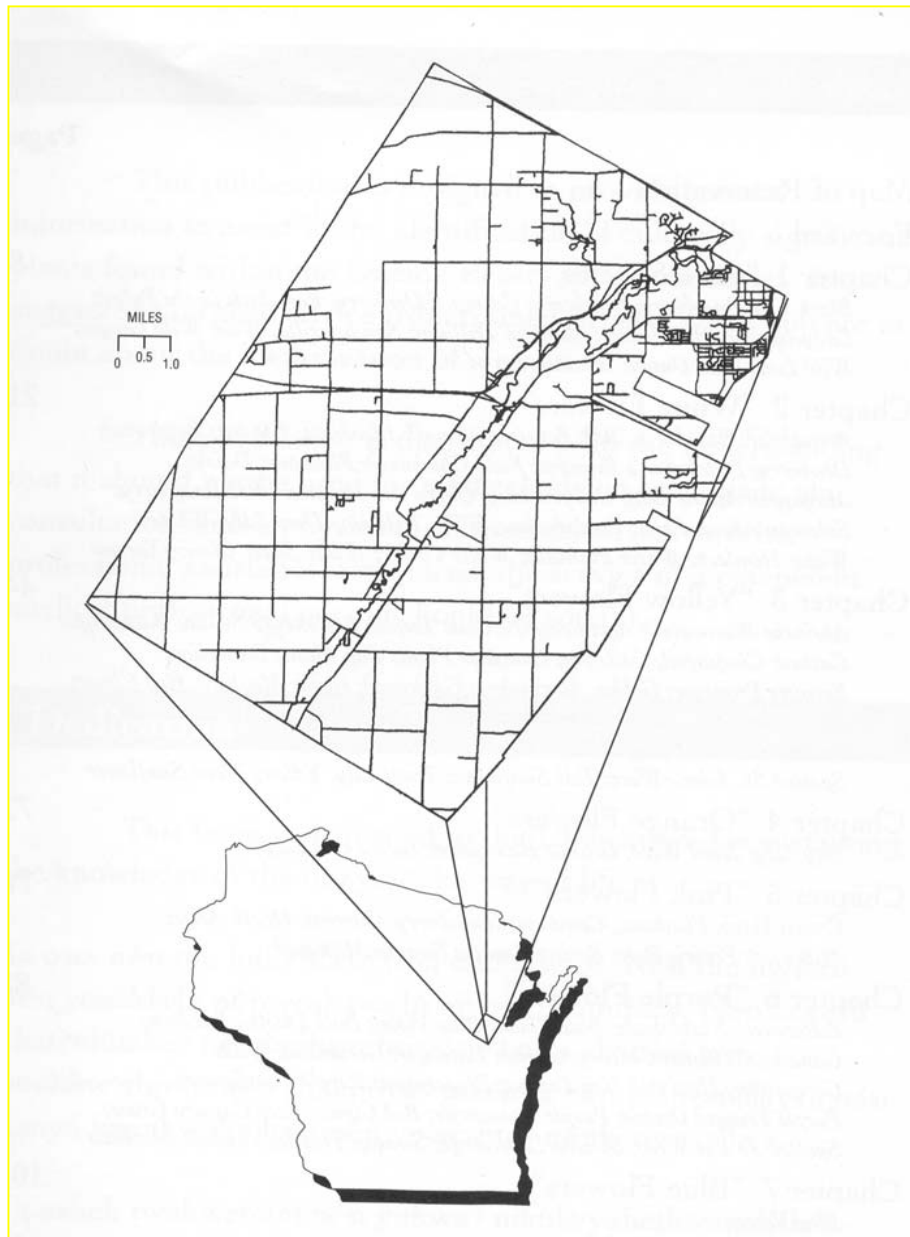
Establishment of Reference Sites on the Oneida Reservation in Wisconsin

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Steps taken in reference site selection and uses of data gathered



Location of Oneida Reservation in Wisconsin

Uses of Reference Sites

- Development encroaching – baseline data needed to determine possible future degradation
- Biocriteria for representative stream and lake types in Oneida Water Quality Standards, regulatory uses
- Knowledge of stream and lake biota used to increase awareness, value, protection by public and other agencies
- Gauging restoration project successes

Technical Issues

Case Example: Thornberry Creek

Thornberry Creek

- First order stream
 - Designated Use: Aquatic Life, Cold Water Ecosystem.
 - Water Quality Data indicated “pristine” system.
 - Invertebrate community data verified.
- Invertebrate data used to ally agencies in protection.
 - The decision to classify as only Class I trout stream in region made when fisheries data reflected invertebrate community data.



Thornberry Creek



Location of Thornberry Creek on Oneida Reservation

Identification of Stressors, Selection of Metrics

Stressor	Method of determination	Metric used to determine effect
Sedimentation	Habitat assessment, WQ data, land use	EPT, Taxa Richness, ..
Nutrication	WQ data, land use	HBI, ..
Pesticides, herbicides	WQ data, land use	Taxa Richness, ..

Factors Used in Identification of Stressors

- Land Use (Aerial photographs, site visits)
- Specific knowledge of watershed activities
- Water Quality Data
- Habitat Assessments
- Fishery surveys



Headwater wetland area before removal of understory



Headwater wetland area before removal of understory



Headwater wetland area after removal of understory



Headwater wetland area after removal of understory



Aerial photo showing land use surrounding Thornberry Creek

Benthic Macroinvertebrate Data for Thornberry Creek (1999 – 2001)

Data Set and type	HBI	Taxa Richness	EPT
8/99 Qualitative	4.0 (very good)	34	6
6/00 Qualitative	3.3 (excellent)	21	6

- This is a spring-fed, low gradient, first order stream. Some common metrics are not representative of its ecological health (i.e., dominance, %P, etc.).
- Community is dominated (51%) by the amphipod *Gammarus pseudolimaneus*, with the second most numerous organism (9.6%) being the caddisfly *Lepidostoma* sp. (2000 sample).
- All (663) organisms were picked for the 1999 baseline, qualitative sample.
- Standardized protocols were used for the 2000 qualitative sample (300 organisms picked).
- We will be sampling quantitatively again this coming June (2001 quantitative data not given here).

Collaboration With State of Wisconsin

- Fisheries studies and designations
- Partnerships sharing data, regulatory “team” efforts
- State Biocriteria Group
 - No local benthic invertebrate people