Table 1. IBI Metric Scoring Criteria for the Upper Little Tennessee River Watershed, Proposed New Revision, for Streams Draining 4-7 square miles

Metric		Possible Scores		
		1.5	4.5	7.5
1.	Total number of native species	<6	6-10	>10
2.	Number of darter species		deleted	
3.	Number of centrarchid species, other than Micropterus		deleted	
4.	Number of sucker species		deleted	
5.	Number of intolerant species[1]	<2	2	>2
6.	Proportion of individuals as tolerant species[2]	>20%	10 – 20%	<10%
7.	Proportion of individuals as omnivores, generalist feeders, and herbivores	>20%	10 – 20%	<10%
8.	Proportion of individuals as specialized insectivores	<20%	20 – 45%	>45%
9.	Number of species of piscivores		deleted	
10.	Catch rate per unit of effort[3]	<11	11-18	>18
11.	Proportion of individuals as darters and sculpins	<35%	35 – 65%	>65%
12.	Proportion of individuals with disease, tumors, fin damage and other anomalies	>5%	2 – 5%	<2%

1. Replace northern hogsucker with rock bass on list of intolerant species.
2. Add redbreast sunfish and green sunfish to list of tolerant species.
3. If catch rate is less than 3, low scores should be automatically given for Metrics 8, 11 and 12.

Table 2. IBI Metric Scoring Criteria for the Upper Little Tennessee River Watershed, Proposed Revision, for Streams Draining 7-15 square miles.

Metric		Possible Scores		
		1.3	4.0	6.7
1.	Total number of native species	<6	6-10	>10
2.	Number of darter species	0	1-2	>2
3.	Number of centrarchid species, other than Micropterus		deleted	
4.	Number of sucker species		deleted	
5.	Number of intolerant species[1]	<2	2	>2
6.	Proportion of individuals as tolerant species[2]	>20%	10 – 20%	<10%
7.	Proportion of individuals as omnivores, generalist feeders, and herbivores	>20%	10 – 20%	<10%
8.	Proportion of individuals as specialized insectivores	<20%	20 – 45%	>45%
9.	Number of species of piscivores		deleted	
10.	Catch rate per unit of effort[3]	<11	11-18	>18
11.	Proportion of individuals as darters and sculpins	<35%	35 – 65%	>65%
12.	Proportion of individuals with disease, tumors, fin damage and other anomalies	>5%	2 – 5%	<2%

1. Replace northern hogsucker with rock bass on list of intolerant species.
2. Add redbreast sunfish and green sunfish to list of tolerant species.
3. If catch rate is less than 3, low scores should be automatically given for Metrics 8, 11 and 12.

Table 3. IBI Metric Scoring Criteria for the Upper Little Tennessee River Watershed, Proposed Revision, for Streams Draining 15-40 square miles.

Metric		Possible Scores		
		1.3	4.0	6.7
1.	Total number of native species	Varies with drainage (see Figure 2 in Saylor and Ahlstedt, 1990)		
2.	Number of darter species	0	1-2	>2
3.	Number of centrarchid species, other than Micropterus		deleted	
4.	Number of sucker species		deleted	
5.	Number of intolerant species[1]	<2	2	>2
6.	Proportion of individuals as tolerant species[2]	>20%	10 – 20%	<10%
7.	Proportion of individuals as omnivores, generalist feeders, and herbivores	>45%	20 - 45%	<20%
8.	Proportion of individuals as specialized insectivores	<20%	20 – 45%	>45%
9.	Number of species of piscivores		deleted	
10.	Catch rate per unit of effort[3]	<7	7 – 13	>13
11.	Proportion of individuals as darters and sculpins	<35%	35 – 65%	>65%
12.	Proportion of individuals with disease, tumors, fin damage and other anomalies	>5%	2 – 5%	<2%

1. Replace northern hogsucker with rock bass on list of intolerant species.
2. Add redbreast sunfish and green sunfish to list of tolerant species.
3. If catch rate is less than 3, low scores should be automatically given for Metrics 8, 11 and 12.

Table 4. IBI Metric Scoring Criteria for the Upper Little Tennessee River Watershed, Proposed Revision, for Streams Draining 40-70 square miles.

Metric		Possible Scores		
		1.3	3.3	5.5
1.	Total number of native species	Varies with drainage (see Figure 2 in Saylor and Ahlstedt, 1990)		
2.	Number of darter species	0	1	>1
3.	Number of centrarchid species, other than Micropterus		deleted	
4.	Number of sucker species	0	1	>1
5.	Number of intolerant species[1]	<2	2	>2
6.	Proportion of individuals as tolerant species[2]	>20%	10 – 20%	<10%
7.	Proportion of individuals as omnivores, generalist feeders, and herbivores	>30%	15 - 30%	<15%
8.	Proportion of individuals as specialized insectivores	<25%	25 – 50%	>50%
9.	Number of species of piscivores	0		≥1
10.	Catch rate per unit of effort[3]	<7	7 – 13	>13
11.	Proportion of individuals as darters and sculpins	<25%	25 – 50%	>50%
12.	Proportion of individuals with disease, tumors, fin damage and other anomalies	>5%	2 – 5%	<2%

1. Replace northern hogsucker with rock bass on list of intolerant species.
2. Add redbreast sunfish and green sunfish to list of tolerant species.
3. If catch rate is less than 3, low scores should be automatically given for Metrics 8, 11 and 12.

Table 5. IBI Metric Scoring Criteria for the Upper Little Tennessee River Watershed, Proposed Revision, for Streams Draining 150 - 600 square miles.

Metric		Possible Scores		
		1	3	5
1.	Total number of native species	<10	10-18	>18
2.	Number of darter species	<3	3-4	>4
3.	Number of centrarchid species, other than Micropterus	0	1	>1
4.	Number of sucker species	<2	2 – 4	>4
5.	Number of intolerant species[1]	<2	2 - 3	>3
6.	Proportion of individuals as tolerant species[2]	>20%	10 – 20%	<10%
7.	Proportion of individuals as omnivores, generalist feeders, and herbivores	>30%	15 - 30%	<15%
8.	Proportion of individuals as specialized insectivores	<25%	25 – 50%	>50%
9.	Proportion of individuals as piscivores	<1%	1 – 2%	>2%
10.	Catch rate per unit of effort[3]	<7	7 – 13	>13
11.	Proportion of individuals as darters and sculpins	<10%	10 –25%	>25%
12.	Proportion of individuals with disease, tumors, fin damage and other anomalies	>5%	2 – 5%	<2%

1. Replace northern hogsucker with rock bass on list of intolerant species.
2. Add redbreast sunfish and green sunfish to list of tolerant species.
3. If catch rate is less than 3, low scores should be automatically given for Metrics 8, 11 and 12.

Table 6. IBI Metric Scoring Criteria for Reservoir Lakes in the Blue Ridge.

Metric		Possible Scores		
		1	3	5
1.	Total number of species (excluding exotics)	<8	8 – 15	>15
2.	Mean number of individuals per run*			
	a. Electrofishing	<30	30 – 60	>60
	b. Gill Nets	<30	30 – 60	>60
3.	Number of sunfish species (except Micropterus)	<3	3	>3
4.	Number of benthic invertivore species	<3	3 – 4	>4
5.	Number of intolerant species	<2	2	>2
6.	Percent individuals as tolerants*			
	a. Electrofishing	15	15 – 30	<15
	b. Gill Nets	>20	10 – 20	<10
7.	Number of piscivore species	<3	3 – 5	>5
8.	Percent individuals as omnivores*			
	a. Electrofishing	>10	5 – 10	<5
	b. Gill Nets	>30	15-30	<15
9.	Percent individuals as invertivores*			
	a. Electrofishing	<75	75 – 85	>85
	b. Gill Nets	<3	3 – 7	>7
10.	Percent individuals as single dominant species*			
	a. Electrofishing	>60	40 – 60	<40
	b. Gill Nets	>50	30 – 50	<50
11.	Number of species of lithophilic spawners	<3	3 – 5	>5
12.	Number of exotic species	<2	2 – 5	>5
13.	Percent individuals with disease or anomalies	>5	2 – 5	<2

* For metrics which are split by capture methods (electrofishing or gill net), award half of possible score based on each method.

Multiply score obtained by 0.923 to obtain final IBI score, in order to compensate for 13 metrics.

Table 7. IBI Metric Scoring Criteria for Stream Sites Draining Less than 10 Square Miles and Located at Elevations of 1800 feet or more in the Tennessee River Drainage Basin. From Williams 1996.

Metric	Possible Scores		
	2	6	10
1. Total Ephemeroptera taxa	<3	3 – 5	>5
2. Total EPT taxa	<8	8 – 15	>15
3. Brook trout presence or absence	Absent	Sympatric	Allopatric
4. Catch rate (mean number of individual fish per five minute shocking run)	<5	5 – 9	>9[1]
5. Proportion of individuals with disease, tumors, fin damage and other anomalies	> 5%	5 – 2%	<2%[2]
6. Proportion of individual fish as tolerant species[3]	>20%	10 – 20%	<10%

1. Score 6 if > 50
2. Score 8 if >0 but <2%.
3. Add redbreast sunfish and green sunfish to list of tolerant species.

Table 8. Proposed Modified Version of Williams (1996) "Brook Trout" IBI (see Table 7) for Stream Sites Located at Elevations of 1,700 feet or more in the Upper Tennessee River Watershed.

Metric	Possible Scores		
	1.5	4.5	7.5
1. Total Ephemeroptera taxa	<3	3 – 5	>5
2. Total EPT taxa	<8	8 – 15	>15
3. Brook trout presence or absence	Absent	Sympatric	Allopatric
4. Catch rate (mean number of individual fish per five minute shocking run)	<5	5 – 9	>9[1]
5. Proportion of individuals with disease, tumors, fin damage and other anomalies	> 5%	5 – 2%	<2%[2]
6. Proportion of individual fish as tolerant species[3]	>20%	10 – 20%	<10%
7. Proportion of individual fish as wild trout (all species)	Absent	0 – 10%	>10%
8. Proportion of individual fish as omnivores, generalist feeders and herbivores	>20%	20 – 10%	<10%

1. Score 4.5 if > 50
2. Score 6.0 if >0 but <2%.
3. Add redbreast sunfish and green sunfish to list of tolerant species.

Table 9. Biotic Integrity Classes Used in Assessing Fish Communities Along with General Descriptions of their Attributes.

Class	Attributes	IBI Range
Excellent	Comparable to the best situations without influence of man; all regionally expected species for the habitat and stream size, including the most intolerant forms, are present with full array of age and sex classes; balanced trophic structure.	58 – 60
Good	Species richness somewhat below expectation, especially due to loss of most intolerant forms; some species with less than optimal abundance or size distribution; trophic structure shows some signs of stress.	48 – 52
Fair	Signs of additional deterioration include fewer intolerant forms, more skewed trophic structure (e.g., increasing frequency of omnivores); older age classes of top predators may be rare.	39 – 44
Poor	Dominated by omnivores, pollution-tolerant forms, and habitat generalists; few top carnivores; growth rates and condition factors commonly depressed; hybrids and diseased fish often present.	28 – 35
Very Poor	Few fish present, mostly introduced or very tolerant forms; hybrids common; disease, parasites, fin damage and other anomalies regular.	12 – 23
No Fish	Repetitive sampling fails to turn up any fish.	